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**Gordon Institute
of Business Science**
University of Pretoria

**Incorporation of climate change in
institutional investors' short-term investment decision-making**

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A research project submitted to the Gordon Institute of Business Science,
University of Pretoria, in partial fulfilment of the requirements for the degree
of Master of Business Administration.

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Abstract

The issue leading to this study is the purported lack of short-term consideration of climate change materiality on investment portfolios. The on-going research argument deliberates the roles and motives of institutional investors in considering environmental, social and governance (ESG) issues, including climate change, in investment decisions. The purpose of this study was therefore to explore the underlying motives of South African institutional investors for the incorporation of climate change in their short-term investment decision-making. The study was conducted through a qualitative, exploratory enquiry, whereby seven semi-structured interviews were conducted with institutions in the South African asset management industry.

Participants' views were analysed and indicated the following themes: The state of climate change awareness and the incorporation of ESG and climate change in investment decision-making; tactical valuation of assets using ESG/climate change screening and methods of monitoring ESG/climate change practices; and motives, incentives and constraints of responsible investment (RI) practices to incorporate climate change. These are supported by business conditions that enable consideration of climate change in investment analysis. Industry practitioners can lead by implementing RI to include climate change in order to attract potential clients to their portfolios.

Keywords

Socially responsible investment (SRI)

Environmental, social and governance (ESG)

Climate change

Institutional investors

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out research.

Name: Mthokozisi Sithole

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Date: 10 November 2014

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Chapter 1: Introduction to Research Problem

This study considers the incorporation of climate change in institutional investors' short-term investment decision-making within the corporate sustainability and responsibility (CSR) framework. The context of CSR is described by Visser (2013) and as discussed by Vakhidova (2012) in the text below. Advancements in environmental, social and governance (ESG) sustainability can be achieved, amongst other initiatives, through sustainable finance by the financial industry (Matthews & Rusinko, 2010; Vakhidova, 2012). This study explores the roles and motives of institutional investors in addressing ESG challenges with a focus on climate change, through socially responsible investment (SRI) practices (de Graaf & Slager, 2009; Harmes, 2011; Jansson, Biel, Andersson, & Garling, 2011).

1.1 Problem Definition

Can institutional investors influence corporate behaviour towards ESG sustainability in addressing material issues such as climate change before climate risks become irreversible? Butler and Wong (2011), and Cotter and Najah (2012) argue that investment institutions have the power to promote ESG performance including climate change mitigation through SRI practices. Is this a matter of trade-off between investment returns for institutional investors versus driving ESG performance in corporations? De Graaf and Slager (2009) argue that it is usually a trade-off driven by the fiduciary duty to beneficiaries. Jansson et al. (2011) argue that there are incentives and constraints that influence institutional investors' decisions to incorporate ESG issues, including climate change mitigation in the investment process.

Harmes (2011) and Pattberg (2012) argue that there needs to be a strong business case for motivating SRI to incorporate climate change and it is weak at the moment. Viviers and Eccles (2012) require an explanation for SRI decisions to integrate ESG issues for institutions in emerging economies. The development of SRI research on climate change is seen to be relevant for South Africa as an emerging economy. Increases in carbon emissions and resulting climate change is driven by humans as a result of, amongst other things, increases in economic development (Roberts, 2014); this increases exposure to climate risks and opportunities for financial investments (Sørensen & Pfeifer, 2011). The study thus focuses on SRI practices of the South

African (SA) asset management industry. South Africa (SA) is considered as a key emerging economy in Africa and its Johannesburg Securities Exchange (JSE) stock market has achieved substantial growth over the past decades (Credit Suisse, 2013).

According to the Institute of Directors in Southern Africa (IoDSA), institutional investor means 'any legal person or institution referred to in the definition of "financial institutions" in section 1 of the Financial Services Board (FSB) Act No 97 of 1990, to the extent that these legal persons or institutions own and invest in the equity of a company and have obligations in respect of investment analysis, activities and returns to ultimate beneficiaries' (IoDSA, 2011, p.9). The IoDSA, together with the Government Employees Pension Fund (GEPF), are on the committee for responsible investing by institutional investors in SA (IoDSA, 2013). The committee established the Code for Responsible Investing in South Africa (CRISA) to encourage institutional investors to integrate sustainability issues such as ESG into their long-term investment decision-making (IoDSA, 2011).

