Addressing the Implications of Soy Production in South America

Exploring the motivations behind CSR policy implementation within soy supply chains and evaluating their success

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Summary

Whilst it is a well-accepted realisation that there is continual population growth on Earth, the consequences of such on global commodity supply are often overlooked. With population nearing 8 billion the requirements to sustain livelihoods means commodity yields must grow with equal precedence. One such commodity in which this is occurring is soy; an element in both animal feed and adapted for direct human consumption. With such necessary demand increases comes the threat of increasing implications of supply chains in regions of soy cultivation. By analysing the most prominent implication of soy within the production stage company effort to curb negative implications can be analysed for the Cerrado biome. Such implications and the ability to alter business models to compensate for change were examined through the research question:

What are the motivations influencing soy producing corporations within South America to adopt Corporate Social Responsibility policies within business models and to what extent are implemented CSR policies successful?

The analysis of the research question was deduced through the completion of eleven expert interviews, significant literature analysis the distribution of a consumer preference survey, and statistical analysis. Three companies; Cargill, ADM and Glencore were chosen for business model analysis. These companies varied in exportation volume and Cargill was privately owned which ADM and Glencore are public companies.

Results showed the most significant threat of soy expansion is that of deforestation; stemming from the indirect removal of native flora for cattle ranching, in turn preparing land for soy. CSR policies were analysed for their willingness and ability to overcome this deforestation. To maximise the environmental protection offered by CSR policies the motivations behind company implementation must be identified to allow replication.

The first identified motivation was that of upstream motivations; relating to the top-down pressure from head office firms and their ability to alter business throughout various jurisdictions. Secondly, Bottom down pressure stemming from consumer preferences; consumers and supplying companies are more likely to alter business proceedings of production companies as to have a successful business model desire for the product is required. The final identified motivation is that of reputational risk; companies choose to implement policy that promotes a positive company image in order to maintain stakeholder investment.

Once motivations had been identified the success of CSR policy implementation could be determined for the companies in question. This was accomplished by analysing differences in policy wording and divulging targets aimed at combatting deforestation. It was seen that whilst there has been a positive alleviation of deforestation risk in the Cerrado region by Cargill and ADM this has not significantly increased since the incorporation of CSR zero-deforestation commitments into business models. Determining that the role of CSR is not successfully encouraging a greater stance to limit deforestation in soy production.

Recommendations are provided as to how best alter CSR policy to increase its success within production companies in South America. Interview analysis revealed the most practical way to do such is via the increased involvement of government legislation, overruling the voluntary aspect of CSR to increase environmental protection.

Preface

This thesis is the completion of my master's degree in Environment and Society Studies at Radboud university Nijmegen, specialising in Corporate Sustainability. The subject of this thesis revolves around the implementation of corporate social responsibility policies within soy commodity supply chains.

The willingness to engage with such a topic stemmed from the desire to understand more about the sustainable reality of food choices. It is well regarded that non-meat produce is better for the environment, however, little is understood in the general public domain regarding the implications of these products. Therefore, by analysing the supply chain of soy with regard to CSR policies a greater understanding could be gained.

There are several people I would like to thank who offered support throughout this research process. Firstly, my supervisor at Radboud University, Mark Wiering. His feedback throughout this process was beneficial in assisting with the completion of this thesis. Secondly, my supervisors at the Stockholm Environment Institute for providing both academic and pastoral support through such an unprecedented time. Dr. Simon Croft and Dr. Jonathan Green went above and beyond to assist me with any queries and made me feel confident in my work. Their continued support and reassurance provided significant comfort and allowed me to believe I could attain the expectations assumed to me. It is also important to thank the interviewees who partook in this thesis. Without their input I would have been unable to conceive such a depth of understanding for portrayal within this work.

Despite being unable to visit my internship institution working as part of the SEI team provided an insight into the working of such companies and really allowed me to feel an integrated and valued member. Copious interesting conversations have arisen between my colleagues which helped to guide new topics for further investigation throughout this thesis.

My final thank you belongs to my family, who have supported me immensely through what can only be described as a never-ending year of challenges. To my uncle, every phone call at 3am was met with the upmost concern, despite my tired angst. My mum, I would not be half the person I am today if I had anyone else raising me, I will be forever grateful for the sacrifices you continue to make on a daily basis. I love you both dearly and hope our little family of three continue to thrive. Thank you!

Enjoy reading!

Harriett Stenton
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1. Introduction

This first chapter introduces the underlying need for societal research into the implications posed to economic, social and environmental factors influenced by soy production. South American soy production forms the basis of this research. The chapter shows that a large knowledge gap exists regarding methods to address the implications associated with soy cultivation, the scientific and societal relevance expose the benefits of addressing such knowledge gap. This results in a set of research aims and questions which will be thematically addressed throughout this report.

1.1. The global necessity

The industrial revolution sparked the offset of a rapidly growing global population in the 18th century. Nowadays, population is nearing 8 billion, increasing global consumption whilst resource limits and environmental degradation are becoming ever more apparent. Issues of population and consumption are intertwined, neither can be ignored and both are exacerbating the anthropogenic implications upon earth (Toth and Szigeti, 2016). The ecological impacts of over-population were first recognised by Malthus in 1798 (Malthus and Gilbert, 2004). Historically Malthus' work has been furthered by analysing that such increases pose a threat on natural resources such as fossil fuels and land availability whilst simultaneously increasing pressure on grown commodities (Toth and Szigeti, 2016). One such affected commodity is soy, with production of the crop having more than doubled in the past 20 years expanding into a $123 billion market (Brainard, Jones and Purvis, 2019). Soy is a commodity with a wide range of assets, yet is most commonly attributed to agricultural and industry applications, predominantly being processed into oil and animal feed. A smaller proportion is processed for direct human consumption via the substrates of soymilk, tofu and soy protein (NC Soybeans, 2020). Such applications are influenced by the aforementioned consequences of increased demand, being significantly fuelled by a combination of unequivocal population growth and global economic growth. Population growth offers the most obvious need for production increase with the simplicity of having more people to feed, growing by an average of 1.1% annually (Toth and Szigeti, 2016). However, coupled with this is the more complex factor of increased economic growth.

Nations such as China in particular have shown unprecedented economic growth spurred by the 1978 market-orientated reforms. This facilitated significant growing incomes creating the desire to move towards a more modernised societal field. The rise of the Chinese economy has resulted in rapid income growth and globalization producing a dramatic shift of Asian diets away from staples, towards livestock and dairy products (Higgins, Zha and Zhong, 2016). This denotes a diversification of diets towards more 'Westernised' diets. The rapid spread and availability offered by supermarket chains and fast food restaurants are facilitating such a transition. Across the globe the alterations in food systems can be accounted for by analysing shifts in rapid urbanisation, diet diversification and closer integration of global economies throughout food sectors (He et al., 2016). Simultaneously movement of manufacturing plants to be closer to public demand creates a lesser transportation necessity, saving funds. Coupling these alterations with a steep reduction in freight and transportation costs means nations globally are seeking the importation of commodities such as soy to fulfil various national demands (Ciorasteanu, 2019).

The increase in production of soy needed to facilitate the growing economy determines that the commodity yield must be increased or expanded. The necessity for a warm growing season, ample water and sunlight led to astounding growth for soy in South America. Currently over 50% of the global soy yield arises from just five nations – Brazil, Argentina, Bolivia, Paraguay and Uruguay – whereas 50 years ago a mere 3% was produced here (Weiland and Handfield, 2013). It also coincides that these nations are host to some of the most biodiverse areas on the planet. Environmental groups such as WWF have reported that cultivation in South America has already eliminated substantial quantities of natural forest biome (WWF, 2019). Such regional cultivation was first established in the 18th century, when soy was introduced into South America from Asia. Large advancements in production capacity stemmed from the Northern US imposing a soy exportation ban in 1970 causing South American cultivation to increase 12-fold over the commencing decade, reacting to the new market space created. This period saw agronomic improvements and government investment causing expansion to encroach into tropical regions, expanding from 1.4Mha to 11.3Mha of cultivated land (Soterroni et al., 2019). Extensive expansion created unprecedented commodity frontier growth and posed significant consequences to biomes of South America.

The issues surrounding the ability to increase production stems from knowledge that soy is deemed 'biotech food' meaning the crop already originates predominantly from genetically modified beans. Combined with the status of already intensively farmed land means that to cope with demand increases the area currently cultivated must be expanded (Miransari, 2016). Soy crops are already genetically modified and land for growth is significantly overstretched; this means Intensification is an inefficient solution to cope with the global drivers demanding significant soy production is maintained. Such proficient demands also dictate that the consequences of soy production can be overlooked, ensuring there is a limitless supply to the powerful consuming nations.

1.2. Implications of Soy cultivation

There are economic, social and environmental consequences of increased agricultural production. Biomes such as the Cerrado in South America comprise of distinct biological communities that form in response to a shared physical climate. Such biomes possess vital ecosystem services and habitats and offer some of the most biodiverse regions on the planet, the location of the Cerrado is presented in *Figure 1* (Saatchi et al., 2001). As the possibility to increase the intensity of soy cultivation is widely saturated there remains significant driving forces to implement land clearance and land-use change to facilitate demand increases. The need of increased demand is being received by biodiversity-rich and unique landscapes due to an unequal global distribution of uncultivated land. Increases in productivity generate short-term economic gains which are appealing to less economically developed nations but can simultaneously damage long-term human prosperity and well-being (Fearnside, 2001). The regions most threatened by expansion house specialised ecosystems yet are emerging as powerhouses for global commodity production, playing a vital role in current economies.

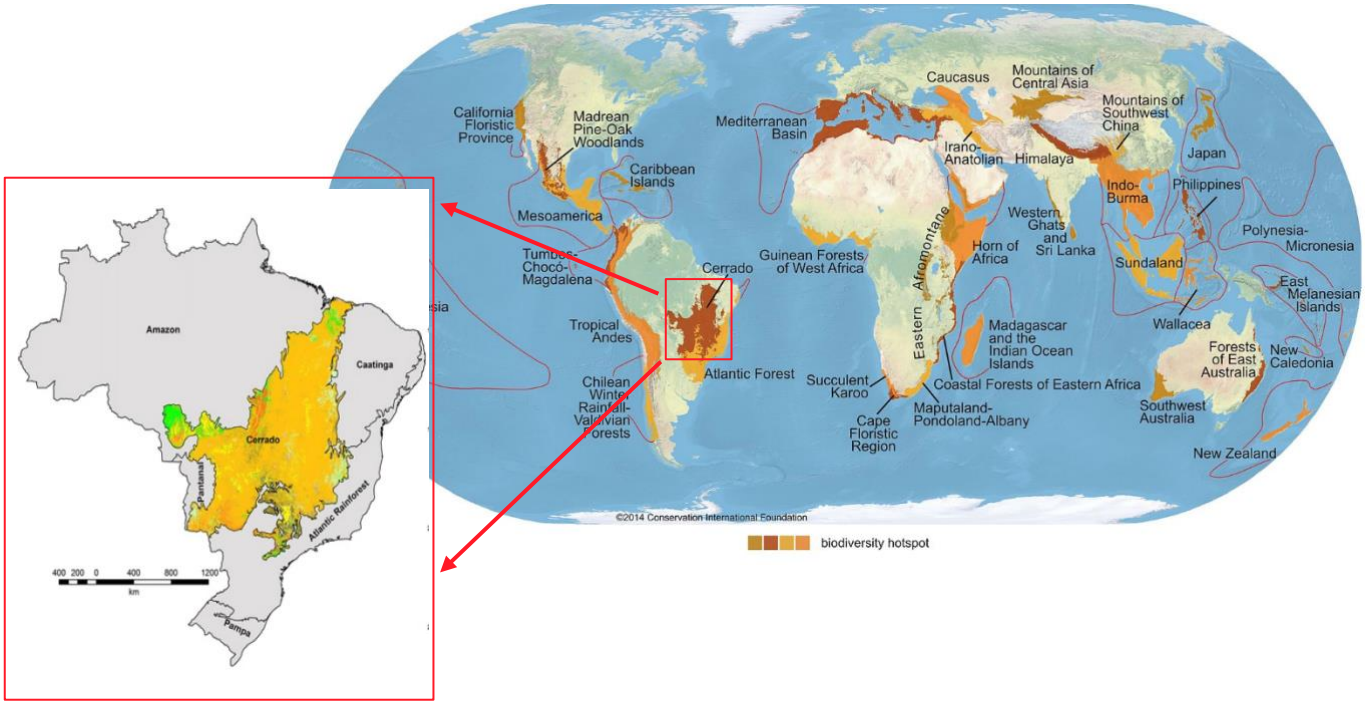

Figure 1 – The location of the Cerrado forest on a global scale, highlighting a more detailed map of the forest extent (Sourced from TRASE 2020)

Soy cultivation can be seen to generate both direct and indirect implications for localised landscapes and populations as well as global effects via trade of produce. Direct implications can be described as those in which they are dealing with the direct impact of one factor upon another when not mediated or transmitted through a third source/activity (Keeney, 1980), such as a tree being removed to create land for soy cultivation. Indirect opposes this meaning by pertaining to the information that such impacts upon the environment are not the direct result of a given action, instead are often produced away from or as a consequential result of complex proceedings (Keeney, 1980), for example, the removal of the tree for soy cultivation meaning sequestration of carbon is reduced and GHG emissions rise. Such implications influence three individual realms of economic, social and environmental areas. Whilst these implications often identify as transboundary, in the sense they can overlap, it also presents physical transboundary issues with implications not being confined to either a singular biome or country. The nature of the vast heterogeneity of the soy sector in South America spans a wide array of agro-ecological zones, topography and operates with varying levels of technology and sophistication (Fearnside, 2001).

The intertwined nature of soy cultivation impacts can be seen to exemplify the implications posed to the environment and socio-economic factors. These impacts are increasing throughout nations reliant on soybean exportation as trends in global consumption and demand are expected to continue to rise. Due to the integrated and multifaceted nature of analysing such implications, particular focus will be awarded to the environmental issues of the Cerrado throughout this thesis. Such will include aspects of both economic and social dimensions simply due to the intertwined reality of tackling the environmental issues. No impact exists in isolation without concurrent and often unforeseen implications arising as indirect factors, affecting both those in immediate proximity and the larger global economic market also.

1.3. Identifying future trends

In order to determine how impacts of soy production will change in the future the predicted trends of soy expansion must be examined.

This information is compiled to establish that to become more sustainable whilst facilitating rapid changes, action is required on a large scale. Due to soy being determined as a flex crop it is prized for its versatility for food, feed, biofuel and commercial applications (Oliviera and Hecht, 2016). These consumption demands are not set to decrease in the near future with the occurrence of rapidly emerging economies increasing dependence on the commodity. Demand for soy is expected to continue to increase the agricultural output of the commodity from South America for use in both the meat and biofuel industry. With China accounting for around 60% of global consumption yet sharing plans to reduce domestic soy supply by 30% reliance on outsourcing is expected to increase dramatically (Wu et al., 2020). Europe is restricted and in some cases prohibited from South American soy importation due to the genetically modified characteristics. One strategy attempting to address issues is via changing and implementing new policy document alterations. Corporate Social Responsibility (hereafter, CSR) pledges can be the required addition to proposed business models.

With demand increase stems the necessity to increase global production and the implications associated with expanding commodity frontiers becomes intensified. In order to account for increases in commodity production agricultural trade must quickly become more sustainable, effective action on a large scale must be enacted to facilitate this. Despite examining explicit links between commodity production and economic, social and environmental impacts supply chain transparency is required as a prerequisite for reliable analysis and intervention planning.

Even if commodity production could be significantly increased there is minimal relevant use to understanding the imposed implications as no solution to environmental issues is offered other than halting production. Little practical use is offered to decision makers who are instead more concerned with tackling specific issues in specialised locations. One such way in which these decision makers within corporations are able to offer targeted advice is via the implementation of directional policy within business models, such as corporate social responsibility. Corporations are positioned to act as vital players through their ability to hold a physical presence within the commodity landscape via production and processing; additional enforcement; legal compliance; incentivisation's for sustainable proactive and zero deforestation (Valdez-Juárez, Gallardo-Vázquez and Ramos-Escobar, 2018). These players possess the ability, should they desire, to exert significant leverage via policy to promote superior standards among thousands of producers. However, if addressed incorrectly their dominance allows significant pressures to supress farm gate prices, exert political influences and justify decisions in the name of food security often at the consequence of social and environmental concerns (Saxton, Ren and Guo, 2020). In order for the uptake of such policies to be effective there must be mass internalisation into copious business polices. Such uptake requires an understanding of the potential drivers causing companies to choose to implement business model changes above their required contributions. If drivers can be successfully determined then the uptake can increase creating a reduction in negative associated implications and protecting the soy commodity biomes. A lack of understanding towards company willingness to implement CSR may be seen to exacerbate negative implications; causing more damage than lack of policy as companies may impose policy incorrectly to appease the current and predicted strains of the sector.

1.4. Societal and scientific relevance

1.4.1. Societal relevance

Societal relevance stems from the lack of information currently available regarding drivers for corporations to implement CSR within elements of their supply chain processes. It is important to provide information to aid the implementation of CSR policies to allow improvement and scalability. In turn increasing the chances of successful implementation by tailoring of CSR policy to regional drivers (Tang and Tang, 2017). The successful implementation of such strategies also holds the potential to generate more skilled labour positions and reduce illegalities, drawing investment to the often-poor areas associated with soy production. Such research will also provide insight into the reasons of CSR failure. Policy strength has been seen to affect consumer choice, as this is often promoting a low environmental footprint (Lehner, Mont and Heiskanen, 2016), the potentially misleading information given by companies failing to achieve their CSR could impact consumer choice. Such determines that by addressing the motivations behind companies choosing to implement CSR policies within business models a potentially fruitful method of addressing sustainability issues can be developed. This will generate more informative policy amendments and increase knowledge of the pressure points required by corporations to implement successful change. CSR pledges are vital in helping achieve the 1.5°C recommended warming limit imposed by the IPCC (IPCC, 2019), failure to comply can exacerbate the effects of climate change by increasing CO_2 emissions (Hulme, 2016). By understanding the drivers of CSR commitments and assessing areas of failure, policies can be tailored to increase compliance and uptake by companies, aiding with IPCC targets.

1.4.2. Scientific relevance

The increase in CSR pledges intends to incentivise companies to improve environmental action, community involvement and economic growth. Increasing knowledge of the motivations compelling companies to pledge means the deployment of CSR can better understood and extrapolated to a larger number of actors. By also analysing the effectiveness of current CSR commitments failures can be understood and recommendations given. This is particularly important as analysis of commitments determines the contribution of negative externalities of supply chains. Analysis of motivators driving company change can improve understanding of the process of business model alteration. This can in turn increase the amount of successful applications of CSR policies as the optimal conditions for successful change can be determined. Then addressing the issue of failures in CSR policy implementation, aiding to provide a new understanding as to why companies choose to implement CSR policies. Creating new information and expanding current knowledge on the reasons companies implement behavioural change choices within business models. This knowledge gained throughout this thesis can then be interpreted to expand knowledge in how to entice companies to implement CSR and increase good application when done so.

1.5. Research aims and question

1.5.1. Research Aims

This first research aim is to gain insight into what motivates corporations to implement effective CSR policies into their existing business models. Secondly to determine variations in the current CSR pledges of soy exporting companies. Thirdly, these identified pledges will be

assessed for success in achieving proposed goals. Recommendations will be provided on how to improve CSR policy success.

1.5.2. Research question

What are the motivations influencing soy producing corporations within South America to adopt Corporate Social Responsibility policies within business models and to what extent are implemented CSR policies successful?

1.5.3. Sub-questions

1. Why do companies working within the Cerrado require CSR implementation?
2. Which factors most prominently motivate business model change in corporations?
3. Do motivators differ between various soy exporting companies?
4. Are all dimensions of CSR accounted for in policy implementation?
5. Are CSR pledges by corporations producing significant change?

1.6. Research overview

The formulated research question and sub-questions lead the basis of this thesis. In order to determine both scientific and societal relevance some literature has been discussed. However, chapter two will divulge more insights to resent an overview of existing literature relevant to research. Chapter three addresses the conceptual model for the thesis. Chapter four looks at methodological approaches in detail. Chapter five presents results and findings in a theoretical analysis, using the conceptual framework to guide knowledge advancement. Chapter six, draws conclusions as to the research assessed throughout this thesis and provides recommendations future policy and further research suggestions.

2. Theoretical framework

By compiling insights from literature relating to implications of the commodity soy and accompanying CSR policy research the theoretical framework sets out the basis of how the implications of the Cerrado region can be addressed. The findings of this chapter serve as a reference point for the analysis whilst developing the theoretical framework for this thesis.

As stated within the introductory problem statement the necessity to increase soy production creates a significant range of implications. Each biome and commodity frontier across the globe experience their own set of unique challenges. Whilst implications can be somewhat generalised to overarching and comparably climatic regions it is important to expand upon a selection of unique implications associated with soy produced in the Cerrado. In doing so further analysis can be undertaken in identifying the correct motivations and main threats posed to the region in question. This provides a focus for the thesis and assists in analysing the first identified research aim. This section will examine the main implications recognised and confirmed as arising throughout literature for the Cerrado.

Once these implications have been accounted for, the relevance and implementation strategy of CSR can be examined to determine how the strategy has evolved to be applicable to the soy industry. Such initially examines the reasonable need for a dramatic change to corporate business models. By understanding the development and key concepts incorporated within CSR policy it can be deduced which elements of CSR are used to determine pledges towards goals. Coupled with examining the theoretical process of change within general business models, an understanding can arise into developing a framework to analyse the motivations between companies choosing to implement CSR into business models. Together theories identified within this chapter will form a conceptual toolbox to guide the interpretation of data analysis within this thesis.

2.1. Localised implications of Soy cultivation

There are a variety of implications stemming from soy cultivation unique to the Cerrado. This section will examine the main implications, compiling them into categorisations of economic, social and environmental relevance.

2.1.1. Economic implications:

Economic implications refer to those that affect the productive systems of a territory or the ability to purchase goods (Buys et al., 2014). Whilst the economic sector could be analysed on a global scale due to the interconnectivity of supply chains, here knowledge focuses on the sourcing of the commodity from the Cerrado regions.

Income:

The most prevailing positive economic implication stemming from soy cultivation can be attributed to that of the effects upon farmer incomes by generating additional funds for farmers. Short term benefits of this include soy generating $2.3 billion per year for Brazil and Argentina via exportation to Europe alone (Mendoza, 2020). Significant increases in yield can be seen to change gross margins affecting whole-farm incomes. Soy represents a vital source of income for producer countries.

2.1.2. Social implications:

A social implication is described as the effect on people or communities that happens as a result of an action, inaction, programme or policy (Buys et al., 2014). Such implications within the Cerrado region can be measured by assessing who benefits or is impacted by aforementioned actions.

Land rights:

Soybean production within the Cerrado has historically been associated with displacement of small-scale farmers and communities for commercial production. Past legislation regarding the ownership rights of indigenous people may not be documented or legally recognised, leaving local people at risk of losing their homes and livelihoods (Bolaños, 2011). Such is seen to particularly impact the rights of the Tupi and Guarani people, whom survive in small numbers scattered throughout remote forested areas (Iriarte et al., 2016). Corporations are often seen to fail to understand and manage impacts related to land rights leading to reputational risks in the form of protests, work stoppages or damaging social campaigns (Balaños, 2011).

Working conditions:

The influx of soy expansion does not provide a surge of job opportunities, instead the process is highly mechanised meaning crop production is not particularly labour intensive (McKay and Colque, 2015). However, the occurrence of illegal practices regarding working conditions still arises as the illegitimacy of legal proceedings is often exploited and underrecognized within companies with less reputational standards (Fonjong et al., 2018). Accounts of modern slavery flood the Brazilian soy industry with reports of no accommodation or medical care being offered (Fatah-Black, 2020). The agricultural boom of South America also stagnated a positive poverty alleviation trend that had occurred prior to 2016. Poverty has since risen due to unregulated wages generating an unaffordability of food for local consumers, instead prioritising land and resources for exportation (Fatah-Black, 2020).

2.1.3. Environmental implications:

Environmental implications are hereby referred to as those in which any change to the environment, whether this be adverse or beneficial, occurs as a result of a facilities activities, products or services (Buys et al., 2014). Here focus is given to the environmental implications posed to the Cerrado region.

Deforestation:

Deforestation is a visible threat for the Cerrado region, predominantly as a secondary implication rather than a primary, stemming from cattle ranching expansion. It is estimated if current conversion rates continue there could be a loss of a further one-third of Latin America forests by 2060 (Schaumberg, 2020). Whilst the soy moratorium and other factors have helped eliminate negative implications of soybean production in Brazil, current native vegetation protection laws still allow for conversion within the Cerrado region. It is seen in more recent times a significant expansion in soy demand has caused direct deforestation for soy cultivation (Bicudo da Silva et al., 2016). From deforestation stem a plethora of secondary implications posed upon the natural environment in which the commodity frontier is located.

Biodiversity:

With the removal and alteration of land, threats are posed to the stability of biodiversity within biomes with high environmental heterogeneity. The destruction of natural and virgin vegetation for soy production leads to a direct loss of biodiversity via removal and fragmentation of habitats, often predominantly impacting endemic species (Neves et al., 2017). Species resort to surviving upon habitat islands limiting the ability to freely breed and access nutritional resources safely due to increased wildlife-human interactions. Such a loss of biodiversity is detrimental for the survival of classified endangered species but also creates additional implications for natives of whom reliance is often imposed upon the services provided by native flora, fauna and ecotourism (Carnaval and Moritz, 2008).

Soil Health:

The removal of vegetation and loss of species can be visualised yet impacts upon soil are less obvious. Assessments of the effects of deforestation and post-clearance tillage methods have established significant reductions in precipitation penetration rate. As time progresses cleared regions undergo further declining infiltration rates, favouring surface run off rather than penetration, causing leaching of production fertilisers and pesticides. This risks eutrophication and hypoxic zones occurring within localised waterways (Lal, 1996). This impacts wildlife within the area and limits soy yields. Such shows the impacts of soil erosion can continue to determine the structure and behaviour of soils for up to 15 years after clearance (Lal, 1996).

Climate change:

Climate change is a consequence of deforestation due to the loss of sequestration potential, but is additionally intensified by soil health degradation, increased water usage and direct farming pollutants. Replacing forest canopies with a soy monoculture alters the water cycle leading to drier and warmer conditions (Carnaval and Moritz, 2008). Direct deforestation contributes to 15% of global greenhouse gas emissions via sequestered carbon release through burning. This reduces the cloud condensation nuclei within the areas and facilitates shifting weather patterns, altering levels of precipitation (Rodrigues et al., 2009). These climatic changes are not confined to the boundaries of the affected biome, generating global implications.

2.1.4. Addressing significant implications

Whilst legal reforms have historically been used in an attempt to target these issues they can be deemed to have occurred with minimal success. Currently moratoriums placed upon deforestation in the Amazon have simply sped up deforestation within the Cerrado. Thus, alteration of company business models must acknowledge the roots of the need for change.

This thesis will focus predominantly on implications most directly associated with the environmental consensus. As stated the interdisciplinary nature of consequences of soy cultivation means this topic cannot be addressed in isolation but will be taken as the focal point of examining whether CSR policies, have been successful in eliminating or improving the issues associated with environmental decline in South America. By examining the ideal state, targets can be assumed in which companies will be able to alter business models to ascertain desired goals.

2.2. Developing a global change understanding

Once the implications of anthropogenic changes have been understood the internalisation of effects can occur, allowing for accountability to be determined. With such accountability stems a moral desire to repair and counteract identified impacts. However, the process of acknowledgement is not an instantaneous realisation and has required significant global progress and refinement to develop an accepted strategy for change. In order to understand the direction of desired change and global willingness to address social, environmental and economic challenges the rise of awareness must be mapped and understood.

2.2.1. The process of global change

The most significant modern-time alterations to perceptions of environmental, social and economic foci can be attributed to the time period stemming after the world wars; measures meant that there had been a significant increase in technological ability and nations were significantly more self-reliant (Miller, 1998). Socio-economic changes arising after the second world war sparked a change in various global perspectives. For the first time emphasis was given to the need for conjunctive natured problem solving and a greater consensus of the potential threats posed by human dominance. The ending of the war sparked a new industrialisation phase with significant developments in transport and technology having been made over the prior 6 years (Smith, 2018). The time determined there was a greater public responsibility onus attributed to a sense of comradery, meaning opportunity to tackle global issues became possible.

The need to address environmental concerns relating to anthropogenic conditions was first acknowledged on a global stage at the 1992 Rio Earth Summit in which 178 nations adopted the Agenda 21 agreement. This planned to build a global partnership for sustainable development to both improve human lives and protect the environment (Dobson, 2000). The summit aimed to draw attention and impose accountability to developed nations of the Western world for environmental deterioration. Such saw the agreement disregard the need of undeveloped or developing nations to act. This facilitated the expansion and intensification of negative anthropogenic implications towards the environment to continue outside of developed nations (Santilli et al., 2008). In anticipating such a continued increase, the global summits became annual, with particular milestones being recognised in Kyoto in 1997 when developing nations were also assumed accountable and required to provide change (Dobson, 2000). This decision was key as with soy, social, economic and environmental implications were arising from procedures in developing countries. Therefore, whilst remaining exempt from global environmental agreements the implications could continue to grow exponentially hidden under the guise of aiding development. Such was seen in reports by Breidenich et al (1998) who describe the Kyoto protocol as being capable of reflecting the complex political, economic, scientific and legal issues of anthropogenic implications. However, as furthered by Soroos (2001) such protocol presented significant failures in the field of complex flexibility mechanisms and the tendency for differentiated responsibilities of nations, thus encouraging self-serving negotiating practices, creating a stalemate between the global north and south. Understanding that there were significant impositions identified by attempting to coordinate global nations led to the creation of millennium development goals (hereafter, MDGs) just three years later in 2000, at the millennium summit of the United Nations.

The MDGs are eight goals with measurable targets and clear deadlines for improving the lives of the global poor, being signed by 189 nations in a historic declaration (United

Nations, 2020). There are general criticisms of the MDGs, such as their lack of analytical power and justification behind the chosen objectives; this means general consensus determines that MDGs themselves are not an objective measure to tackle the desired issues. Instead MDGs can be used as methodologies to assist with goal attainment and as a framework to aid with national commitments (Sadasivam, 2005). Many such strategies were developed, with particular focus of this thesis being drawn towards the environmentally focussed goals of ensuring environmental sustainability. The criticisms of lacking initiative into how such goals would actually be attained continued as a reoccurring issue of concern, peaking shortly before the Paris agreement in 2015.

To provide explicit focus to MDGs specifically aimed at environmental progress the Paris agreement of 2015 was used to initiate new pathways, enticing nations to reduce emissions through predetermined reductions targets. In order to accomplish such a feat, nations globally have implemented individual national targets, with mandated five-year monitoring intervals (Falkner, 2016). In turn allowing a monitoring of the success in curtailing negative environmental implications from anthropogenic processes. One such way the Paris agreement addressed this issue was by creating both opportunity and risks for businesses. By investing in larger markets for low carbon technologies and services companies will be able to sustain future revenue and jobs (Aldy et al., 2016). The agreement sends a clear message that corporations owned and situated in the 195 countries ratified by the agreement must significantly increase their level of ambition to mitigate environmental degradation. Whilst there are no legally binding incentives for companies, national targets mean pressure from governments are promoting the incorporation of sustainable business models (Falkner, 2016).

Again, following such a significant summit there was a triggered desire to accelerate global change. The Sustainable Development Goals (SDGs) were produced a year later in 2016, laying out a blueprint to achieve a “better and more sustainable future for all”, as shown in *Figure 2* (UN, 2020). The goals produce an interconnected network spanning social development, environmental protection and rehabilitation, whilst facilitating sustainable global economic growth. Their intention remains to span all aspects of the biosphere including the commodities extracted and their movement strategies. Creating such an inclusive set of goals with a time limit of 2030 requires the global understating and conceptualisation of the necessity for such change. It also required the addition of accountability of developing nations determined within the Kyoto protocol to achieve such ambitious targets (Dobson, 2000). Once again no clear determinant of a pathway is established in how to reach these goals. Different strategies have been produced across the globe, spanning from legal impositions to multinational trading schemes. It can be determined that the ambitions of companies to implement and change business models, to create a more ‘sustainable’ policy, is based upon the requirements of the SDGs (Sachs, 2012). With regard to the commodity of soy focus can be adhered to the concepts of no poverty; zero hunger; good health and well-being; gender equality; clean water and sanitation; decent work and economic growth; industry, innovation and infrastructure; sustainable cities and communities; responsible consumption and production; climate action; life on land and partnerships (UN, 2020). In order to successfully address the “commodities extracted and their movement strategies'' as stated by the UN (2020) it is not enough to accept a national reduction target as a whole, instead companies must adhere and promote sustainable proactive change themselves. A recognised strategy for doing so is via the incorporation of CSR policies into business models. In doing so companies are able to compile attempts at

attaining targets attributed to SDGs into one strategy, enabling a sustainable business model whilst accounting for economic, social and environmental necessities throughout. These SDGs are important in relation to developing CSR policies for implementation into soy supply chains. They can be seen to guide company decisions and lead the way for global initiatives into reducing environmental implications of commodity exportation. Due to there being no direct regulation relating to the exportation of soy from South America, the SDGs can be used as the target assumed by companies aiming at altering business models to prevent implications arising. Therefore, the SDGs are acting as an umbrella goal in which the process of soy can be accounted for within social and environmental oriented goals.

Figure 2 – The sustainable development goals as defined by the UN. (Sourced from: UN.org, 2020)

2.3. Understanding CSR

Corporate social responsibility is often referred to as an umbrella term, used to describe a number of processes undertaken by companies and regularly promoted by governments as a way of attaining sustainability and social goals. The multiple definitions and development of CSR mean in order to understand the place of CSR within business the development and principles surrounding the concept must be reviewed.

2.3.1. Development of CSR:

CSR first arose to fruition within business policies, with the aim of individual companies being able to present themselves as having a responsibility to society. This is not a new strategy, dated back through history to its infancy to around 1700BC with codes to builders, innkeepers and farmers, such saw them put to their death if negligence of their work caused major inconvenience. These concepts were based on the ideologies of moral arguments pertaining to how businesses should behave. It evolved around generalisations that companies should assume social responsibilities; contrary to previous historical beliefs that held implicit views regarding the need for a governmental role in corporate behaviours (Carroll, 2009). With industrialisation, the impacts of business on society and the environment progressed into commonly accepted knowledge spheres shortly after WWII (Scherer and Palazzo, 2008). This transition lead to CSR evolving beyond a code of conduct, and instead being incorporated into initiatives of NGOs and multi-stakeholders. CSR can be integrated into a firm's core decision making, management, strategy and activities.

Arguments against the implementation of CSR have been present throughout historical literature, stemming from utilitarian and neo-liberal perspectives. These views

determine that CSR incorporation is an unjustified distraction from profit maximisation and an intrusion into corporate affairs, therefore proving counterproductive (Secchi, 2007). Such a determinant is particularly applicable to companies within developing nations, such as South American regions, who have less profit margins capable of being directed towards CSR, instead monetary funds are required primarily for general business and reinvestment success (Secchi, 2007).

Despite such arguments regarding the legitimacy and development of CSR the concept has continued to grow throughout modern history. Literature states CSR has three main elements meaning business must ensure balance, value and accountability (Carroll, 2016). This definition has been modified by natural and social scientists alike to formulate a well-accepted concept revolving around three areas of business; economics, environmental sustainability and community. Literature including that of Bajic and Yurtoglu (2018) boasts the benefits of implementing CSR pledges into business models by identifying an improved brand reputation and enhanced attractiveness by surpassing standards required by government. Whilst this benefit aids with the economic aspect of CSR by increasing investment ability in the company; it also positively impacts the environment as policies revolve around limiting negative environmental consequences, in the process of doing so the community are often engaged (Cheung, Welford and Hills, 2009). However, it is argued that the benefits of CSR are only seen by large scale corporations, the cost falls disproportionately upon small businesses meaning the concept is not economically viable (Uduji and Okolo-Obasi, 2018). This can be seen to hugely damage the reliability of CSR, if the policies are not able to be implemented by the masses Lakshmi (2014) argues an entirely new development should be made. The basis of this being that mass uptake by all corporations is significantly more effective at generating social and environmental improvements that confining CSR to the largest and/or most profitable exporters.