CRISA provides guidance to the SA investment community to give effect to the King Code on Corporate Governance for South Africa 2009 (King III), as well as the United Nations-backed Principles for Responsible Investment (UNPRI) initiative (IoDSA, 2011). The problem is that many Portfolio Managers still regard ESG issues as irrelevant to mainstream investing, because shareholders are not active enough in engaging with corporates despite the evidence of their material risk; asset owners are also not monitoring SRI practices of investment managers (PRI Association, 2013). Responsible investment (RI) practices have considerably increased and gained momentum in SA (van der Ahee & Schulschenk, 2013). The majority of institutional investors in SA are aware of responsible investment initiatives, including UNPRI and CRISA (van der Ahee & Schulschenk, 2013).

Van der Ahee and Schulschenk (2013) find that the majority of SA institutional investors acknowledge the materiality of ESG issues on long-term investment performance and corporate sustainability, and also acknowledge that ESG issues need to be integrated into investment decisions. The motives for RI practices include being seen as a responsible or corporate citizen, CRISA, UNPRI and financial returns (van der Ahee & Schulschenk, 2013). Most institutional investors may declare that they integrate ESG issues in their decision-making, but there is still not enough evidence to show that they actively make investments on the basis of ESG considerations (van der Ahee & Schulschenk, 2013). This could be due to constraints such as the perception of

reduced financial performance and the lack of ESG monitoring tools (van der Ahee & Schulschenk, 2013). This is the reason why the underlying motives for SRI practices by institutional investors in SA need to be further explored by additional research.

A survey conducted by Investment Solutions (2013) on the state of responsible investing in SA revealed that institutional investors value the impact of ESG in the long-term performance as a form of better assessment of risk. The concern is the lack of attention given to address the ESG impact in the short-term. The King III principle on integrated reporting has compelled JSE-listed companies to report on sustainability issues, yet there is no clarity on how much credence is given by institutional investors to ESG performances of their prospective or investee companies (van der Ahee & Schulschenk, 2013). This creates an opportunity to extend the ESG discussion into SRI to incorporate climate change mitigation in SA. South Africa uses extensive energy to extract natural resources and thus contributes to climate change as mentioned above. So, institutional investors have a role to play in promoting SRI to incorporate climate change mitigation in SA.

Until recently, little consideration has been given to understanding the impact of climate change for long-term investment risks and opportunities (Mercer, 2012). Mercer (2012) suggests that a portfolio mix can be improved by allocating investments to climate-sensitive assets, but ultimately, investors must make their own assessment of climate change risks and likely scenarios to inform their strategic decision-making processes. The problem is that there appears to be a high level of disconnection between stated interest and the ability for large asset owners to dedicate resources (financial and time), to aspects of climate sensitive investment opportunities and risk management (Mercer, 2012).

Mughogho and Dhirani (2012) acknowledge the materiality of climate change risk in companies' financial performance and thus on investment performance. SA is vulnerable to the impacts of climate change; this was measured in the National Climate Change Response White Paper in 2011 (Mughogho & Dhirani, 2012). Oliphant (2012) also acknowledges that ESG externalities such as climate change will have material impact on SA businesses, yet they are not priced in economic inputs and outputs, that is energy and water, and greenhouse gases (GHG) emissions – the main cause of climate change.

The negative impacts of climate change include: food shortages; water scarcity; damage to the ecosystem; extreme weather disasters; risk of abrupt and major irreversible climate changes (Oliphant, 2012). The climate change issues have an impact on companies' revenues and costs; and institutional investors in these companies will also be affected (Mughogho & Dhirani, 2012). This is due to the power of institutional investors as universal owners – major shareholding in diversified economies and sectors; and as providers of financial capital (Mughogho & Dhirani, 2012; Oliphant, 2012).

Mughogho and Dhirani (2012) argue that responsible investors are likely to earn robust risk-adjusted long-term returns and there is some evidence that green indexed funds such as the Nedbank BettaBeta Exchange Traded Fund (BGREEN ETF) has outperformed the JSE All Share Index in the long term (Nedbank Capital, 2012). Mughogho and Dhirani (2012) suggested that the sooner South African investors, companies and policymakers take action to mitigate climate change in the short-term, the sooner they will benefit from limited costs of reducing emissions in the long-term and increased opportunity from investments in low-carbon and energy-efficient technologies.