The definition chosen for CSR within this work is that of Sakar and Searcy (2017). Whilst understanding that there is not an agreed overarching definition of CSR in modern literature the researchers undertook a meta-analysis of 110 interpretations to create a definition encompassing all identified aspects:

> *"CSR implies firms must foremost assume their core economic responsibility and voluntarily go beyond legal minimums so that they are ethical in all of their activities and that they take into account the impact of their actions on stakeholders in society while simultaneously contributing to sustainability."*

2.3.2. Current CSR

Three trends can be associated as being central to the modern concept of CSR; globalisation, institutionalisation and strategic integration.

The rise of globalisation led to CSR being implemented within business models via increasing competitiveness. Companies are in constant competition with each other enabling company decisions to be tracked and publicly documented, this competition can therefore be seen to drive discussions into individual company CSR contributions (Hopper, Lassou and Soobaroyen, 2017). Such is particularly applicable to the surge in demand for soy, with rapid global growth there can be significant competition between companies for reputational standings and stakeholder engagement.

The increasing prevalence of normative institutionalism means the sociological interpretation of institutions is guiding behaviour of actors. It predicts the norms and formal

rules of institutions will shape the actions of those acting within them. Rather than identifying CSR purely as a realm of voluntary action, the process of normative institutionalism places CSR explicitly within the wider field of economic governance characterised by the market and state regulation (Postel and Sobel, 2019). Studies suggest that institutional mechanisms enable homogeneity as well as heterogeneity in CSR reporting. Such has enabled the soy industry to play a vital role within the global economy by encouraging trust through the provision of policing and justice systems adhering to common law. By trading through a set of rules, regularities and structures there is a greater scope of influence available in shaping outcomes using CSR (Hay, 2017).

Strategic integration regards the holistic CSR perspective within a firm's strategic planning and core operations so that a company can be managed in the interest of stakeholders. This facilitates the attainment of maximum economic or social value in the long term (Gonzalez-Benito, 2016). Such a strategy is vital for CSR as the incorporation of novel business strategies within models ensures there is backing from stakeholders to facilitate the required changes with economic benefits.

The basis of these three trends stems from an understanding of the need to acknowledge the areas of the people's needs, profitability and the implications posed to the planet which are associated with CSR implementation in private sector institutions. These acknowledgements shape CSR choices and can be tailored to portray different company requirements when altering business strategy.

2.4. Triple Bottom Line

Although initially developed as a voluntary activity, today CSR is treated as an important and indispensable mechanism. It is no longer enough for companies to simply produce a quality product; they must account for wider social and environmental consequences alongside profit margins. Because of this such can be attributed to the concept of the triple bottom line principle. This denotes a method of assessing sustainability by determining a theory recommending companies to commit to focus on social and environmental concerns equally with profits. The theory posits that instead of an individual bottom line, there should be three: profit, people and the planet (McWilliams et al., 2014). The triple bottom line therefore gauge's a company's level of commitment to CSR and potential environment impact. Literature explains the implications posed to company workings if each factor is not accounted for within business models. According to Elkington, (1994) companies should be working simultaneously on these three bottom lines. It is noted as being strategically difficult to switch priorities that are seemingly diverse the successful balance of deploying money and resources to all three bottom lines can maximise financial returns whilst benefitting society.

Cortes (2017) examines the consequences of uneven representation of the bottom lines within business and finds that if companies choose to focus on profit, repercussions of rainforest destruction, exploitation of labour and ozone damage arise. Comparatively, if the planet is prioritised businesses suffer investment hurdles, particularly those with smaller profit margins, this can limit revenue opportunities as profit maximisation is reduced via the diversion to environmentally focussed aims (Cortes, 2017). Therefore, acknowledging that each of these bottom lines are required in a balanced manner means broad sustainability strategies can be defined for companies. Understanding that there is an equal share of resources required for each element can aid with implementation of CSR policy. The three

bottom lines can be more deeply analysed to relate more closely specific to CSR policy implementation.

2.5. Dimensions of CSR:

With greater understanding of relating the triple bottom line to CSR six individual dimensions can be determined as key in incorporating CSR policy into companies. Such dimensions span the aforementioned areas of people, planet and profit; yet provide knowledge of the expectations associated with meeting each dimension when designing policy alterations, *Table 1*:

Table 1 - The six identified dimensions associated with CSR and their corresponding definitions

CSR Dimension	Elements involved
Economic dimension	Covers issues regarding ownership, financial responsibility and business strategy (Friedman, 2007). These are aimed at maximising profitability of the company in order to increase stakeholder returns and maintain investment potential. This includes financial goals, wealth returns and company economic interests (Sakar and Searcy, 2016)
Ethical dimension	Introduces the concept of philanthropic actions alongside, fairness, openness, transparency and reputation are all key aspects. Moral accountability is also key. (Sakar and Searcy, 2016).
Voluntary dimension	A central feature of CSR is that implementation of the activity must not be enforced, it must surpass the minimum standard required by law (Rodríguez and LeMaster, 2007)
Social dimension	Responsibilities should not be focussed on economics and environment but also towards bettering society by improving quality of life, gender equality and social justice, all in line with the millennium development goals (Sakar and Searcy, 2016).
Environmental dimension	Requires policy to incorporate environmental value and protection alongside economic gain and social issues. Plans must provide long-term sustainability for people, planet and profit (Babiak and Trendafilova, 2011).
Stakeholder Dimension	This determines that companies have obligations to all stakeholders and actors involved within business, this includes aspects such as indigenous understanding and employee benefits (Grady, 2017).

By understanding the relevance of each aforementioned dimension within CSR, company policies within business models can be analysed to determine the level of representation of each dimension. It can also be used to validate the classification and implementation of CSR if criteria are met. It can determine which of these dimensions acts as a primary or significant motivator for companies to pertain a movement of change. If the foci dimension for companies can be determined then motivators influencing companies to implement CSR policy can be identified. This can then be used to increase uptake and successful implementation of CSR policies.

If the main dimensions of individual companies can be identified trends can be analysed and differences located between motivations of companies. Therefore, by understanding the dimensions of CSR the triple bottom line theory can be incorporated,

determining if individual companies are motivated by people, planet or profit. Allowing suggestions for improvement and areas of failure can be identified to aid with future implementation into business models.

Whilst understanding the dimensions of CSR is necessary to understand implementation strategies and procedures it is not a simple process. In order for CSR to be successfully understood, analysed and implemented on scale associated with relative success, a 360-degree analysis of supply chains is required. This is because if implementation of CSR pertains only to the producers or consumers, the transformation element of a commodity such as soy has not been accounted for (Cortes, 2017). Therefore, in order to establish a full picture CSR, and determine what motivates companies to implement policies the entire supply chain requires analysis. The most impressionable areas of the supply chain must be accounted for spanning three phases, production, transformation and consumption. If the supply chain can be analysed as a singular entity then a greater image of the required dynamics for change are more readily observed.

2.6. Supply chains

Supply chains offer a collated system of organisations, people, activities, information and resources involved in the supplying of a product of service. When analysing a supply chain relating to soy cultivation and the commodity use, the process can be deemed as linear rather than cyclical, with very little re-entry of resources due to the consumptive nature of products. Whilst Cortes (2017) is seen to express the need to analyse each step of a supply to determine the overall consequence of soy, such a feat has been described as near impossible due to a lacking collaborative decision-making perspective throughout supply chains (Nematollahi, Hosseini-Motlagh and Heydari, 2017). Lacking collaboration arises because different stages of the supply chain have conflicting objectives or because information moving between stages is delayed and distorted. These issues are particularly prevalent when stages of the supply chain have different owners and span various nations (Ramanathan and Gunasekaran, 2014). This makes it necessary to examine individual stages of the supply chain separately before attempting to compile information. Whilst this realisation goes somewhat against the requirement of a 360-degree conclusive analysis as posed by Cortes (2017), to feasibly assess motivations of CSR each supply chain step must be isolated.

The complexity of the products capable of being transformed by soy means it is important to recognise the multiple requirements of the supply chain and the varied lineages associated with the raw commodity. When taken into account with the global, complex and multi-step nature of the modern supply chain, soy must be successfully analysed to ensure that the most effective approach to tacking implications is accounted for. Identifying the most impressionable and accessible stage of the supply chain indicates where best the application of CSR will prove most influential.

2.6.1. Stages of a supply chain

To determine the implications associated with the potential to implement CSR into supply chain logistics the stages of the supply chain must be examined. Supply chains are often opaque and difficult to understand making tracking of the commodity near impossible. In order to therefore determine the most effective stage in which to implement CSR into business models the production, transformation and consumption must be assessed for ease of implementation, shown in *Figure 3*.

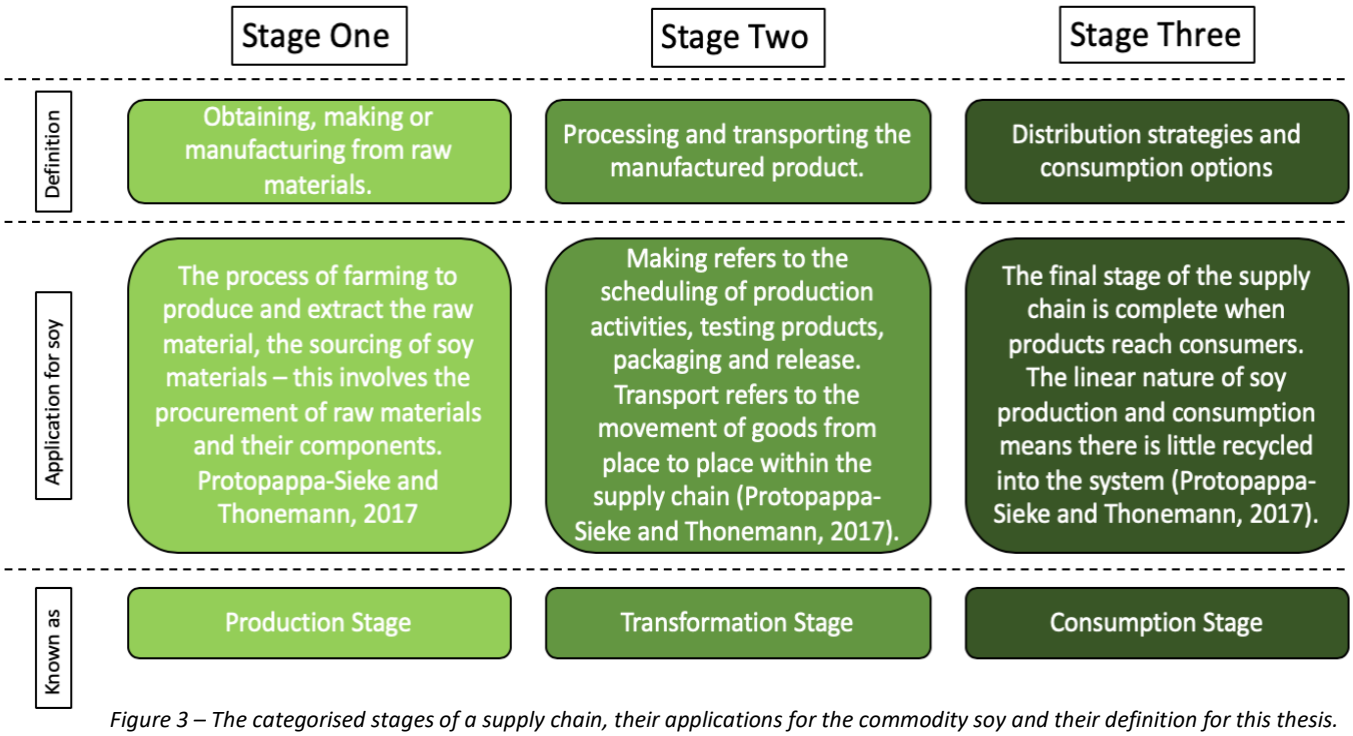

Figure 3 – The categorised stages of a supply chain, their applications for the commodity soy and their definition for this thesis.

2.6.2. The need to analyse the supply chain

In order for investors to assess the concerns associated with soy cultivation, risk should be addressed in the supply chains through direct engagement with their portfolio companies, relevant supporting policies and multi-stakeholder collaborations. A supply chain defined in the Oxford English Dictionary (2007) as "*the sequence of processes involved in the production and distribution of a commodity*". Such is more readily applied to the commodity of soy via the definition of the Bridgefield group who define the supply chain as "*a connected set of resources and processes that starts with the raw materials sourcing and expands through the delivery of finished goods to the end consumer*" (Janvier-James, 2011). These two definitions centralize the core determinants of an effective supply chain. They connote the need for a provenance and a destination within which goods flow and accept the approach that overall supply chains start with raw materials as resources, combine a number of value adding processes and finish by transferring goods to consumers (Cortes, 2017).

Due to the fast-moving and interconnected nature of supply chains business is somewhat reliant on good will and established norms to work well. To account for a significant change at the transformation stage it would require unprecedented collaboration of multinational organisations working to similar schedules and capacities (Maloni and Brown, 2006). Similarly, the role of the consumer, whilst important in determining CSR influence, is only witnessed at the final stage of the supply chains. Instead consumer-based organisations aim at changing perception and informing consumers rather than their own business models. Therefore, the most relevant place to impose CSR into business models is within the production phase (Kuokkanen and Sun, 2019). Stage one of production will be the one under the greatest scrutiny with aspects of the power tied to the consumers being considered. This stage offers the most reliable data analysis opportunities to determine the key motivators and success of CSR implementation with commodity sourcing and exportation companies.

2.7. CSR within production organisations

Through analysing the compiled dimensions of CSR, the main determinant enticing companies within the production phase to implement CSR policies can be understood. Production companies establish that the pillars of economics, sustainability and community associated with CSR are essential to ensure commodities are truly reaping the benefits of CSR (Stekelorum, 2019). In a social context CSR can address bribery and corruption whilst promoting equity and diversity of workers with fair pay and without labour exploitation. From an economic perspective CSR can increase stakeholder engagement and provide specialist jobs for skilled workers to ensure that profits are promoted via good practice standards. Such a strategy would therefore need to be implemented and traced within South American sourcing and exporting corporations to track soy (Stekelorum, 2019).

2.7.1. Implementing change within corporations

Theories of behavioural change attempt to explain the reasons behind decisions to implement changes within companies. In recent years interest into such behavioural augmentation has shifted focus to multinational corporations and international development. Models of behaviour aim to act as a diagnostic tool to understand the factors that explain a specific behaviour generating a given change. Ajzen's 1985 model predominantly aims at understanding behaviours rather than attempting to directly trigger a behavioural change. Behavioural change emphasises the role of intention but also covers circumstances that are not capable of direct control. Ajzen (1985) states, "*the incidence of actual behaviour performance is proportional to the strength of the individual's intention in performing the behaviour*"; in knowing this the desire to discover the motivation behind companies imposing CSR into business models is exemplified. This compiles the pre-contemplation, contemplation, determination and action phase of the behavioural change models (*Figure 4)*. By further assessing whether such companies are capable of reaching a meaningful level of change can be attributed to the relapse and maintenance phases. By compiling this information, the behavioural change model can be used to work alongside the predetermined CSR dimensions to replicate successful implementation. If motivations can be determined in accounting for a company's intention to perform a change then the change can be internalised to a more significant extent, generating a greater proportional change on negative implications of soy cultivation (Noar, Chabot and Zimmerman, 2008).

Such a need to determine company motivations that facilitate the required change are further expressed by Fogg (2009), who advances the behavioural change model to identify the requirement of willingness, ability and motivations for change to occur successfully. If a company is willing to change behaviour it must also hold the ability to perform it and requires a motivation to cause the change. In the instance of soy, the identification of negative implications is being used as the knowledge to determine the response of CSR implementation. Ability refers to the self-efficacy perception of performing target behaviour; in the case of soy, having high ability to perform change can be attributed to the characteristics of money, time, physical effort, social deviance and non-routine. Motivations are also vital in policy change with regard to timing of implementation, the correct time must be adhered to in order to trigger certain behavioural changes (Fogg, 2009).

Spotswood (2016) additionally argues for use of the behavioural change model to determine the ability of companies to implement change. The transtheoretical model acts to further facilitate the understanding of the CSR dimensions in acting as a motivator for change. If the relevant motivations for companies to implement CSR can be realised then the model

holds the feasibility to be applied to a range of institutional settings, perhaps with the ability to target the more complex areas of the transformation process within supply chains (Spotswood, 2016). By acknowledging the nature of motivational intertwining, the conditions for the application of the behavioural change model within companies can be identified as collaboration, autonomy and individual thoughts (Hardcastle, Fortier, Blake and Hagger, 2016). These conditions are vital as collaboration between elements of the company must be ensured to account for a wide-spread and effective business model change. Autonomy is required as the company in question must alter predefined business models upon their own will without external intervention. Individual thoughts are also necessary to motion the movement away from the stereotypical track (Spotswood, 2016). Whilst this theory posits an understanding of the impact of external factors such as society it holds each behavioural change associated with a company to be developed using influences decided on and balanced by the company themselves.

The model shows if the motivator of the preparation phase of companies can be determined then the cause of action can be deduced. In turn understanding the preparation can increase and sustain change. By doing so business model changes can be greater understood and the motivations of companies and determine those most promising at causing a successful and sustained change. In doing so it must be deduced that a company has a desire to contemplate the change, in this case the consequences of soy cultivation must be admitted by the companies in question.

Whilst Ajzen's model of behavioural change is an older concept it is still recognised as a guide to understand change. Such is seen within the renewal of the concept by Ajzen in 2015, when proven to be a conclusive overview of aspects of behavioural change with a clear causal relationship between elements. This deduces that despite the initial theory being old, it is still being valid theoretically. Incorporating modern developments of Fogg (2009) and Spotswood (2016) also develops the behavioural change model further by including advancements in the understanding of successful change a within corporate structures.