The demand for low carbon investments has increased in SA as result of the following: increasing awareness of climate risks as disclosed in the Carbon Disclosure Project (CDP), an institutional investor-led initiative; an anticipated legislation process to apply a carbon tax to disincentivise investments in high carbon-carbon assets; and other regulatory interventions imposed on the financial industry (Mughogho & Dhirani, 2012). The problem is that current responsible investing practices are insufficient to address short-termism in financial markets, resulting in the misalignment of climate capital required for long-term needs in low carbon investments (Mughogho & Dhirani, 2012).

Most literature studies refer to responsible investing as socially responsible investment, which refers to the practice of integrating ESG issues in institutional investors' investment processes (Capelle-Blancard & Monjon, 2012; de Graaf & Slager, 2009; Sandberg, 2011; Viviers & Eccles, 2012). Most SRI studies have focused on financial performance rather than social concerns, ethics or moral values (Capelle-Blancard & Monjon, 2012; Vakhidova, 2012). There is a gap in literature on the social sustainability impact of SRI and there is little empirical evidence on the positive relationship between SRI and investment performance (Peiris & Evans, 2010; Vakhidova, 2012).

Institutional investors have a role to play in steering corporate behaviour towards ESG sustainability, owing to their power as major shareholders in the equity market, and as providers of financial capital (Butler & Wong, 2011; de Graaf & Slager, 2009; Richardson, 2011). The business case on climate change disclosure as an instrument of SRI to incorporate climate change is still lacking empirical evidence, but it is usually profit motivated rather than for social sustainability (Cotter & Najah, 2012; Harmes, 2011; MacLeod & Park, 2011; Pattberg, 2012; Rezai, 2011).

The incentives and constraints of practicing SRI, with the focus on promoting climate change mitigation include the fiduciary duty on investment returns and short-termism on performance (Harmes, 2011; Jansson et al., 2011; Richardson, 2011). What remains to be explored are the aspirations of SRI investors (Capelle-Blancard & Monjon, 2012), the SRI investors conscious decisions to integrate ESG issues into investment analysis especially in emerging economies (Viviers & Eccles, 2012) and the relational motives of institutional investors for incorporating climate change in short-term investment decisions (Harmes, 2011; Rezai, 2011). SRI practices for promoting climate change mitigation are gaining momentum in SA as indicated above, however research on SRI is underdeveloped and there is a need for exploring further evidence on SRI investment practices.

This study is important for both local and global institutional investors, governments (policymakers), non-government organisations (NGOs) and social communities, who are concerned about ESG externalities such as climate change and their impact on ESG sustainability (Mughogho & Dhirani, 2012; Pattberg, 2012). This study contributes to academic research and industry knowledge: by further developing SRI research in emerging economies, in this case in South Africa; by deductively testing insights from literature on SRI practices; and by validating literature in trying to understand the motives of institutional investors for integrating ESG issues, with a focus on climate change, in their investment processes.

The intended use of this study is to encourage SRI practices: by increasing awareness of the impact of ESG externalities, such as climate change, on investment performance and ESG sustainability. This knowledge will assist (SA) institutional investors in realising the need to incorporate climate change risks and opportunities in their short-term investment decision-making in order to benefit from the full potential of SRI.

1.2 Research Purpose

The purpose of this exploratory study is to explore the underlying motives of South African institutional investors for the incorporation of climate change in their short-term investment decision-making. This involves exploring:

- Whether these investment institutions integrate ESG issues and consider climate change in their short-term investment decisions;
- How ESG and climate change are integrated in the investment process;
- Why are they doing it (or not doing it), and what incentives and constraints affect these decisions?
- What would be the necessary conditions for climate change to be consciously considered in short-term investment analysis?

1.3 Research Scope

The study is conducted with participants from the asset management industry in South Africa. The focus is on institutional investors SRI practices for promoting climate change within the CSR framework on sustainability. The study combines both deductive and inductive research approaches, that is reviewing literature to guide research questions, data collection and data analysis; and allowing for emerging themes from the views of participants.

Chapter 2: Literature Review

The researcher is of the view that climate change is a material issue to the sustainability of current business models and it will deteriorate environmental and societal systems if actors in the economic system do not cooperatively address it. The literature discussed by researchers such as Vakhidova (2012), Matthews and Rusinko (2010), Peiris and Evans (2010) in this study, illustrates the on-going research argument concerning the role that institutional investors can play in CSR using SRI. The focus is on the practices of SRI for promoting climate change mitigation as argued by Harmes (2011), Pattberg (2012), Cotter and Najah (2012), and other researchers.

SRI practices in this literature are discussed with a theoretical lens of investment strategies for institutional investors. These investment strategies as discussed by Gregory-Allen, Shawky, and Stangl (2009), Sullivan (2010) and others aim to determine the intangible value of stocks by analysing qualitative factors, such as ESG issues. The literature in this paper thus covers the investment theory on which this research is based; the need for sustainable finance; the concept and scope of SRI, including the proliferation of standards, codes and guidelines adopted to encourage RI; the roles and motives of institutional investors in climate change mitigation, which is the focus of this study; and a brief discussion regarding the activities of other industries in developing clean technology in the interest of mitigating climate change.

2.1 Investment Theory

This study is based in the theory of investments. Investment strategies are crafted and used to select stocks based on value analysis. Gregory-Allen, Shawky, and Stangl (2009), Bettman, Sault, and Schultz (2009), and Sullivan (2010) categorised the two main approaches used to select stocks in actively managed equity funds as fundamental and quantitative analysis. Fundamental analysis involves the assessment of risks and opportunities on both financial signals and qualitative issues, while quantitative analysis involves technical analysis on financial performance and indicators (Bettman, Sault, & Schultz, 2009; Gregory-Allen, Shawky, & Stangl, 2009; Sullivan, 2010).

Xue and Zhang (2011) supported the argument that both approaches seek to identify and explain factors affecting stock valuation and equity/share prices. Sullivan (2010) argued that the market is driven towards inefficiency not by the investment approach,

but rather by the failure to incorporate the qualities of intelligent investing. Intelligent investing can be inferred to include SRI, which assesses risks and opportunities on qualitative issues that are difficult to measure, such as the sustainability of ESG issues as described by Viviers and Eccles (2012).

This study contributed to the area of qualitative analysis in valuations for the intangible value of stocks, which also appears to be affected by the consideration of ESG issues in investment analysis. SRI is meant to address these ESG challenges, however there is a gap in the literature on the societal sustainability impact of SRI (Vakhidova, 2012).

2.2 Sustainable Finance

Sustainable finance is incorporated in CSR for financial investments in order to deal with, amongst others, climate change and energy themes (Harmes, 2011). According to Visser (2013), CSR stands for corporate sustainability and responsibility; he argued that CSR is a contested concept, which shares meaning and overlaps with related concepts like sustainable development, corporate citizenship, corporate social responsibility, environmental management, business ethics and stakeholder management. Visser (2013) defined CSR as an approach by businesses to consistently create shared value in society through economic development, good governance, stakeholder responsiveness and environmental improvement.

Matthews and Rusinko (2010) suggested that corporates must consider corporate sustainability in order to reconcile financial goals with environmental and social goals. The financial industry and its institutions require the consideration of ESG factors in investment decision-making for advancement in sustainable development (Matthews & Rusinko, 2010). Vakhidova (2012) also argued that the financial industry could improve ESG performance by implementing corporate social responsibility in financial investments. SRI is a part of the financial industry and is used to address ESG challenges to justify a solid business case (Vakhidova, 2012); this is why SRI has grown to be an important segment of the investment industry (Peiris & Evans, 2010).

Matthews and Rusinko (2010) argued that there are six necessary conditions for advancing sustainable development, these include but not limited to increasing socially responsible investment, participation by financial analysts in integrating sustainability into their valuation frameworks, development of widely accepted disclosure standards

for sustainability and increased sustainability reporting by corporations. Matthews and Rusinko (2010) argued the importance of linking sustainability performance to financial valuation into the financial analysts' analytical framework. Eccles and Saltzman (2011) also argued that a sustainable society could be achieved through integrated reporting.

Eccles and Saltzman (2011) defined integrated reporting as the combination of a company's financial and non-financial performances in one integrated report. The impetus behind integrated reporting was the King III report, which recommended that companies provide integrated reports combining material financial and ESG sustainability information (Eccles & Saltzman, 2011). As of 2011, South Africa was the only country that had mandated integrated reporting as a listing requirement at the JSE (Eccles & Saltzman, 2011). The three classes of benefits identified by Eccles and Saltzman (2011) are: internal benefits – including greater stakeholder engagement, and lower reputational risk; external market benefits – including meeting the needs of institutional investors who want ESG information; and managing regulatory risk – including preparation to adapt to international regulations and responding to requests from stock exchanges.