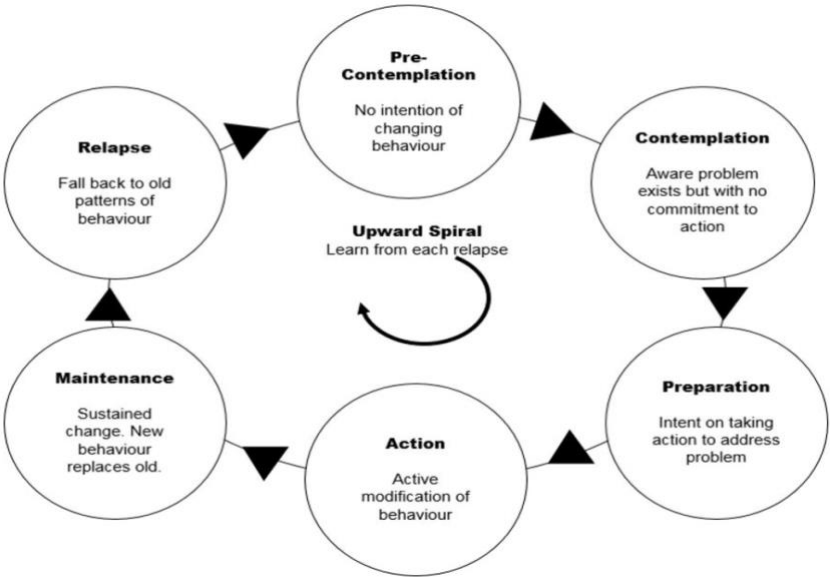

Figure 4- The original behavioural change model as proposed by Ajzen (1985) portraying the process of generating change within a business model.

3. Conceptual Framework

Based upon the theoretical framework the conceptual framework shown in *Figure 5* was created. Such a figure connects the theoretical concepts addressed above to present a singular conceptualised model encompassing the relevant aspects of aforementioned theories to address the required research questions. The choice to combines Ajzen's 1985 and recently modified 2015 model with elements of both Fogg and Spotswood. This combines Ajzen's steps of behavioural change with determinants of successful business model change. Taking into account the identified dimensions of CSR and being mindful of attempting to ascertain an element of environmental protection the conceptual model will be used to provide an overview reasons for behavioural change. In doing so the model will be able to examine CSR policy documentation, first determining what motivates companies to produce such policy before analysing CSR incorporation and determining its success. This is accomplished by using the conceptual framework as a guide, to analyse the stages of contemplation, preparation, action and maintenance. In the process of determining each stage motivations, differences in policies and success can be encapsulated into results.

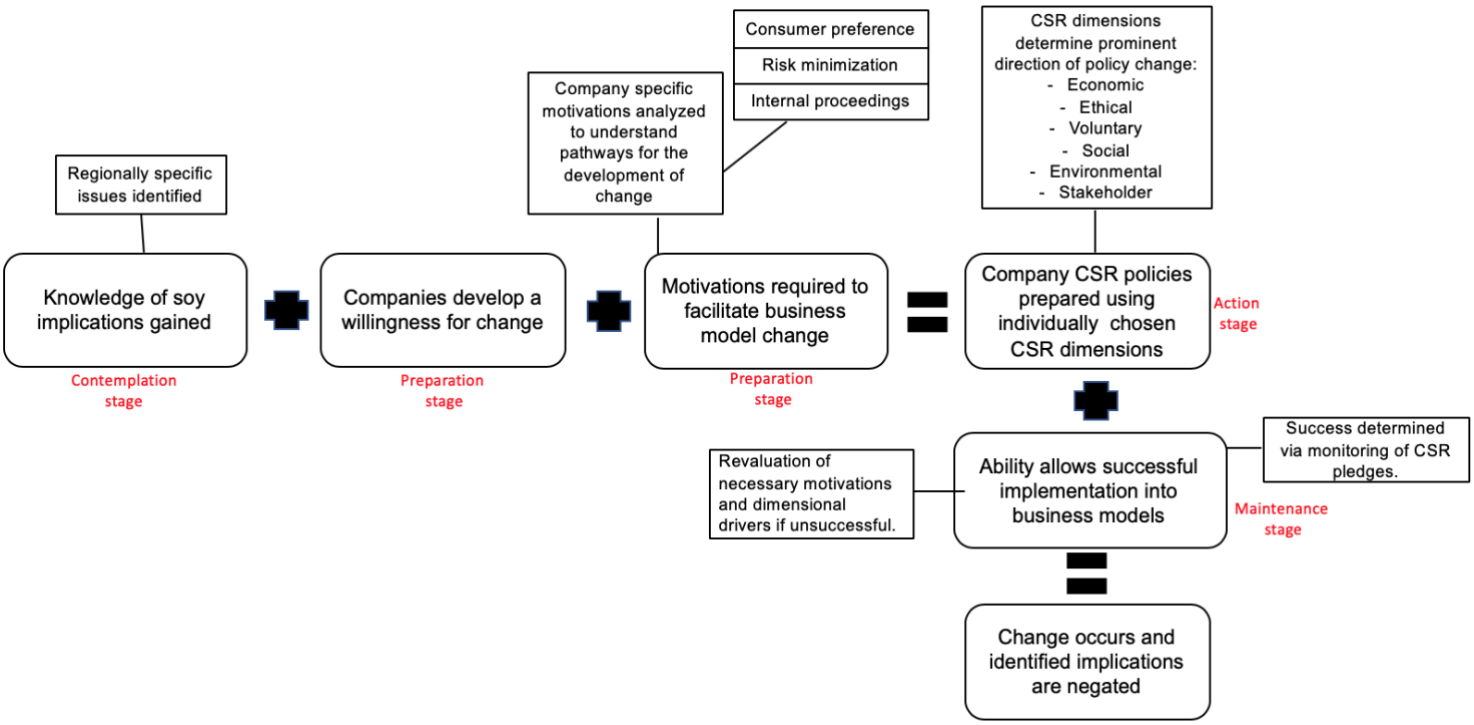

Figure 5 – The proposed conceptual framework used to guide analysis throughout this thesis

Methodology

This chapter presents and explains the research strategy chosen for this project. Methodologies chosen for this thesis were strategic to create an interrelated strategy to address the research question. The choice of research design can be seen to interact with the choice of research methods.

3.1. Research paradigm

Ontology concerns the decision of 'what actually exists in the world about which we can acquire knowledge' whilst epistemology revolves around 'how people create knowledge and what is possible to know' (Guba and Lincoln, 1994). These two concepts are intimately linked. The ontological position of this thesis is defined as that of a critical realist, this entails the belief that one reality exists but can never be understood perfectly because of "basically flawed human intellectual mechanism and the fundamentally intractable nature of phenomena" and means that to understand reality "claims against reality must be subject to the widest possible critical examination" (Guba and Lincoln, 1994 p.110). Critical realists align with the post-positivist paradigm by combining both positivist and interpretivist views.

This approach tries to explain behaviour of companies rather than understand the meaning of actions or changes. Whilst Guba and Lincoln (1994) explain that paradigms can only be grouped as positivist-post-positivist and constructivist-critical theory the idea of methodological bridgebuilding closes this division (Moses and Knutsen, 2012). Utilising the view of intersubjectivity this thesis aligns with the objective approach, yet it can be understood using the work of Moses and Knutsen (2012) that in order to contextualise statistical data of this study understanding can be deepened using a subjectivist approach of conducting interpretative interviews. This deduces work can begin from a critical realist view but is aware of the constructs and discourses that are important in society also. Therefore, the incorporation of bounded constructivism can assist with the depth of research.

By introducing elements of bounded constructivism, it can be assumed that one shared reality exists within a bounded group but across these groups different realities exist. This position will allow the determination of reasons compelling companies to implement CSR and allows for cultural differences between companies (Moon and Blackman, 2014). This determines that one reality exists according to a particular moral position such as anthropocentrism, but this can present a different reality when considered from an alternative moral position such as that of ecocentrism. This approach allows identification of the position of decision makers behind the choices to implement CSR into business models. The bounded constructivist approach in this instance allows for the interpretation that effective policy, consultation and participation are shaped by knowledge, values and beliefs to determine their courses of action (Moon and Blackman, 2014). This in turn follows the belief that policy makers or community groups would use data to target interventions which hold predictable outcomes on identified causal relationships. Despite this discussion of intersubjectivity the dominant ontology within this thesis remains as critical realism.

The epistemological approach assumed by this study is post-positivism. Post-positivism strives to explore phenomena via triangulation of qualitative and quantitative methods by acting as 'a certain pluralism' balancing both positivist and interpretivist approaches (Phillips and Burbules, 2000). Post-positivism emphasises the importance of multiple measures and observations as each may possess a different type of error and such mixed methods gives a clearer image of what's happening in reality (Popper, 1959). This also

assumes that all observations are theory laden and that everyone is inherently biased by their cultural experiences and world views. Post-positivism rejects the relativist idea of the incommensurability of different perspectives, instead determining we can learn from each other and are capable understanding alternate views (Phillips and Barbules, 2000). Instead falling in line with a constructivist view that we each construct the world based upon our perceptions of it, accounting for differences in policy implementation strategy. Because perception and observation are fallible, constructions must be imperfect.

By disassociating with the opinion of empiricism and allowing the existence of subjective perspective of facts, post-positivism revolts against the limitations of positivism and determines that the absolute truth cannot be found, only approximated (Guba and Lincoln, 1994). Post-positivism allows a flexible research perspective with mixed methods to carry out research according to the nature of the research question. This tends to reduce personal biases and prejudices of the researcher and participants as it offers the use of more than one research technique to ensure the subject is studied from various angles (Phillips and Burbules, 2000; Guba and Lincoln, 1994).

3.2. Research methods and data collection

The basis of this research will be case study analysis, focussing on the companies working within the commodity frontier of the Cerrado. The case study protocol of this selection arises from the identification of commodity frontiers in South America with different soy exportation volumes. Analysis of the TRASE website allowed accurate linear flows to be examined to provide reliable data of companies involved in sourcing and exportation. This was determined by examining the statistics associated with soy for individual companies spanning a 10-year period and downloading data files for the Cerrado biome. TRASE data regarding the Cerrado determined it was wise to select commodity frontiers with a wide array of corporations working within them and those with heterogeneous companies such as small versus large export volumes, this allowed diversification of corporation objectives for future analysis. This can ascertain what the effects variational differences between companies has on the implementation of CSR within corporations. Creating this variation within independent variables means the causal relationship can be more readily established yet the effects measured will be conditioned by context of the studied cases, this causes high internal validity and low external validity. By examining the Cerrado CSR expectations of a varying companies can be analysed (Brazil, Paraguay and Argentina), making findings more generalisable to the wider population of companies present within South America. A pragmatic approach was required in determining case study choice, whilst ideally case study selection should be guided by theoretical concepts in reality the logistics of gaining access to CSR pledges of certain organizations limits the availability of information for analysis.

3.3. Mixed Methods

To successfully analyse the motivators of organizations to implement CSR policies and their success triangulation is selected to increase reliability and validity. The mixed methods approach used within this research includes the use of content analysis, interview, statistical analysis and survey combining both quantitative and qualitative methodologies. To fully address the research question both explanatory and descriptive research is required. The question aims to determine the drivers pushing corporations to implement CSR strategies whilst using statistical analysis to determine if and to what extent current

pledges are being attained. This leads the paper to be described as a descripto-explanatory study (Saunders et al., 2009, p.140). In order to determine if pledges in CSR policy are being met statistical analysis is used to find results and determine trends, this data will be primarily obtained from the TRASE organisation of transparent supply chains to analyse exportation volumes and deforestation rates (TRASE, 2020). However, the failure of quantitative data is that it does not explain the reason as to why companies implement CSR, only if their commitments are successful. In order to determine the reasons behind company motives qualitative analysis must be ensued to provide explanatory and descriptive insights. Whilst the case studies selected provide the basis of the quantitative analysis they also steer the choice of qualitative methods (Bryman, 2012). The patterns found through quantitative data analysis are further extrapolated through the use of semi-structured interviews and survey data. It is important to incorporate the combination of data analysis with interviews to generalise findings. Due to the lack of research into this topic the ability to generalise is vital in providing recommendations and understanding for alternate South American countries and companies.

3.3.1. Case Study Analysis

Case study analysis will be conducted to investigate the specific business models of companies within the supply chain being examined. The motivation of case study analysis stems from the idea that focusing on a specific company's CSR policy designs can lead to a better focus of understanding of the subject in question by allowing direct comparisons (Yin, 2018). To determine research aims analysis will develop a greater understanding of trends and patterns in the uptake and success of CSR in South America. This will generate information regarding the commitments of companies to CSR responsibilities. For this reason, soy sourcing from the Cerrado will be assessed. The database of companies involved in soy production within the region will be examined to provide three suitable companies for further analysis. A range of companies with different exportation volumes can be chosen allowing for direct comparison between large- and small-scale organisations (*Table 2*). Such a determination of suitable companies will lead to interview proceedings providing a greater insight into the reasons for CSR implementation (Bryman, 2012).

Table 1 – The companies chosen for CSR policy analysis and their exportation information

Company name	Average Export volume (tonnes)	Main exportation region
Cargill	10,848,317 t	Predominantly China
ADM	9,328,013 t	Mostly China and some Europe
Glencore	2,495,074 t	China and Europe split

Each company will be examined to determine what CSR policies are currently incorporated into business models and track commitments over the past ten years of each company. In doing so a picture can be created as to how commitments relating to CSR are being met whilst also being able to identify motivations behind each company desire to internalise commitments. Information regarding the motivations of companies will be further developed through the use of semi-structured interviews to gain insider knowledge of company workings within the Cerrado. Such a method can be described as purposeful sampling as companies have been selected in order for research to be relevant in answering the research question (Bryman, 2012).

3.3.2. Expert Interviews

Expert interviews provide in-depth knowledge of workings on the ground in South America. Due to the logistical issue of the case location, reliance upon experts is being facilitated to assist with information gathering. A total of eleven experts were interviewed, comprising of NGOs, environmental experts, supply chain experts and corporate employees. By choosing to interview such a broad scope of individuals, opinions can be contrived into substantial research knowledge. The initial contacts will be attained via information provided by, the SEI, before implementing the snowball effect to diversify experts. Interviews will be conducted via skype due to the current restrictions associated with social distancing requirements, where appropriate these will be digitally recorded and transcribed. A semi-structured interview will be used including a broad list of topics and questions forming an interview guide to discuss in each one-hour interview. The interview guide forms a basis for the interview process, however, allows for follow-up questions if information is of particular interest and free speech of the interviewees (Bryman, 2016, p. 468). Full informed consent will be obtained in line with UK ethical guidelines for research. Due to pursuing inductive research the questions posed to interviewees will be formulated around the aims and objectives of the research rather than the theoretical framework (Van Thiel, 2014 p.94). When the selection of interviewees was conducted it became apparent dealing with current employees of the companies in question was not possible due to non-disclosure agreement clauses in contracts. In order to overcome this issue and still gain experience into the inner working of the companies in question (recent) past employees were chosen for interview and were able to comment directly on chosen businesses, most of such employees have now moved to research roles. Alongside this to further fulfil gaps in knowledge arising from lacking direct contact with current employees CSR officers and NGOs were interviewed alongside local experts to develop a full picture of how companies are implementing CSR into their business models and why.

Table 3 – A list of interviewees and the reason they are appropriate for aiding this thesis.

Interviewee	Position	Reason chosen for interview
C. Mueller	Researcher PhD candidate	Links consumption to international natural capital dependencies and impacts informing decision makers. Past environmental sustainability scientist for both Unilever and Cargill.
M. Tyldesley	Latin America researcher at Global canopy	Specialised in environment, society and development with focus given to the biomes spanning south American countries and their export commodities.
P. Prado	Postdoctoral research associate and lecturer	Innovation and sustainable supply chain researcher for Brazilian companies including policy advisor for ADM. Research investigates how structures, institutions and relationships can support or undermine global value chains for soy.
D. Meyer	TRASE Latin America engagement lead	Experienced on sustainability and agricultural work in Latin America, focus on land-use change and transparency. Previous project manager for the round table on responsible soy association and various NGOs in the region.
F. Van Gils	International commodity trader (soy and	Works within south American corporations to determine more sustainable methods of soy and beef exportation. Both governmental and corporate roles are assumed. Holds a place within company business models and

	beef) & external policy adviser	advises on CSR policy implementation for copious leading soy commodity exporters.
S. Rogerson	Lead for global canopy	Extensive research in global environment reporting systems within Latin America. Prior experience working within corporate soy companies, tracking and publicising commitment achievements for forest 500.
M. Bastoslima	Postdoctoral researcher	Works on the policy and governance dimensions of sustainable production, particularly in relation to agriculture (soy and beef) and tropical forest conservation.
T. Gardner	Research fellow at SEI	Researches ways to improve the sustainable management of multiple-use tropical forest landscapes.
V. Ribeiro	Data Scientist	Specialist in data science. Previously worked for the Amazon environmental research institute on compliance of corporate policies. Past data analysis for soy commodity exporters, non-disclosure agreements limit name sharing.
C. West	SEI deputy director for research	Leads the sustainable consumption and production group for SEI. Led and contributed to projects developing an understanding of the links between international supply chains and environmental impacts including SEI's hybrid multi-regional input output model and material flow platforms. Actively engages with policy, business and third-sector practitioners.
Employee one	Cargill Employee	Employee of the sustainability and development team for Cargill, due to non-disclosure agreements the name of the participant cannot be included within this thesis.

Topics covered within the interviews included but not exclusively: individual views on the greatest threat posed to the Cerrado; the opinions of CSR commitments of companies; suggestions for improvement and the influencing factors upon implementation of CSR in their given specialist fields. Once completed the transcripts were sent back to interviewees via the ethics committee to determine their approval for citation further along in the thesis. Such respondent validation increases credibility and trustworthiness by increasing the validity of the data gathered (Bryman, 2016, p.385).

3.3.3. Survey

A survey on consumer perception relating to proper implementation of CSR was undertaken as part of this thesis. The purpose of the survey was to determine the role of the consumer in altering CSR implementation of production companies. By assessing the significance of consumers at the final stage of the supply chain procedures of production can be altered to improve consumer willingness to choose specific products. The survey was undertaken in English, being the first language of both the SEI and the researcher. The survey consists of closed ended questions to with no alternate answers other than those offered, this increases standardisation and the options for statistical analysis (Van Thiel, 2014. p.75). The use of Likert scales will be facilitated to determine opinion of proposed situations but will ensure the use of a neutral category.