Institutional investors demand integrated reports through SRI; Peiris and Evans (2010) acknowledged that SRI has grown to be an integral part of the investment market. Peiris and Evans (201) argued that although there is a close linkage, empirical analysis to date has not been conclusive as to whether integrating ESG factors in the investment process has any effect on investment returns. There is a lack of research that explains the underlying relationship between SRI factors and investment return performance (Peiris & Evans, 2010). Peiris and Evans (2010) found that there are higher earnings expectations for stocks with high ESG rating inherent from the benefits of integrated reporting mentioned above, suggesting that broader ESG factors are relevant for consideration by investment decision-makers; but this concept still needed to be further developed (Vakhidova, 2012).

Vakhidova (2012) also pointed out that the concept of societal sustainability impact of SRI has been under-researched in existing literature. The study of the relationship between societal sustainability and investment returns is not the basis of this research, but the insight is that institutional investors consider investment returns when choosing SRI strategies to implement.

Vakhidova (2012) acknowledged the potential of SRI and that a number of challenges need to be addressed in order to justify a solid business case. These challenges (Vakhidova, 2012) included, but are not limited to: the investment horizon – the dominating paradigm is short-termism to maximise profits, with little interest for long-term oriented SRI strategies; and the lack of consistency, standardisation, transparency and accountability with the current system of reporting. The moral case of SRI still lacks academic rigor and requires a change in behavioural models and creation of values that shape business models (Vakhidova, 2012).

Vakhidova (2012) suggested that successful implementation of SRI for positive societal sustainability requires cooperation of responsible investors to redefine their fiduciary duty by making it accountable for the societal impacts of their investment decisions; change the investment horizon for returns, as short-termism was still dominant; and improve SRI reporting regime before the climate has completely and irreversibly changed.

2.3 Socially Responsible Investment

The archival research done by Viviers and Eccles (2012) on SRI noted that, investment practices that integrate ESG issues are mostly referred to as SRI strategies. De Graaf and Slager (2009) also defined SRI as an investment strategy that incorporates ESG issues as per the UNPRI definitions. According to Capelle-Blancard and Monjon (2012), SRI is also known as ethical investing; responsible investors tend to favour stocks of firms engaged in best practices with regards to environmental sustainability, community relations and are likely to promote shareholder engagement.

Viviers and Eccles (2012) suggested future research to explain the gap on investors' conscious decision to integrate ESG issues into the investment analysis, especially in emerging economies. Further development of this research is relevant for South Africa as an emerging economy. The archival research done by Capelle-Blancard and Monjon (2012) showed that most articles of SRI focused on financial performance, while few are concerned with ethics, altruism or moral values. They argued that the question of performance of SRI funds is relevant, but maybe too much attention has been paid to this issue.

Capelle-Blancard and Monjon (2012) concluded that advocates of SRI usually consider good financial performance as a likely incentive to promote SRI. However, the researcher reckons this is with an element of delusion because economic incentives can have many pervasive effects. Capelle-Blancard and Monjon (2012) suggested that altruism, reputation and self-esteem are also powerful motives that can lead to socially responsible investing by corporates. Capelle-Blancard and Monjon (2012) certainly acknowledged the relevance of financial performance of SRI, but recognised a need for research on a conceptual and theoretical ground, in particular the aspirations of SRI investors and the relationship between regulation and SRI practices.

The scope of SRI works within the ESG framework that is used in the investment process for valuation of securities, creation of investment strategies, as well as creation of thematic funds (de Graaf & Slager, 2009). Sandberg (2011) supported that SRI referred to the practice of integrating ESG considerations into the financial investment process, whereas mainstream investments focus mainly on financial risk and return. SRI thus also includes ESG goals in addition to mainstream investments, as well as modern portfolio theory techniques in investment analysis decisions (Sandberg, 2011).

2.3.1 Role and Power of Institutional Investors in SRI

Institutional investors are assumed to be responsible for the functioning of the financial industry through engagement with stakeholders, including investors and regulators, which suggests an extended fiduciary responsibility (de Graaf & Slager, 2009). Butler and Wong (2011) argued that institutional investors should take responsibility and stewardship in the investment market, owing to the explosive growth of managed assets and their significant shareholding in the equity market. According to Butler and Wong (2011) this has led to increased scrutiny of investment decisions made by institutional investors as major shareholders, because they tend to be reactive than proactive in addressing material issues.

According to de Graaf and Slager (2009), large institutional investors typically pursue SRI value ensuring strategies to address sustainability themes like climate change. The size of the equity market implies that institutional investors need to cooperate (de Graaf & Slager, 2009) and reform the fiduciary duty (Richardson, 2011); and need to have market standards to work with in order to achieve market efficiency (de Graaf & Slager, 2009). These standards include but not limited to the UNPRI, and the reporting standards suggested by the CDP (de Graaf & Slager, 2009). The power possessed by

institutional investors as major shareholders in the equity market is certain, and enables them to influence the behaviour of corporations in improving ESG performance through SRI.

2.3.2 Incentives and Constraints of SRI

De Graaf and Slager (2009) acknowledged that the SRI argument has centred on the trade-off between risk/return and integration of ESG issues into funds, which are both driven by the fiduciary duty of the beneficiaries. Jansson et al. (2011) also supported the argument that previous academic studies mainly addressed incentives and constraints to promoting SRI based on financial returns. Jansson et al. (2011) defined the fiduciary duty as the responsibility of investors to manage assets in the interest of their beneficiaries in a prudent and loyal way in order to maximise returns. This fiduciary duty prevented the implementation of SRI practices (Jansson et al., 2011).

Richardson (2011) examined this fiduciary relationship between trustees (institutional investors) and beneficiaries, and considered a potential reform to legalise SRI in the interest of beneficiaries. Richardson (2011) also acknowledged that the fiduciary duties have so far focussed on the financial materiality to investment performance. Richardson (2011) argued that by reframing the fiduciary duty as an active fiduciary relationship, trustees maybe allowed to invest socially beyond matters of financial returns to the will of beneficiaries, rather than the mere application of the legal duties. Richardson (2011) reached the following conclusions on his analysis of opportunities and obstacles of this proposed fiduciary relationship: Trustees are traditionally not obliged to engage with beneficiaries, but can be pursuant to specific legislation; and regulation rather than fiduciary law only rarely enables the voice of beneficiaries.

The lack unanimity among beneficiaries on ESG issues makes it difficult for trustees to respond to the will of beneficiaries, and also leads to disagreements on how to address social concerns such as risks of climate change (Richardson, 2011). And finally, Richardson (2011) suggested that the voice of beneficiaries should be heard in investment decisions of this reformed fiduciary relationship. In the same argument of the trade-off between financial performance and ESG integration on the fiduciary duty, de Graaf and Slager (2009) argued that the true value added by SRI was still undecided, but institutional investors adapt SRI strategies for its suggested potential of combined positive financial and societal returns. These better returns are arguably attributed to by low operational and reputational risks, and reduced information

asymmetry between the institutional investor and the investee company (de Graaf & Slager, 2009) .

According to de Graaf and Slager (2009), SRI helped institutional investors identify and amend structural misalignment in security pricing by applying the *beta* and *alpha* concepts of portfolio management. Beta strategies integrate long-term (negative) externalities like climate change in the investment process, to realise long-term return/risk goals (de Graaf & Slager, 2009).

Jansson et al. (2011) identified additional administrative costs of screening and monitoring companies as a constraint to SRI. Jansson et al. (2011) also argued that despite the vast body of research that suggested no clear financial difference in performance, fund managers are still sceptical about the financial performance of SRI; hence many institutional investors regarded reduced investment return as an important constraint to SRI. Jansson et al. (2011) however, pointed out that, advocates of SRI argued that the integration of ESG information would offer better opportunities to evaluate ESG liabilities, thus granting responsible investors with an information advantage.

The application of alpha strategies as described by (de Graaf & Slager, 2009) de Graaf and Slager (2009) requires identification of SRI-related anomaly to realise short-term investment goals. Alpha-driven portfolio managers argued that SRI is already embedded within the mainstream investment process; ESG risk factors get quantified and incorporated in the existing asset pricing theory framework, and further developed into an investment strategy (de Graaf & Slager, 2009).

According to Jansson et al. (2011), the focus on short-term investment returns by fund managers is another constraint to SRI; Short-termism overemphasises short-term information, and underweight information on long-term prospects including ESG information about corporations. Butler and Wong (2011) argued that performance measurements and financial incentives applied to fund managers needed to be consistent with good ESG stewardship. Fund managers strived to maximise short-term investment returns, because they are evaluated on short-term measures of financial performance; however, this proposition of regarding short-termism as a constraint to SRI still needed to be empirically verified (Jansson et al., 2011).