When choosing correspondents for the survey a wide spread of respondents spanning different socio-economic backgrounds is preferred to increase generalisability of findings. In order to ascertain this the survey was distributed across two universities and those institutions associated with them, the University of York and the University of São

Paulo. Whilst there were intentions to distribute this survey further the current standing of the COVID-19 pandemic meant distribution was limited to within these two institutions.

By distributing a self-administered survey anonymity could be assured, in turn increasing the responses gained from the web-survey. By removing the social desirability bias associated with interview procedures a more realistic insight can be gained (Bryman, 2016, p. 221-226). An apparent disadvantage however is that there is an inability to aid with clarification should a respondent not fully understand the questions posed to them. To overcome this, questions must be simple and easy to follow, this was assured by passing the survey through the UK ethical committee and running a pilot study to iron out any understanding issues prior to survey distribution (Bryman, 2016, p.223).

3.4. Data Analysis

Data analysis compiles the steps of inspecting, transforming, analysing and modelling data to discover useful information to support and inform research aims. This section comprises statistical analysis gained from both case study analysis and survey data whilst also coding interviews to determine trends.

3.4.1. Statistical Analysis

Data analysis is conducted to determine the success of CSR implementation by companies. This holds particular focus on identifying the success of the pillar of environmental concerns associated with CSR. Using secondary data from the TRASE organisation means the deforestation rate and risk of individual companies can be calculated over a ten-year time frame (TRASE, 2020). This data can be compared to pledges made by each company to establish if they are progressing towards lessening environmental implications. Further statistical analysis in SPSS will determine possible significant differences between companies in achieving CSR objectives. Testing includes that of a Wilcoxon signed rank test – used as a non-parametric statistical test to compare two related samples, in this case samples adhere to be that of deforestation rates associated with each company on a yearly basis. Following this a t-test can be performed to test for statistical significance between the means of sets of data, this can determine the success of CSR implementation. Both tests will be conducted to a level of significance in which $p > 0.05$ to be deemed statistically significant. The use of this secondary information is vital to the finding of the study as TRASE compiles information that is otherwise not available. This limits the primary data production to that of interviews and survey results.

3.4.2. Coding

Data analysis of the qualitative interviews undertaken as part of this thesis was performed using coding to assist with theme identification. The software Atlas.ti. was used to perform an initial coding analysis. Coding is described by Van Thiel (2014) as "*a shorthand way of indicating what a certain qualitative data unit actually means*" allowing the provision of a brief summary of the main attributes and features of the interview process. Due to the inductive nature of this study the codes are gradually developed and refined during the process of analysis. To begin, interviews are transcribed, with particular attention being paid to synonymous materials and also variations and contrasts in answers (Van Thiel, 2014). The initial coding process begins by adding simple descriptive terms to the transcripts in order to develop an initial index of important factors. These codes are then grouped into categories by assessing the apparent relationships between them, referred to as focused coding by

Bryman (2016, p.574). The final stage refers to the need to use theoretical coding, this identifies themes using the categories to finalise the iterative process of coding (Bryman, 2016,. P.575). A brief selection of some codes used within this thesis are shown in *Table 4*. Once coding was complete comparisons can be drawn between opinions held by different interviewees and analysis between the insight given scan be used to assist in answering the posed research question.

Table 4 – Brief examples of the coding used when transcribing interviews to determine trends.

Theme	Code	Explanation
Implications of soy production	Negative Implications	Consequences impacting companies must be identified and determined as being significant enough to insight a desire to change
	Deforestation	The implication of deforestation refers to the action of clearing wide areas of flora
	Indirect impacts	Impacts are often not assumed to be as a result of soy production as they are not presenting a direct link between cause and effect
Motivations for companies to implement CSR policy	Willingness	For an issue to be addressed there must be a desire of companies or individuals to want to change
	Reputation	For a motivation to be initiated companies must face an image threat, this would impact their stakeholder engagement so requires adaptation
	Government driven	Strategies imposed at government level to create a greater precedent for change to be made at a significant level
Reasons against CSR policy implementation	Costs	It is believed the costs of altering business models with CSR policy implementation is greater than the economic benefits
	Lack of understanding	Different levels of education within companies mean financial benefits of imposing CSR are not understood fully, reducing uptake of CSR policy
	Recognition	Journalists and NGOS can be seen to readily report negative press, positive development by companies does not yield the same recognition

3.5. Validity and reliability

Reliability refers to the accuracy and consistency of measurements. If the measurement instrument is reliable then under similar condition it is expected to yield the same results every time (Van Thiel, 2014 p.185). Validity on the other hand refers to the question of whether research findings accurately reflect the current status of the world, if the study was replicated by an alternate coordinator the findings should draw the same conclusions (Yin, 2011). The use of triangulation within this study helps to secure validity and reliability as multiple methodology choices creates additional checks upon data collection and research results (Van Thiel, 2014 p.52). High internal validity will arise due to having one researcher and carefully selected methodological choices. With the use of mixed methods each research approach poses its own limitations and benefits with regard to validity and reliability, for example the use of a semi-structured interview allows control over the direction of responses and keeps the topic on point, this means the more structures the more reliable and valid findings will be. However, it is important to conduct a pilot interview when using semi-structured interviews to ensure questions chosen avoid interviewer bias, in which

respondents answer how they believe they are wanted to rather than with their own views. Statistical data analysis also varies in validity and reliability, to ensure the highest standards of research data should be interpreted before statistical testing is applied, in this instance outliers should be removed (Bryman, 2012). However, statistical analysis is only a tool to help to arrive at a theoretical explanation. No statistical analysis is ever complete due to a guaranteed amount of unexplained variance, this will reduce the validity of results could be misinterpreted. Reliability can be reached by keeping all research as transparent as possible (Bryman, 2012).

4. Results and findings

This chapter describes the findings and the results of research. The conceptual model is used to guide research into the process and success of CSR policy implementation. Comprising of first identifying the greatest threat to the Cerrado through document analysis and interviews. Then progressing to analyse company willingness and motivators before finally using statistical analysis to determine whether implementation is proving successful at combatting identified threats.

4.1. Threats to the Cerrado

As the first stage of the conceptual framework establishes, in order for a meaningful change to become successfully established within business models, knowledge of the posed implications must be determined. This is deemed to be the contemplation phase that provides the knowledge to tailor policy design for change. By determining the greatest threat to the Cerrado region, the need for companies to implement CSR policies can be determined.

Copious research into literature demonstrates the threats posed to South America as a whole by the scale of agricultural expansion occurring. However, literature fails to successfully establish the largest threat, instead taking a broad approach of simply categorising into environmental and social implications. After determining the broad implications posed to the Cerrado region from soy cultivation, interviews with ecologists and South American research specialists were used to isolate the most pressing threats.

From analysis, the threat of land use change caused by deforestation is the most prevailing and significant implication identified. The threat is initially triggered by the need for soy to be planted on prepared land. Prado (2020) explained for successful soy cultivation there is a need for "*totally clear land, this is difficult to achieve and takes time. It is better for them to clear the land first for cattle by forest removal and rely on the cattle to destroy any remaining vegetation. Once clear, cattle are moved to a newly deforested area and soy cultivation begins".* Analysis of such a process determines that soy cultivation is not a direct driver of deforestation instead the removal of flora is caused by cattle farming (Mueller, 2020). Once displaced the cattle must be moved elsewhere to maintain the demand for beef. South American commodity export specialist (Bastoslima, 2020) explains how "*indirectly converting the land means people can argue that soy is not driving this change [deforestation], therefore is not a direct driver or even a driver at all*". Thus, soy production companies are able to hide behind the guise of not causing direct deforestation as the land had already been cleared for grazing.

The ability to hide using indirect implications means that companies can declare zero deforestation commitments for soy whilst simply converting land for cattle grazing. The impact upon civil society of assuming that these 'zero deforestation' commitments are taken at face value means the far-reaching implications of indirect deforestation are significant and under-recognised (Boucher and Chi, 2018).

In more recent times a lesser known threat is emerging associated with water cycle disruption, this is fast becoming a threat to local's survival and their livelihoods. This predominantly stems from an increase in irrigation from both ground water and rivers. Irrigation is not regulated by government, nor is it monitored how much water passes irrigation systems proving consequential to the functionality of natural water cycles (Bastoslima, 2020). This pertains that determining the greatest threat offers some form of subjectivity, particularly of the regional degree. Whilst deforestation is identified as a global

issue something as vital as water cycle disruption houses the potential to disrupt both social, economic and market spheres entirely.

The demand for soy also often facilitates the removal of indigenous and local villages. Paradies (2018) recognises that there is greater emotional damage caused by the removal of the ecosystem services associated with original communities within South America. However, the global financial benefits of soy exploitation have determined that the removal of such civilisations is economically vital. Such is particularly true in Brazil, with the current president Bolsonaro releasing statements disclosing the need for 'agricultural expansion' (Prado, 2020). As Prado (2020) states "*the environment is the first to suffer and social issues then tend to follow*", this shows once again the importance of the environmental implications being addressed to limit the expanse of threats posed to social factors.

Because of this it can be determined that the most imminent, acknowledged and large-scale threat to the Cerrado stems from loss of flora. Therefore, CSR implementation into business models will focus predominantly on efforts to curb deforestation and protect flora. Policies regarding such will be analysed for motivation and success rates.

4.2. Contemplating Change

Once knowledge of a threat has been gained and the contemplation stage of the conceptual framework completed, preparation can occur. This stage is categorised within the conceptual framework as encompassing the need to develop a willingness to change and the motivations for initiating change. Both of these elements are interlinked with regard to the fact that the internal working of an individual company is used to incite a change.

4.2.1. Willingness to Change

Willingness to alter business models can be seen to predominantly stem from external drivers including but not exclusive to economic factors, societal reasons and competitor's actions (Mueller, 2020). Whether change is innovative or reactive, it is inevitable in companies that aim to last in expanding markets. Such a willingness to change business models can be assumed to encompass all companies, as willingness is here being determined as an overarching concept, not as individual company specifications.

4.2.2. Economic factors

Economic factors are often the largest determinant in a company's willingness to change, this is apparent within the soy industry. Companies that facilitate an early change have a greater chance at developing new revenue streams. And are becoming increasingly aware that they will only have a business in a couple of decades if environmental concerns and rehabilitation are adhered to (Mueller, 2020). This can therefore be deemed as a reactive response to the implications of deforestation previously described. Once land is cleared and drought arises, yields of soy will be substantially diminished. Holding an understanding of the environmental consequences means these issues could become a legality in the relative short-term. Therefore, a willingness to consider determining strategies for change can help with future required business model transitions and limit the economic implications posed by a shock effect if companies are required to change practices quickly (Rogerson, 2020).

4.2.3. Societal pressure

Along with economic will, societal reasons for change be acted upon by organisations. Many companies have been seen to become more green-friendly in response to growing

public consensus of pressure to preserve environmental resources. The developments in consumer preference can be used to compel change. If the general population demand a more sustainable practice then it is within the company's best interest to present a willingness to comply (Rizzo and Baroni, 2018). Willingness to do so can be shown within the alteration of policy towards a more environmentally focussed business model. Knowledge of this can be presented to society through means of media and lead to preferential selection of that specific company's products.

4.2.4. Competitive advantage

Willingness to change can also stem from understanding that there is a chance tackling environmental issues could become a legality in the short-term future. Therefore, determining strategies now can assist with the transition into a more sustainable business model via the use of CSR. This would limit the economic implications associated with a shock effect imposed by companies being told to change practices quickly (Rodgerson, 2020). Whilst negating economic factor this also presents the use of innovative leadership. This is furthered by CSR policy advisor van Gils (2020) who says, "*change is inherent within company business models and can be seen to facilitate extensive growth via the means of holding a competitive advantage*". Genuine leadership can be shown by some companies who have gone beyond reputational risk and into operational risk with implementing new policies, providing a competitive advantage. By understanding that the risks of deforestation could impact the productivity of soy companies can realise an existential threat to their business (Gardner, 2020). Optimising a window of opportunity means companies can promote themselves as a leader in the field, thus this generates a self-desired willingness to change.

4.3. Motivation of change

The conceptual framework shows once a willingness for change has been internalised a motivation must occur to determine company specific pathways facilitating change. Whilst this remains as part of the preparation in the conceptual framework motivations differ from willingness as companies are each driven by individual entities due to each company presenting individual needs and desires. Motivations refer to the individual underlying determinants of different companies deciding to impose a change to their business models. In this case the reasons behind implementing CSR policy with particular focus to the environmental implications of soy production. Little is known regarding producers' decisions to implement 'green' supply chain management, in this instance CSR policies, through either coercive or cooperative approaches. It is important to understand the motivations as SDG success requires full engagement of supply chains to tackle global issues such as deforestation (Hoejmose, Grosvold and Millington, 2014). Due to this all companies are increasingly expected to improve and ensure their practices are environmentally sound and become more stringent in the future.

As each company makes their own voluntary CSR pledges motivations can vary hugely and are individually decided upon. To successfully determine the motivations for change, and any differences amongst said changes, companies are examined as individual entities. By understanding the current proceedings and company standards the information can be compiled to analyse trends in data and determine if pledges made by the companies are being attained or not. Three companies are used for analysis within this section, each portraying different characteristics, altering the decisions made within the preparation stage of the conceptual framework. The companies being analysed are Cargill, ADM and Glencore.

4.3.1. Cargill

Cargill is the largest privately-owned corporation in the United States of America in terms of revenue, working with agricultural services, health, pharmaceuticals and industrial and financial risk management. In 2003 Cargill opened a station for processing soy in Brazil which dramatically increased soy production within the area. Following this, production increased steadily, until being affected by the Amazonian soy moratorium. Instead of closing production within South America productions were moved to focus on soy being exported from other regions such as the Cerrado, with this transportation increased concurrently to move stocks around the country (Cargill, 2020). Being one of the largest agricultural commodity traders, Cargill was seen to commit themselves to monitor supply chains of the Cerrado via the release of statements declaring their recognition of environmental impacts. Cargill is the leading global household name regarding the exportation of agricultural services with a large social media following of over 60 thousand on twitter alone (Shahbandeh, 2020).

4.3.2. ADM

Similar to Cargill ADM is a global food processing and commodities trading corporation based in the USA. ADM is described at trying to mitigate South American soy supply chain risks through transparency and traceability, supplier engagement and risk identification. However, ADM is a public corporation rather than private, meaning shares are available to the public and traded on the open market through stock exchange; rather than being held internally by a minority (ADM, 2020). ADM is one of the top competitors for Cargill with regard to soy exportation, therefore analysis of a similar volume exporting company can identify differences in policy documentation and the success of different strategies. ADM is less well known by consumers and focussed less on social media presence with just 10% of the following held by competitor Cargill (Shahbandeh, 2020).

4.3.3. Glencore

Glencore is a British multinational diversified natural resources company engaged in production, refinement and transportation of agricultural products, amongst others. Founded in 1974 the company is 70 years younger than ADM and 110 younger than Cargill, thus determining the vast expansion seen by the company in recent times. Similar to ADM, Glencore is a publicly owned company, yet has a significantly lower valuation and trading capacity regarding soy production (Glencore, 2020). Whilst with other commodities Glencore far exceeds the revenue posed by Cargill and ADM but shows only recent expansion into the field of South American soy. The company has a large social media following of 145 thousand people the predominant focus of such social media accounts relates to marketing of consumer ready products, not soy (Garside, 2020).

These three companies being analysed present different scenarios for comparison relating to CSR policy implementation to prevent environmental degradation arising from soy production. By determining differences between said companies the following stage of analysis can lead to an understanding of the altering motivations for change. Such has then been interpreted as to determine whether motivations are proving enough incentive to successfully tackle the identified implications of soy cultivation and identify failures in doing so. *Figure 6* demonstrates the categorisation of companies for analysis.

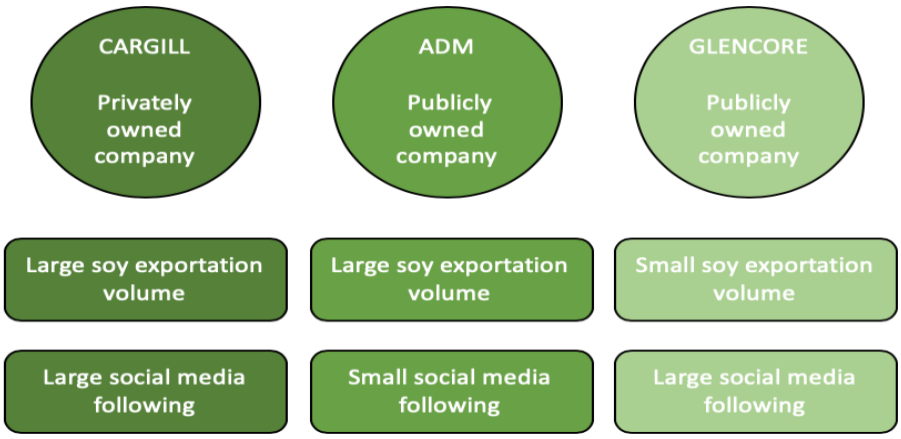

Figure 6 – Brief summary of information relating to the three companies being analysed.

4.4. Identified Motivations

The most expected motivation of change within private sector organisations is that of market trading establishment and capability. Having a competitive market for a commodity enables the exchange of good and services to be kept active and changing. Such facilitates the regular alteration of business models to allow for business development in an ever-changing market environment. With knowledge and willingness regarding the implications of soy business models can be adapted with new policy measures, guided by company specific motivations. Due to CSR being a voluntary policy companies are free to deal with motivations how they see fit.