Herding is another important constraint to SRI as identified by Jansson et al. (2011); Herding is the tendency of institutional investors to follow the example of other investors. Jansson et al. (2011) suggested that an institutional investor's interest in a particular domain (short-term investment returns versus SRI), paired with outcome uncertainty, promoted herding. This proposal needed to be examined by future research (Jansson et al., 2011).

Jansson et al. (2011) concluded that while SRI investors were more likely to be influenced by herding, non-SRI investors were more likely to be influenced by market regulations in adopting SRI. Future research was recommended to investigate the effects of the actual implementation of regulations (Jansson et al., 2011). The underlying investment philosophies and market positions of different types of institutional investors, exposes them to different degrees of these incentives and constraints of promoting SRI. This makes it difficult to generalise common incentives and constraints of SRI practices.

2.3.3 Implementation of SRI Strategies

SRI has grown to be an integral part of the investment market (Peiris & Evans, 2010) , but literature on how to implement value-adding SRI strategies in the investment process was relatively scarce to date (de Graaf & Slager, 2009). De Graaf and Slager (2009) expanded the argument that institutional investors have instrumental morals, and relational motives for implementing SRI. This is evident in these three ESG embedded investment strategies:

- Financially driven strategies exploit SRI market inefficiencies that have implications for the share price;
- Ethically based strategies put the fiduciary duty in line with values of beneficiaries, which outweigh the effects of risk and return; and
- Value ensuring strategies integrate ESG risk, and affect the investment market as whole to realise long-term performance (de Graaf & Slager, 2009) .

In practice, a combination of elements of these three SRI strategies might be developed and applied into funds (de Graaf & Slager, 2009) . These SRI strategies are fitted in the design of the investment process through activities of:

1. Strategic asset allocation;

2. Execution through selection of external mandates and internal portfolios; and
3. The cycle is completed through monitoring and control of SRI strategies (de Graaf & Slager, 2009) .

The success of SRI implementation is dependant on the dominant values, beliefs, structures, and processes of an institutional investor (de Graaf & Slager, 2009). These relational motives of institutional investors are influenced by incentives and constraints that institutional investors are exposed to, and in turn these motives determine the suitable SRI strategy for investors.

2.3.4 Market Standards and Guidelines of SRI

Institutional investors have been practicing SRI for the past two decades, but noticeable progress in its development was with the launch of the UNPRI in 2006, when leading asset managers, pension funds, and consultants agreed to develop new strategies for incorporating ESG issues in investment decisions as part of their fiduciary duty (de Graaf & Slager, 2009). UNPRI bolstered international guidelines that have been developed to encourage institutional investors to participate and be active and responsible owners (Butler & Wong, 2011).

According to Eccles and Saltzman (2011) and le Roux (2010), integrated reporting is a JSE listing requirement for JSE listed companies. Integrated reporting is targeted at investors to enable them to assess what affects the ability of the company to create value (Abeysekera, 2013). This development on ESG focus in South Africa was bolstered by the release of the CRISA code (le Roux, 2010).

2.4 SRI to Incorporate Climate Change

Studies have shown that increases in carbon emissions and resulting climate change is driven by humans as a result of increases in population size, industrialisation, urbanisation, and economic development (Roberts, 2014). According to Sørensen and Pfeifer (2011), climate change is largely perpetuated by GHG as measured in carbon equivalents, creating climate risks and opportunities for investments. These risks and opportunities are also dependent on the climate policy debate; however, it is still important for institutional investors to address climate change in investment processes (Sørensen & Pfeifer, 2011).

Litterman (2011) argued that climate risk and carbon emissions have not been priced appropriately into risk management. Carbon emissions must be priced high immediately to address the uncertainty of the catastrophic risk; and investors must think carefully about the risk premium when investing in the financial market (Litterman, 2011). In addition to considering climate change to manage risk in the investment process, institutional investors have the power to practice SRI for climate change mitigation, due to their major shareholding in the equity market as suggested by Butler and Wong (2011) and Cotter and Najah (2012).

2.4.1 Role of Institutional Investors in SRI to Incorporate Climate Change

Environmentalists have sought to promote climate change mitigation using various forms of CSR, and the prominent strategy has been the growing focus on using the power of institutional investors such as mutual and pension funds to incentivise the market (Harmes, 2011). The idea was to influence the share price in order for corporations to reduce their carbon emissions (Harmes, 2011).