4.4.1. Upstream motivation

Upstream motivation refers to head-office firms dealing with the coordination of primarily exploitative company branches through the use of top-down instruction; such is shows as an internal proceeding as part of the preparation stage of the conceptual framework. Many strategies within business change models revolve around meeting SDGs, however, not all goals are applicable to every region of the globe so become specialised. SDGs also require global coordination of company workings to determine which pledges must be undertaken at which stage of the supply chain. In south America particular focus can be provided to the direct targets of life on land and climate action by preventing the largest identified threat of deforestation (UN, 2020). For particular commodities business models must be adapted and uniquely determined, head-offices decide this unique adaptation. Whilst this difference in companies was demonstrated by examining characteristics between them, comprising of exportation location and identifying size differences. Each head office branch of the corporation must idealise the motivations for each company to avoid a discombobulation of policy design. As head offices are rarely based in South America, exporting facilities must also adhere to the requirements of the country in which the head office is based (Bastoslima, 2020). For the companies in question here that involves both Cargill and ADM being based in the US and Glencore in Switzerland. Often these requirements differ significantly, exceeding in particular the level of protection to environmental degradation required by Brazilian laws. In turn by going above and beyond the legal requirements associated with Brazil, CSR policy can be used to adhere to the more stringent regulations in line with registered countries. This not only meets the requirements of the head-office nation but also demonstrates company morals via the incorporation of voluntary work above the legal requirements.

The head offices are capable of imposing practical CSR strategies such as designating soy cultivation to brownfield sites rather than pristine forests. This can reduce the cost associated with increased cultivation as previously used land can generate greater profitability due to its cheap purchase nature (Feng, Chao and Chen, 2019). This also further aids with attaining SDGs as planting on previously cleared land aids with sequestration to reduce GHG emissions. However, this offers limited opportunity to meet the demand increase required of soy, therefore few companies consider this as a viable option.

This role of head office nations has recently been furthered with legal requirements arising for Cargill and ADM. On May 21st 2020 the US senate passed the 'Holding Foreign Companies Accountable Act'. When becoming law this act would require companies listed as US to comply with US regulatory and audit standards, notwithstanding this may result in a breach of both US law and that of the jurisdiction in question (Law Trove, 2020). This law would apply to all stages of the supply chain, furthering transparency and promoting environmental focus. The bill applies to all jurisdictions with predominant focus being given to companies with large Chinese exportation, this is vital for South American soy as the largest importer globally is China. Therefore, the implementation of such a bill motivates head-offices to alter business models in every jurisdiction to be in line with environmentally focused requirements. The reputation of the company is also protected here as illegalities do not arise so negative publishing regarding environmental failures can be negated. When questioned regarding the posed implication of this change being made a legal requirement a Cargill representative (Employee one, 2020) claimed they are prepared, stating "*our business models already follow the requirements of US legislation due to US sustainability teams regularly reviewing changes, so if this act becomes law we have no need to change our policies in any country*". This shows even without the legality being official, upstream pressures have allowed branches to adhere to motivations and be ahead of any legal changes required to business models. However, the development of this act does not hold the same level of motivation for non-US companies as the law does not hold president over European based firms. This means Glencore would not be influenced by the development of such an act. Although some upstream influence still arises with the need for head-offices to meets SDGs.

4.4.2. Downstream motivations

Downstream motivations refer to the ability of people with the closest links to everyday users holding the power to affect processes upstream within the supply chain. Such pressure regarding soy can be seen to stem from both downstream companies and directly from consumers, as identified within the conceptual framework within the preparation stage.

Consumer decisions can be seen as a significant motivator over the inclusion of CSR policies aimed at combatting environmental concerns. Historical behaviour has demonstrated the extreme power held by consumers through multiple successful boycotting campaigns since 2000 against companies such as The Body Shop and Burberry. These campaigns rallied against the use of animal cruelty testing, palm oil and the use of fur (Graves, Getty and Boyce, 2019). Soy is a more complicated as explained by van Gils (2020) as "*the product is not visible to consumers. This means efforts to boycott the production and exploitation of the commodity are more complex as it remains harder for consumers to internalise both the products they use that are impacted and the reality of the situational extremity*". Soy producing companies have previously been capable of neglecting negative implications associated with soy production, due to lacking consumer pressure meaning no change in upstream production mechanisms. There has however, been a recent change regarding this situation, with

Greenpeace and major UK food companies now inviting support from consumers to boycott soy products to protect South American biomes (Greenpeace, 2020).

4.4.2.1. Supplier driven motivation

A significant motivator of change arises from downstream companies, such as supermarket chains and consumer facing brands, these companies respond to consumer preferences (Richardson, 2020). Companies have been seen across the globe to be demonstrating changes in business models in response to increasing awareness of environmental concerns. Such is seeing the world's leading suppliers racing to adapt to sustainably minded consumers. Environmental non-profit CPD is one organisation tracking the movement in this trend, it runs global disclosure systems for investors, companies and regions to manage environmental impacts. CDP head of research investor Carol Ferguson (2020) explained "*as consumer facing brands, at risk from both deforestation and climate change, these companies [Cargill, ADM and Glencore] have a unique opportunity to show what consumers want and drive forward the sustainable economic transition. We expect to see more consumers start to query what really goes into the products they're using*". This pressure shows how consumers can rally suppliers to act on their behalf to motivate companies into altering business models.

Greater understanding of consumer preferences can be gained via the analysis of survey results regarding knowledge of the commodity soy. Consumer pressure is influential when large enough to influence the purchasing powers of markets. Understanding the role of consumers as part of the preparation stage of behavioural change facilitates progression to the action stage in which policies will be tailored to account for such consumer demands. If enough opinion can be collated then consumers have the knowledge and demand capacity to persuade suppliers not to source products that use environmentally harmful soy. This itself is the motivator encouraging producers to alter business models, if they do not adapt to the wishes of the greater population then market shares will plummet. By understanding the current and predicted trends of consumers business models can be adapted to increase the prevalence of CSR policy towards sustainable soy use. This can boost economic yields for producers such as Cargill, as by being ahead of the game with CSR policy they receive a competitive advantage over companies yet to adapt to consumer preference.

Consumer survey results pertain to highlight the information regarding the opinions of soy within products and the feelings of consumers from both Brazilian and UK populations. Understanding such will be beneficial for analysing consumer trends and the scale of pressure that consumers can apply to supplier companies. The consumer perception survey distributed throughout a UK and Brazilian university yielded 362 survey responses. Of the 362 responses, analysis shows 93% were not aware of the inclusion of soy in everyday products including animal feed, biodiesel and even paints and cleaners. Such was an important benchmark determinant to show the lack of awareness of the extent surrounding issues of soy production. This was also highlighted within pilot studies, meaning subsequent questions were targeted at gauging a range of responses regarding consumer willingness towards sustainability of products in general, not exclusively to soy. In a survey of 362 respondents the question was posed as to whether preference was given for sustainable products with a specific affiliation for environmental protection over non-sustainable products. Results showed that a vast majority at 87% would prefer to purchase more sustainable options *(Figure 7)*. This is an important determinant of consumer motivation as such a large proportion of survey respondents hold substantial purchasing power. Understanding desires

of consumers acts as a key motivator for producers to implement CSR policy to accurately represent consumer preference.

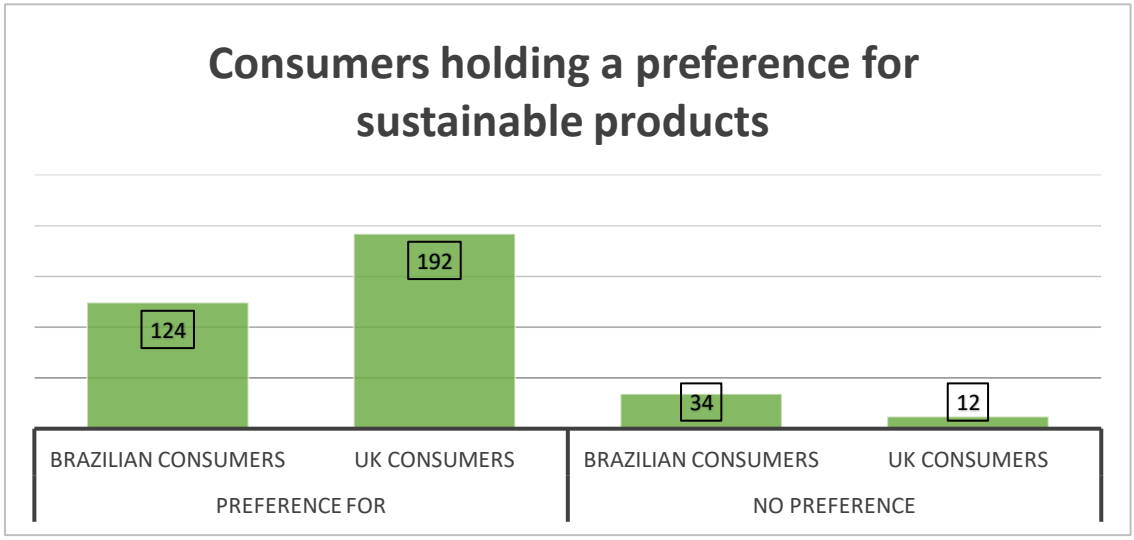

Figure 7 – A graph portraying the preference of UK and Brazilian consumers for the purchase of sustainable goods against non-sustainable goods.

However, to further understand the commitments of surveyed consumers the willingness to pay a premium for the consumption of such products was also analysed. This allowed the determination of action in consumer purchasing power, consumers must actually act upon the purchase of sustainable soy, not just desire better protocols. Supplier companies should address this thought, in order to voice consumer preferences and demand change from producers there must be an economic benefit to the supplier. Such was assessed by determining the average price mark-up of sustainable products against non-sustainable, determined as 20%. The same participants who declared a preference for sustainable products further addressed the question of willingness to pay this 20% price premium. Respondents whom has no preference for sustainability were excluded from analysis on the conclusion they are not interested in its purchase.

The results of this show that despite an overwhelming willingness of consumers to desire a more sustainable version of soy at 87%, there is a significantly lower number of consumers agreeing they would pay a higher premium to ensure the commodity is sustainably sourced at 48%. Particular reduction in willingness is seen within Brazil with lesser found for UK consumers. This stems from Brazilian finances facing moral judgements, "*the reality is that the ability to adequately purchase the food is more important than it being sustainably sourced"* (Prado, 2020). In progressive economies such as the UK there is a greater disposable income of consumers to increase spending. Such determines there is a greater ability to lobby against upstream companies within the soy supply chain. Statistical analysis (a two-sample t-test) performed upon this data shows that the variation in willingness of consumers to pay a 20% price premium is statistically significant at p=0.045 (*Figure 8)*. This shows a statistically significant difference between means for of consumers willing to pay a premium of 20% to purchase sustainably produced soy products, against those who would not. This is an important distinction for companies as it can be suggested that those with a greater export market to the UK will hold the facility to charge the necessary higher premiums to cover increased outgoings from sustainability soy. A Cargill employee (Employee one, 2020) states

the company *"needs to know clearly what consumers want, it's no good changing policy if only a few people care"*. Such is the same for competitors within the industry, Glencore also released a public statement stating internal proceedings will not be altered without proof of consumer demand (Readfern, 2020).

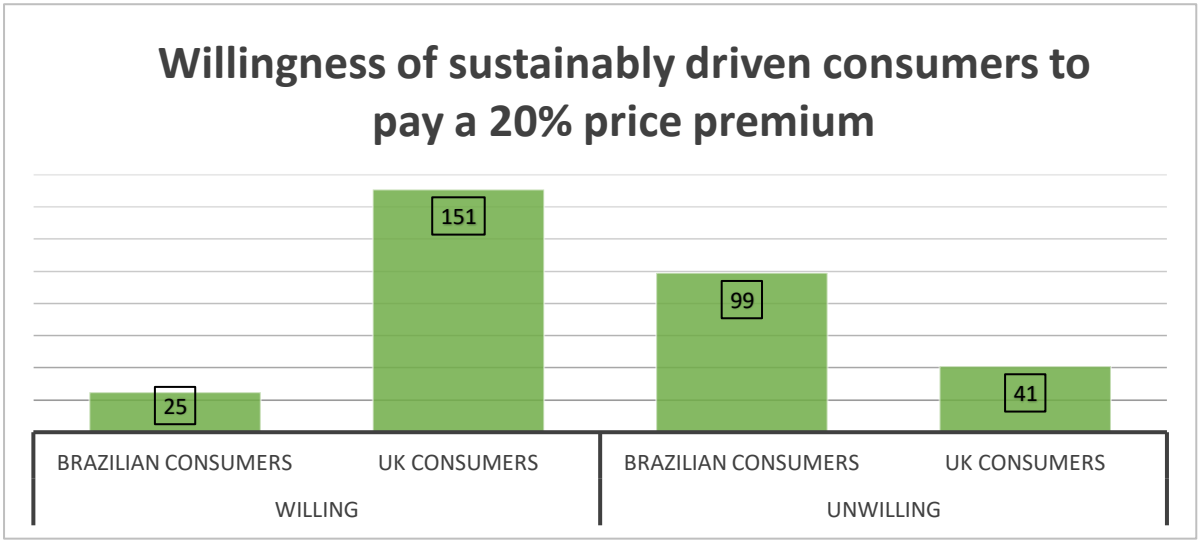

Figure 8 – A graph to show the willingness of UK and Brazilian consumers to pay a price premium for the purchase of sustainable products.

For the largest exporting companies, the majority of their exports are shipped directly to China, therefore this would require pressure coming from Chinese consumers. With the significantly increasing demand for meat, this pressure from the largest share of the clientele is not apparent. Therefore, supplier companies within China will not be willing to press for CSR implementation regarding greater sustainability as it could pose a risk to profit margins, and it is not being asked for by the people. Companies must decide if they meet the demands of the relative few but gain a moral advantage in market standings (van Gils, 2020).

4.4.2.2. Direct motivation from consumers

Acting as an alternative to suppliers rallying for more sustainable produce the demands of change are also able to stem directly from the consumer themselves. Recent developments in consumer preferences show psychological changes away from brand loyalty being a driver of purchasing decisions (Chen, Gao and McFadden, 2020). Instead a shift has occurred towards the specific performance and features of individual products (Viciunaite and Alfnes, 2020). This motivation is occurring on a global level; Brazilian peoples recently formed a coalition between indigenous groups to boycott companies exploiting Brazilian lands. This pressure to companies poses a threat to their image with NGOs and journalist reporting the issue on mass. The boycott has been effective by disclosing a list of foreign companies in trade with Brazilian agribusiness agents accused of breaching sustainability remits (Richardson, 2020). Substantial reports regarding the illegal deforestation occurring within the Cerrado region were commissioned by multiple NGOs. Reporting by NGOs and journalists based on indigenous rallying is a key demonstration of the influence consumers pose to companies. By publishing the research regarding the implications of soy, consumers can gain more knowledge of the consequences. This is important to raise significant awareness of issues; soy is predominantly a hidden commodity to consumers with most not understanding their current usage. By publicising the reality of this commodity and

highlighting the products of which soy is involved consumers can form a more accurate opinion of the posed implications and how embedded the commodity is within copious produce and household products (West, 2020).

Cargill is seen to recognise the importance of direct pressure being applied from consumers, meaning they have adapted policy without the pressure arising from companies downstream of the supply chain. Cargill (Employee one, 2020) states "*Consumers are no longer simply passive observers – they are playing a crucial role in how companies address sustainability within produce procurement".* Such means that Cargill is willing to implement business model changes publicly to show the commitment of the company towards maintaining good consumer relations. Glencore however does not bend their policy based on consumer opinion, instead the company faces minimal direct lobbying from consumers, generating the opinion that there is no need to alter business policy, nor to draw attention to the inclusion of unsustainable products if these are not already highlighted. This shows that lesser known companies such as Glencore in this instance suffer less downstream pressure, their lack of household name determines that consumers and NGOs pledge to focus on the most visible contributors to the sustainability crisis. The prominent opinion of Glencore is that if public pressure is not being directly applied to their business models, change will not be recognised with the correct level of appreciation, and therefore will not be introduced. This is an important determination of differences in policy adaptation as it demonstrates the importance of being a recognised establishment, the motivation of consumer pressure is only apparent to Glencore if the wider population demand change; meaning this will not be recognised in the action phase of the conceptual framework.

4.4.3. Reputational risk motivation

Despite the aforementioned motivations the most prominent factor encouraging CSR implementation into business model design is that of reputational risk minimisation. This was established through interviews with producer employees, CSR experts and supply chain analysts. This risk refers to the potential loss of financial capital or market shares resulting from damage to a firm's reputation and can stem from a lack of sustainability within companies (Hedgecoe, 2015). Being perceived as providing more environmental value allows companies to charge a higher premium, motivating sustainability pledges (West, 2020). The market assumes companies with a good reputation are capable of delivering higher price-earnings and market values with lower costs of capital. Reputation is moreover important, as in current economic situations, 70% to 80% of market value comes from hard to assess intangible assets such as brand equity and goodwill; this means organisations are vulnerable to factors that damage their reputation (Wright, 2015).

Understanding reputational risk also directly translates into sales figures as a good reputational outlook means companies are capable of guarding themselves from negative comments from NGOs and journalists. Alternatively, news can be translated into positive stories with reporting of companies failing to change business models being used as a competitive advantage. Such positive CSR action draws in new investment, appease stakeholders and entices young workforces with a sustainable mindset (Mueller, 2020). To generate positive reporting companies can implement practical steps to prevent deforestation as part of their CSR policies such as becoming members of objective mitigating strategies such as REDD+ (Nantongo, 2017). This allows active monitorisation of forest carbon stocks and enhances the removal of GHGs providing reputational advantage to members of such schemes in the form of positive association and branding opportunities.

Financial analyst Rogerson (2020) divulged that "*investors have called on the world's biggest soy companies to make firm commitments to end deforestation in wildlife-rich areas such as the Cerrado*". Those companies which contribute to deforestation and the associated rise in GHG emissions from soy involvement are taking risks with their reputation (Tyldesley, 2020). Richardson (2020) furthers this analysis by explaining "*Those that fail to do so [respond to reputational risk] risk being exposed by environmental activists to consumer boycotts, legal action and falling profits*". If deforestation can be found in a supply chain then companies are opening themselves up for a backlash within environmental advocacy groups. Due to this, global leaders such as Cargill and ADM implement a due-diligence process that includes the evaluation of problems that can affect their reputations, knowledge gained from such motivates more direct CSR policy implementation (Gardner, 2020). Due to a company's overall reputation being a function of reputation among its various stakeholders (investors, customers, suppliers, employees, regulators, politicians and NGOs) the implementation of CSR with specific targets must be published with attainable expectations (Gardner, 2020). It can therefore be deduced that companies with a larger reputational risk, such as Cargill and ADM, have greater motivations to address environmental issues and meet targets published within business models.

If the reputation of the company is more positive than its underlying reality a reputation gap can occur. This arises from overly ambitious CSR policy being published with little actual realisation of necessary results. Eventually the failure of a firm to meet its policy changes will be recognised and published (Chikudate, 2019). This can appear more influential than not holding CSR policy, as reported failures damage reputation of companies substantially and provide evidential facts for NGOs and journalists to report on. Due to this companies with a large reputational risk will not implement tangible policy changes lightly, instead choosing interpretive ambitions with little room for direct monitoring of success (Tyldesley, 2020). This reduces the reputation-reality gap by promising less.

However, companies such as Glencore face little reputational risk due to not being a household name compared to the public facing companies of Cargill and ADM (Employee one, 2020). Therefore, reputational risk is of little consequence and not a prominent motivator for small companies. These companies, however, can be seen to execute crisis management instead meaning the company chooses to handle threats to their reputation that have already surfaced rather than prevent breaches of reputational risk occurring (Saxton, Ren and Guo, 2020). Smaller companies implement this reactive approach, preferring to cover mistakes as they arise rather than prevent them. This means the pressure of reputational risk is lesser for smaller companies, instead these focus on survival in competitive soy markets (Mueller, 2020). Such was further confirmed when discussing matters with the CSR policy advisor van Gils (2020) whom explained, "*the ability to manage reputational risk is still fuzzy for the largest and most sophisticated companies. This assumes that smaller companies like Glencore, whose information is less readily available within the public domain , are generating lesser CSR policies and proving a larger threat to the negative implications of soy within the regions*."

The fact that Cargill is a privately-owned company dissipates some onus of reputational risk as there is less precedent to please a wider remit of stakeholders due to shares being held by a significant minority (Employee one, 2020). Therefore, CSR policy is designed to appease the desires of the shareholders. The motivator of reputational risk is more about preventing reputational damage for the private shareholders, whereas with publicly owned companies a large range of shareholders means broader CSR policies cater for the desires of a larger variety of shareholders (Gardner, 2020). Reputational risk poses less

damage to privately owned companies as shares are not traded on the stock exchange so face less implications if journalists report policy attainment failures to consumers.

Determining the motivations of companies to impose CSR policy into business models flagged differences between the companies being analysed. However, significant factors were also identified that directly prevented companies implementing CSR policies. It is important to understand the reasons companies would choose not to implement policy as this allows the development of solutions to overcome such reservations, in turn improving the outlook for environmental implications in the future.

4.5. De-motivators of change

De-motivators of change affect each company in an individual manner. The most significant de-motivators will be examined comprising of; failure of acknowledgement of efforts; lack of financial understanding and no legal requirement. Each will be introduced and assessed in turn. Such is important to understand as demotivators can act as inhibitors towards behavioural change, preventing progression to the action stage of the conceptual framework.

4.5.1. Failure of recognition

Failure of recognition refers to companies imposing CSR policy and meeting published expectations, yet this is not recognised by NGOs and media outlets. Companies that meet their expectations may not be awarded with the relevant level of acknowledgement. These are often well-known companies and can be subject to unfair attacks by special interest groups and the media. This was stated as a reason by ADM for their unwillingness to publish a tangible date for zero-deforestation; they stated "*nothing is enough, if we do the right this it is ignored by the media, and if we have the smallest indiscretion the hounds descend and our issues are published to the world*" (Fauaro, 2020). Whilst the strategy of not publishing policy adaptations publicly would protect the company from reputational risk some level of accountability provided by NGOs and lobbyists is required to generate valuable action by the companies. Therefore, companies with large reputational risks such as Cargill and ADM feel "*stuck between a rock and a hard place*" (Employee one, 2020), with regard to the most efficient method to publish positive change strategies whilst avoiding being villainised for not doing enough in the opinion of NGOs and journalists.

4.5.2. Lack of financial understanding

There appears a general lack of understanding of material risks for not being sustainable within corporate practice. The successful incorporation of CSR policy is seen to generate financial benefits by attracting and sustaining investment. Also allowing companies to remain ahead of environmental requirements, preventing economic shocks arising in the future. There remains little internalisation that lacking response to deforestation and social injustices will affect a company's profitability (Richardson, 2020). This is summed up further by Cargill who when commenting on the sustainability pledges of other companies explained "*there is a lack of awareness within production companies on how environmental risks can transform into financial risks*" (Employee one, 2020). Whilst Cargill holds the economic capacity to host financial risk departments, allowing the use of environmental impact assessments to calculate profitability, smaller companies are not accounted such a luxury. For less developed and refined companies, such as Glencore, their only method of assured profit comes directly from production and expansion of yields. This determines that threats to

protect land used to increase profit are held with trepidation. Investment is required to adequately calculate the value of ecosystem services provided by a region to determine the economic benefit of preserving the Cerrado biome in the long-term, rather than developing short-term economic gains from deforestation. There have been recent moves by organisations such as Global Canopy and Forest 500 to make these economic incentives more visible for producing companies (Rogerson, 2020). These companies work to educate small producers on the risk to their future prosperity should they fail to understand the significance posed by their current actions of deforestation. Charities including that of WWF have also been producing grants for small holdings surrounding the Cerrado region, given to small-scale producers in exchange for preservation of pristine forests. However, Bastoslima (2020) identifies negatives of grant implementation; "*whilst the funds may offer an initial promising investment boost to company proceedings this is not a continual source of income*". This determines that financial grants are seen to slow down deforestation initially, then shortly after, producers continue to exploit the region in an attempt to obtain a regular and guaranteed source of income.

4.5.3. Lack of government legislation

Due to CSR being a voluntary pledge it is deeply connected with one's values, not with laws. Values cannot be forced, only taught or promoted. Whilst considered in its infancy as a purely philanthropic activity CSR is not confined to exist without legal regulation coinciding with it. Reliance on a purely voluntary approach of CSR has been widely criticized for the impossibility of sanctioning harmful practices and the lack of transparency and credibility within CSR reports (Justo, 2019). Too much leeway is given to companies capable of dictating and monitoring their own policy determinations. With new institutional and domestic regulatory developments mandatory CSR is arising. The European commission has stated the "*need to acknowledge the role that complementary regulation plays in creating an environment more conducive to enterprises voluntarily meeting their social responsibility*" (European Commission, 2011). Unfortunately, whilst recognised within the EU the current political leadership of Bolsonaro in Brazil does not share the opinion of a need to protect the Cerrado. Historical efforts have been made to combat negative implications associated with soy production, notably the Amazon soy moratorium. Whilst this proved successful as halting associated deforestation in the Amazon biome the spatial heterogeneity of the ban meant leakage occurred (Waroux et al., 2019). The amazon saw a reduction in the proportion of soy planted on recently deforested land from 30% to 1%, however, most soy cultivation in Brazil comes from the Cerrado, outside the scope of the moratorium (Trase, 2018). This saw an increase in deforestation within the Cerrado region when the moratorium was introduced. The role of moratorium legislation is required with national focus rather than biome specific to prevent deforestation impacts migrating to alternate regions (Waroux et al., 2019). However, current political leadership means legalities are seen to favour agribusiness in the country (Prado, 2020).

With significant backing and agribusiness leaders being members of the electoral party, the economic status of Brazil is prioritised over the moral judgement of environmental consideration (Prado, 2020). A reduction in government legislation, particularly seen regarding the monitoring of illegal deforestation means companies have no obligation above that of their internal willingness to alter business models. The current president believes the economic prosperity of Brazil remains the most important factor to facilitate continuous growth of Brazil; and such will stem from exporting commodities. It is therefore deemed by

Brazilian agribusinesses that they are complying with all that is asked of them (Prado, 2020). There is no incentive to spend profits on altering business models unless there is a personal motivation for the company in question. Therefore, without any governmental legality enforcing environmental protection and preventing deforestation companies are unwilling to expend resources on non-guaranteed successes.

More recently the 'Holding Foreign Companies Accountable Act' of 2020 offers a legal stance on assisting with production branches meeting legal requirements of head office jurisdictions. This does not cover companies with head offices outside of the US, Brazilian firms with environmental impacts are excluded from the legal requirements. Moreover, Cargill and ADM claim to already be meeting this renewed legal requirement so no reform will be anticipated to ease their environmental impact with the implementation of the act as law (Mueller, 2020). A more stringent and geographically specific legislation is required to protect the Cerrado and prevent deforestation.

4.6. Policy Analysis

Current CSR policies were examined to understand the different CSR policy strategies of Cargill, ADM and Glencore in combating the environmental issues from deforestation associated with soy production, fulfilling the conceptual framework stage of action. The foregoing information provides the results of an in-depth analysis into the CSR policies currently implemented by Cargill, ADM and Glencore. Such analysis can deduce which dimensions of CSR are most apparent within each company's policies and assess how varying motivations have shaped business model alterations. The main features relating to preventing land use change via deforestation of CSR policy were determined and compiled into comparable tables, the year of each policy amendment is also included for future analysis. Such is presented below with *Table 5* presenting Cargill, *Table 6* representing ADM and *Table 7* Glencore.

Table 2 – CSR policy identified for Cargill preventing negative environmental consequences, including that of deforestation.

CARGILL CSR Policy amendment regarding environmental implications	Year of Implementation
"eliminate deforestation across our entire agricultural supply chain, halving it by 2020 and ending it completely by 2030"	2014
"ensure best practice throughout the supply chain via a collaboration of all relevant stakeholders"	2017
"educate consumers about the efficiency and favourable ecological footprint of sustainably sourced soy to prevent land conversion"	2019
Cargill commits to a "transparent and sustainable South American soy supply chain that: Transforms our supply chain to be deforestation free while protecting native vegetation beyond forests"	2019
Committed to a set date of 2030 for a zero-deforestation business model.	

Table 3 - CSR policy identified for ADM preventing negative environmental consequences, including that of deforestation.

ADM CSR Policy amendment regarding environmental implications	Year of Implementation
"create more sustainable, traceable agricultural supply chains that protect forests, important ecosystems and peatlands"	2013
"commit to build a transparent, traceable soy supply chain that does not contribute to deforestation or exploitation"	2015
Participates in the Brazil institute of Environment and Renewable natural resources meaning "surveillance of deforested areas is made by satellite imaging and, if a producer clears a small fraction of native vegetation on his property and plants soy in this area, all of the farm's production becomes ineligible for trading"	2017
"analyse the whole supply chain to determine exploitive practices"	2018
No date has been published to achieve a zero-deforestation business model.	

Table 4 - CSR policy identified for Glencore preventing negative environmental consequences including that of deforestation

GLENCORE CSR Policy amendment regarding environmental implications	Year of implementation
"work to avoid environmental incidents: our rolling target is to have no major catastrophic environmental incidents"	2017
"minimise our potential impact, complying with or exceeding relevant regulations"	2018
"minimise any negative impacts from our activities and to build partnerships to support sustainable development and growth"	2018
"seek to lower our carbon footprint of our own operations, and support national programmes to achieve the goals of the Paris Agreement"	2019
No date has been published to achieve an explicit reduction in deforestation or for a zero-deforestation business model.	

Significant similarities can be seen between the policies comprising of goals aimed at environmental protection and increased transparency, with large differences in company dialects. Cargill presents a strong image of a change within business models by declaring a zero-deforestation commitment by 2030 and implementing monitoring equipment for illegal activities (Tyldesley, 2018). ADM are also seen to show a clear direction in policy wording regarding the need for more sustainable practices and protection. Their pledge of zero-deforestation is not subject to time constraints. However, smaller company Glencore has less ambitious targets with little direction offered throughout policy documentation. No clear commitments are offered by Glencore as to how sustainability declarations are being ensued.

Each company has declared a commitment to prevent deforestation within the soy sourcing regions; yet Cargill remains the only company with a predetermined commitment date to attain zero-deforestation commitments. Glencore have determined it is not within their interest to commit to a specific date of achieving their zero-deforestation. Also making no explicit claim to the prevention of deforestation, instead using the terminology of "protecting the environment", not omitting environmental concern. Larger companies are expected to publish pledges due to the aforementioned pressures from consumers and NGOs,

whilst smaller companies are capable of providing less transparency to proceedings (Mueller, 2020). Additionally, due to environmental sustainability and forest protection movements focussing on Cargill and ADM, the practices of Glencore are not being examined, so feel less pressured to produce as ambitious sustainability reports. It can however be deduced that all companies examined are meeting the voluntary dimension of CSR by exceeding the legal requirements of their jurisdictions. Cargill and ADM exceed Glencore's ambition above legal requirements in the terminology of statements. Whilst Cargill and ADM express a desire to 'eliminate' and 'remove exploitation', Glencore uses the terminology of 'minimise' and 'comply'. This can be attributed to the previously discussed motivation of holding less reputational risk and minimal consumer pressure to increase CSR policy targets.

Alongside this voluntary dimension span the environmental and social dimensions (Sakar, 2016). It is clear that the environmental dimensions are being met by all three companies. Each provides different wording regarding the understanding of threats to the Cerrado biome. This was identified within the action stage of the conceptual framework and has contributed to the shaping of policy to alleviate implications of soy. Again, it can be seen that the greatest commitment to environmental issues comes from Cargill who published a time frame for zero-deforestation. It must be noted the language regarding 'zero-deforestation by 2030' was rephrased between the 2014 and 2019 policy renewal, however, as a public statement was never made addressing this change the of deadline, 2030 is still deemed a monitorable and tangible target by NGOs to track Cargill's progress (Mueller, 2020). Despite being excluded from the direct investigation of this thesis all companies also pledge social dimensions of CSR, such regards safe working practice and limiting illegal exploitation, in line with the SDGs.

Cargill shows particularly focus to the ethical dimension assumed within CSR by emphasising the need to increase transparency within the supply chain. This is used as a tool to encourage continued shareholder investment. The privately-owned company works with stakeholders at roundtable negotiations to ensure all aspects of investment can be tracked. This leads to the ability to determine levels of sustainability within each stage of the supply chain, increasing the ability to prevent environmental harm within the Cerrado. This reduces reputational risks posed to the company as exposing transactions throughout the supply chain limits the ability of journalists to expose trading secrets. Glencore alternatively expresses no explicit aim to increase supply chain transparency but does express openness by publishing reports on sustainability findings within the region (Van Gils, 2020). These reports are self-deduced, so their findings may be subject to internal bias of surveyors.

Due to the nature of soy production and exportation being a marketable entity the economic dimension underlies all CSR policy when implemented into business models. Rogerson (2020) explains: "*No company is willing to risk their economic profitability; therefore, CSR commitments may remain timid to prevent reputational exploitation should targets not be met*." It is stated though by Prado (2020) that "*companies would not choose to implement any form of CSR had there not been an incentive of economic benefit, this is simple market knowledge*". Such ties into the stakeholder dimension, whilst Cargill has a large social media following and is the most recognisable household name, as long as the lesser shareholders are happy with business model alterations few repercussions occur within privately owned companies. ADM and Glencore, however, must cater to broader target audiences due to their public market setting. Such can account for less ambitious targets as negative reporting of the company causes a greater detrimental impact than it would for

Cargill (An and Carr, 2017). Therefore, by implementing more realistic targets the reputation-reality gap can be subsided and negative attention abated.

Analysis of the interpretation of the six dimensions of CSR demonstrates that there is indeed a difference in the commitments of companies working within the same biome region. Having determined policy variations, chosen within the action stage of the conceptual framework, the actioning the proposals can be analysed for success. In doing so the value of CSR polices can be compared between companies and the reasons for any occurring differences in success of commitments can be examined.

4.7. Assessing policy success

From the analysis of CSR policy within company business models it can be hypothesised that with regard to Cargill and ADM reductions in environmental implications should have arisen. Therefore, the following directional hypothesis can be tested:

> *"There will be a significant difference reduction in deforestation risk before and after the implementation of CSR zero-deforestation commitments."*

In determining the success of policy implementation, the maintenance of the business model change can be assessed. When applying Ajzen's theory (2015), successful implementation of CSR policy would show a reduction in deforestation risk associated with soy from the time of CSR implementation. This is shown in analysis of the maintenance stage of the conceptual framework. Whilst it would be expected that there are fluctuations in exportation and risk due to annual crop yield calculations can be performed to determine if CSR policy has provided any significant change. Particular focus can be given to Cargill and ADM who pledge to achieve a zero-deforestation commitment meaning a substantial and statistically significant reduction is expected to be seen within these companies. Statistical data gained from the TRASE website tracks the deforestation risk posed by each company within the Cerrado region, purely associated with the extraction of soy.

The first piece of information analysed depicts the exportation volume of each company. It can be seen that the general trend is one of continued growth. Fluctuations are expected given the nature of commodity extraction being reliant upon seasonal weather changes, particularly fluctuant in the current era with climate change altering weather patterns (*Figure 9)*. This continued growth causes concern regarding deforestation risk, as previously explained, soy cultivation is already particularly refined and intensive. Meaning that exportation volume growth is not likely arising from intensification of land use practices, instead being facilitated by another factor. One such conclusion assumed is that of monoculture expansion via deforestation. In order to determine if this is the case, the risk of deforestation stemming from soy production for the Cerrado region was compiled to track annual changes (*Figure 10).* An average decline was seen within deforestation risk showing positive results regarding the status of deforestation risk as a whole. To further analysis into rates of decline rate, time frames were split for Cargill and ADM to comprise of deforestation risk from soy before and after the imposition of zero-deforestation commitments. Such would expect to reduce the risk of deforestation to show that policy has been successfully implemented into business models. After calculating the rate of deforestation decline statistical analysis was performed.

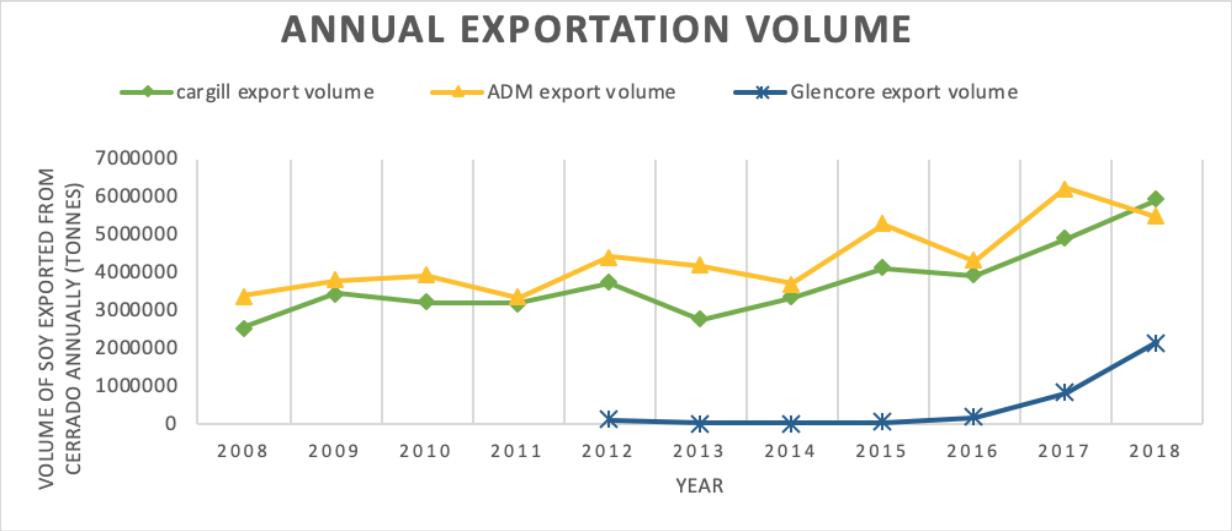

Figure 9 – A graph to show annual exportation volumes for each company over a ten-year period.

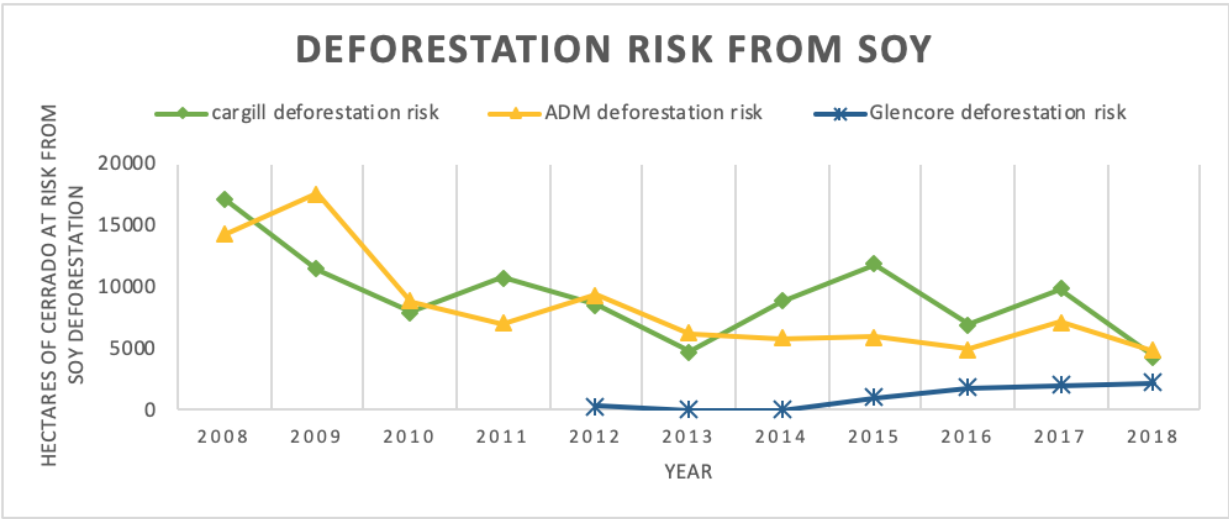

Figure 10 – A graph to show deforestation risk posed to the Cerrado from soy production for each company being examined over a ten-year period.

Deforestation risk from soy was calculated based on the total hectares of deforestation over the past five years that is associated with soy expansion per jurisdiction. An average was generated across a five-year period to give an annual rate. This was measured by accessing NGO data regarding the expansion of new soy monocultures into recently deforested areas within the Cerrado, identified via remote sensing data (TRASE, 2020). Risk is allocated to the companies within the supply chain in proportion to the volume of soy that they export from a given jurisdiction relative to the total production of soy (by all actors) in the same region. Rates of decline were calculated before the implementation of zero-deforestation policies as 48% for Cargill and 64% for ADM. Since the implementation of zero-deforestation commitments in 2014 for Cargill and 2015 for ADM the rates of decline are 28% and 6% respectively. Such means for Cargill; the hypothesis is rejected by identifying no significant difference in the rate of decline before and after implementation of zero-deforestation commitments, with a value of $p = <0.24$. However, for ADM the hypothesis is accepted with a decline in deforestation risk at $p = <0.046$. This shows that since the aforementioned policy adjustments the efforts to reduce deforestation have slowed.

This allows the determination that CSR policy regarding net zero deforestation commitments has not been successful at minimising the greatest threat posed to the Cerrado from soy production. With regard to Glencore, deforestation risk can be seen to be increasing on an exponential scale, showing the risk of smaller companies who lack the same reputational pressure of larger household names. It can also be seen than Glencore has only recently begun the exportation of soy from the Cerrado region. The significant rise of exportation volume means Glencore is the only company to still have concurrently increasing deforestation risk.

To support the numerical data explaining the lack of deforestation risk reduction, document analysis, particularly regarding NGO reporting of CSR pledges was examined. Due to being a voluntary pledge there is no enforceable monitoring strategy if companies fail to fulfil and sustain policy implementation. Brazil has previously rallied around the use of NGOs to report and publicise illegal deforestation to hold companies accountable. However, examined trends span data up to 2018; 2019 saw the inauguration of president Bolsonaro. With such a presidency change came significant alterations in environmental legislations (Prado, 2020). Being a powerful supporter of agribusiness, profits are favoured over preservation of land. As Bolsonaro is of the opinion that climate change does not exist; copious governmental departments, including the ministry of the environment dealing with deforestation, have been eliminated. Such has meant that what little monitoring had previously occurred within biomes across Brazil has been removed. It can therefore be expected more recent data comprising Bolsonaro's presidency will see a rise in both export of soy and the deforestation risk associated. This undermining of previous legislation nullifies past commitments of companies, in order to hold pace in a competitive market they must follow market trends. Therefore, if governmentally supported agribusiness companies increase their profitability via the rapid expansion into pristine forest regions others will follow to remain competitive (Mueller, 2020).

Due to the realisation that CSR policies relating to preventing deforestation have not been successful at altering business models to slow deforestation it is important for alternative strategies to be identified. Such can work accordingly with CSR policy to produce a more valuable solution to protect Cerrado flora. It is identified by CSR policy advisor (Van Gils, 2020) and experts interviewed (Gardner, Prado, Bastoslima and Rodgers, 2020) that without government intervention deforestation will not be eliminated. Gardner (2020) states "*success will never be achieved without a strong hand from the government as there are not enough markets out there to sap up all of the unsustainable supply. Instead we sadly see an increased dependence and reliance on voluntary private sector actions as there is a weakness of the current Brazilian government to take action, and a lack of resolve for caring*." Such is further echoes by Prado (2020) stating "*deforestation prevention will always need government backing as there are too many markets out there. And the risk of markets bifurcating to provide an alternate destiny for products will always be there".* These insights show the need for progression within CSR policy away from a voluntary dimension. There is also determined as being a need for increases in roundtable negotiations; "*companies must listen to all stakeholders involved to try and find possible solutions because there is not one universal answer. This kind of shared governance that manages to have private organisations involved alongside the state, NGOs and civil society is challenging but offers more possibilities by providing different alternatives*" (Prado, 2020). However, "*due to the capitalist society we live in, profits will always be put first and the demands of the shareholders prioritised rather than consumers*" (Gardner, 2020). This further strengthens the need for government

intervention with legalities regarding deforestation prevention. Using the example of the Amazon moratorium it can be said that "*government regulation is still the most effective, companies currently have the government in their pockets which is why we do not have regulation*" (Bastoslima, 2020). By increasing the legally enforceable implications of deforestation stemming from soy production "*companies would not have to make voluntary decisions as everything would be covered under one remit and be monitored*" (Rodgers, 2020). The incorporation of legal requirements relating to CSR would therefore diminish the voluntary dimension but can be determined as the most effective solution to ensure that commitments are both made and met, protecting the environment and promoting sustainable soy production.

5. Conclusion and Reflection

This research investigated motivators behind CSR implementation into business models for Cargill, ADM and Glencore, and the success of such CSR policy in eliminating deforestation in soy production. This thesis has mapped the stages of behavioural change, from identifying an issue to determining success of imposed changes to business models. In research both qualitative and quantitative analysis were used comprising predominantly of semi-structured interviews and statistical analysis. This final chapter is utilised to describe the conclusions of research and reflects upon the research process itself. The central research aim has been addressed through the use of sub questions; each will be addressed to answer to the main research question before reflecting upon the research process and its restrictions.

1. *Why do companies working within the Cerrado require CSR implementation?*

There are a wide variety of threats posed to delicate biomes such as the Cerrado. The most prominent of which was reported throughout literature to be direct deforestation for monoculture cultivation. Findings from interviews with South American conservationists and policy advisors however identified secondary deforestation as the greatest threat, stemming from clearance required for cattle ranching (Prado, 2020). Such affects both small- and large-scale farmers, only once this land has been used for cattle is it clear enough for soy cultivation. Therefore, soy is acting as a secondary driver of deforestation. A wide variety of implications were examined including social dimensions such as indigenous displacement, however, the largest and most imminent threat to ecosystem services and future prosperity was determined as the significant loss of flora. This identified the threat to the biome the first step of behavioural change, seen within the conceptual framework.

2. *Which factors most prominently motivate business model change in corporations?*

Within the motivations of companies, a willingness must form to generate the desire to change. All three companies in question showed a willingness to implement motivations comprising of economic factors, societal pressure and competitive advantage. These factors are not company specific but are seen to encompass the private sector in general and drive overarching business decision changes. Literature however determines that motivations are a separate entity to willingness and are specific to individual companies (Sadasivam, 2005). When analysing Cargill, ADM and Glencore three significant motivations became apparent through interviews and document analysis. The first being, upstream motivations stemming from head office enterprises meeting SDG goals. The second, downstream motivation, divided into the categorisations of supplier driven and consumer driven. The final is reputational risk meaning the motivation stems from the potential threats to income revenue associated with reputational failings. Alongside motivations there were also a readily identifiable set of demotivators. These demotivators act as reasonings as to why CSR policy is not implemented by the companies, being identified as, failure of recognition, lack of financial understanding and lack of advancing government legislation. Each company must weigh up the motivators against demotivators to determine if CSR policy implementation is worthwhile for their company business models.

3. *Do motivators differ between various soy exporting companies?*

This thesis identified that Cargill was the largest soy exporter examined with ADM being the second and Glencore the smallest. It was seen that for the larger exporters of Cargill and ADM more motivations were identified stemming from the desire to protect company reputation, as negative implications stemming from bad press to company proceedings could impact profitability. Reputational risk was less of a motivator for Glencore as with relation to soy products they are a lesser household name and less likely to be called upon for failed policy adherence. It was similarly seen that the larger exporting companies were more motivated by downstream motivations as their significant exportation volumes determine the potential for a large surplus should demand of the product drop. Therefore, responding to demands of consumer and downstream company pressure is a key element of business model design. This thesis therefore identified that there are differences in the motivations of companies. An important understanding for the future tailoring of CSR policy as each company has different reasons for policy implementation. Understanding these reasons can improve the success of CSR policy and reduce the negative implications associated with soy production.

4. *Are all dimensions of CSR accounted for in policy implementation?*

The six identified dimensions of CSR policy are economic, ethical, voluntary, social and environmental (Sakar and Searcy, 2016). Each of the analysed companies have been seen to incorporate each element into their CSR strategies. Particular differences, however, are seen to arise between the companies examined with focus given to the differences in environmental focus as identified with variations in policy wordings. Cargill and ADM have a larger environmental focus than Glencore. Other aspects such as the economic dimensions remain as a stator requirement as it is determined companies would not impose a change without some predicted economic benefit to themselves.

5. *Are CSR pledges by corporations producing significant change?*

The ambition of CSR policies to curb deforestation were analysed for apparent successful implementation. Such was expected to produce a significant reduction in deforestation with the implementation of CSR policy aimed at environmental protection. Through analysing the deforestation rates of the three companies in question it can be seen that CSR is not limiting this implication of soy production. Since the implementation of CSR there has been no significant reduction in the rate of deforestation; meaning the risk of deforestation directly from soy cultivation is not being addressed via CSR policy.

Central question

This section discusses the results and answers the central question of research:
What are the motivations influencing soy producing corporations within South America to adopt Corporate Social Responsibility policies within business models and to what extent are implemented CSR policies successful?

Results have identified that there are a variety of both motivators and demotivators working to shape CSR policy implementation into company business models. These elements work in coordination to create a benefit analysis for companies, from which the decision is made as to which level of CSR policy to implement into business models or not to implement at all. The three significant motivators identified were upstream motivation, downstream

motivation and reputational risk. The decision to implement CSR policy was seen to vary according to the size of the exportation value for the companies in question, with Cargill presenting the most proactive CSR policy approach. This involved a determination of providing a date by which the negative implication of deforestation from soy production would be reduced to zero. ADM presented the second identified most ambitious policy, also claiming their desire to achieve zero-deforestation soy production. However, no date for such ambition was provided. Glencore however, showed limited ambition within their dialect towards preventing deforestation.

It has been deduced that the largest motivation is that of reputational risk. Arising from the threat of negative associations causing share values to fall and impacting company profitability. However, with greater understanding and consumer education there could be an increase in downstream pressure arising from consumer activists generating an awareness of negative soy implications.

Overall it can be determined that with regard to preventing the largest identified soy cultivation threat of deforestation, CSR is failing to address the issue. Therefore, the negative implication is not being negated, identifying a failure in the actioning of CSR. Such an advancement in the success of CSR policy is determined to require an element of governmental legislation backing in the future to increase success.

5.1. Recommendations for further research

Should the topic of motivators behind CSR implementation be further investigated recommendations to improve the quality of research can be suggested. The first being the involvement of a greater number of soy producing companies to further hone the identification of trends in business model alterations. Such would allow the identification of a broader set of motivators and allow for future policy implementation to be a more tailored design. Secondly, a wider incorporation of interviewees was desired to increase the amount of insider insight relating to policy. Finally, in order to fully address the success of CSR policy implementation the process must be tracked throughout the entire supply chain to determine if the implementation at production stage is upheld throughout the commodity cycle. In doing so a greater understanding of CSR motivations at all stages of the supply chain can be acknowledged to aid success in future business model alterations.

5.2. Policy advice

The aim of this research was to gain insight into the motivations behind companies choosing to implement CSR policy and establish trends in the adoption of policies to aid future CSR policy alterations. For the development of policy within this field certain aspects must be accounted for.

Firstly, it is important to have in mind a specific goal when implementing CSR policy into business models. Identifying an explicit goal can provide more focus than an overarching selection. Such goal can then also be tracked for its success.

Secondly, it must be considered that there are different willingness's of companies to implement CSR policy into business models. Smaller companies are not as interested in altering business models as they face little reputational risk and are less affected by other motivators. Therefore, to overcome this issue the voluntary aspect of CSR may need alteration with the involvement of government aid.

Thirdly, it is important to consider the scalability of imposing CSR policy within business models. In order to create meaningful and sustainable change CSR policy must be

implemented within all aspects of the supply chain, not being limited to the production phase. Therefore, long-term and large-scale change requires monitoring of CSR throughout the entire supply process.

Finally, large companies should be expected to lead by example in combatting the negative implications associated with soy production via the implementation of CSR policy.

5.3. Reflection on the research process

Undertaking a master's thesis is a lengthy and challenging process. I believe this thesis provides a rounded view as to the process and determinations required of a company choosing to implement CSR into business models. However, challenges arose along the way, this section reflects upon these.

The first issue experienced throughout this thesis was that of the Covid-19 pandemic. The unprecedented nature of disruption caused by such an event required remote working, both as part of my SEI internship and at Radboud University. This caused a slowing of the writing process as correspondence was hindered between myself and my internship institution, creating lengthy delays in determining the relevant information via email rather than in person. This also produced implications with regard to gathering primary data. Research methods had to be significantly adapted to cope with pandemic hindrances; particularly within the interview and survey distribution phases of research. Interviewees were changed with little notice in line with the global pandemic status. As working schedules began to resume in the UK, South America witnessed the peak of the pandemic meaning interviews were cancelled due to the disruption. Similarly, the consumer perception survey was only distributed electronically to two universities, the aim was for wider distribution to create more generalisable findings, but greater resource priority was needed during this time to ensure the normal running of institutions without additional efforts of survey distribution. Overall, I believe given the nature of the ever-changing global situation this thesis was completed to my highest ability with the resources available to me.

A secondary issue with relation to interview was the prevalence of non-disclosure agreements of staff currently employed by the companies in question. This meant current CSR policy information was difficult to ascertain. To overcome this, interviews were undertaken with past employees and backed up with scholarly articles. Concepts were compiled to create a rounded picture and account for any missing elements in research.

The generalisability of results determines whether this case study analysis is comparable to others. I believe the case is comparable to relative sized companies and in economically similar regions. However, the participants used within survey research were of a specialised nature, being predominantly university students or staff. This research provides a good insight into interesting developments regarding business model alteration ad consumer preferences. This means generalising results is not an entirely accurate process.

Finally, I wish to reflect on my personal developments throughout this research. Results regarding the main motivations of CSR policy implementation were not as expected. I believed that a purely economic incentive would have been the main determinant as to whether CSR policy was implemented into business models. However, I was pleasantly surprised to note that there are a wider variety of exploratory thought processes within company proceedings relating to CSR. It was also beneficial to understand that there are various NGOs working hard to provide accountability surrounding CSR policy implementation. These are working to protect the environment and offer a beneficial role in keeping civil society aware of internal company proceedings to allow personal judgements to be formed.

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