Rezai (2011) noted that climate change agents do have powers to adjust their investment decisions and have climate change mitigation instruments, but they chose not to use them. Hence the need to understand the relational motives of institutional investors (de Graaf & Slager, 2009), in incorporating climate change in investment decisions; however, most studies show that climate governance by institutional investors is usually motivated by profit rather than for social sustainability (MacLeod & Park, 2011).

Harmes (2011) suggested that the power of institutional investors could be used to create market incentives for corporations to reduce their carbon emissions. The promotion of climate change mitigation by institutional investors would happen via a two-staged process (Harmes, 2011): using substantial shareholding to pressure corporates to disclose their exposure to climate risk, as explained by Cotter and Najah (2012) below; and then incorporating climate risks into their investment decision-making, through environmental switching and environmental voice (Harmes, 2011).

Harmes (2011) described environmental switching as switching investments from poor to good climate performers; and environmental voice is putting direct pressure on corporate managers to act on climate change. Cotter and Najah (2012) investigated the collective influence of institutional investors on corporate disclosure of climate

change information using a stakeholder engagement perspective. These voluntary, market-based disclosure initiatives indicated that corporations responded to climate disclosure due to investor demands, faster than the influence of regulators and politicians (Cotter & Najah, 2012).

This initiative by institutional investors with regards to climate change disclosure has been spearheaded by the CDP (Cotter & Najah, 2012). According to Cotter and Najah (2012), disclosures of climate change include, but are not limited to: physical, regulatory and other climate risks and opportunities; GHG emissions intensity and performance against reduction targets; corporate strategy and governance on climate change and participation in emissions trading schemes (ETS). Cotter and Najah (2012) supported the argument that the influence of institutional investors was positively associated with disclosures of climate change by large corporations.

Cotter and Najah (2012) found the extent and quality of climate change disclosures to be associated with three indicators of responsiveness by corporations: completion of the CDP questionnaire and allowing it to be published on CDP's website; the extent and quality of information provided in the CDP questionnaire responses; and communicating CDP activities that influenced disclosures via corporate reporting including annual and sustainability reports, or on company websites. This public disclosure and reporting of climate change information has the potential to benefit a broader group of stakeholders associated with improved emissions management and a likely societal interest (Cotter & Najah, 2012).

Harmes (2011) argued that the potential for using institutional investors to create financial incentives for climate change mitigation in the form of share price performance is too optimistic and has a weak theoretical case. According to Harmes (2011), this argument is owing to the structural constraints faced by most institutional investors, as well as a fundamentally incorrect assumption that climate change is a market externality. Most competent economists would disagree with Harmes' argument, hence Capelle-Blancard and Monjon (2012) recognised the need to further research this theoretical case, in particular the aspirations of SRI investors.

MacLeod and Park (2011) also investigated financial activism by Investor-Driven Networks (IGNs) and their impact on climate governance. MacLeod and Park (2011) described IGNs as alliances of investors as actors and instruments of private global economic and environmental governance. The CDP is one such organisation of IGNs

formed by alliances of high profile institutional investors, and is meant to exert influence on climate change disclosure and monitoring of environmental impacts (MacLeod & Park, 2011). Key actors in most of these networks are pension funds and mutual funds, and insurance companies in certain markets who engage with corporates in an attempt to steer behaviour towards ESG performance as well as financial goals and standards (MacLeod & Park, 2011).

Harmes (2011) argued that the four main categories of institutional investors have different investment motives/interests, and experienced different constraints that may, or may not allow them to take climate change into the investment process. These categories include: investment/mutual fund companies; pension funds; insurers and hedge funds (Harmes, 2011). The conclusion drawn by Harmes (2011) is that, institutional investors are more likely to promote climate change for ethical reasons rather than business reasons.

2.4.2 The Business Case for SRI to Incorporate Climate Change

The second assumption underpinning investor environmentalism is the creation of financial incentives for climate change: the business case is based on the idea that climate change creates financial risks for corporations, and that disclosure of these climate risks will create market incentives for institutional investors (Harmes, 2011). Pattberg (2012) also argued that institutional investors are aware of the negative impacts of climate risks for corporations, and have started demanding concrete risk management strategies in corporate responses to climate change.

Pattberg (2012) acknowledged that climate change has become a key business risk. Initiatives like the CDP are seeking to steer corporate behaviour towards more sustainable direction, through the use of climate governance by disclosure as a key instrument (Pattberg, 2012). The CDP uses the power of institutional investors as agents to force climate change disclosure, and to prescribe behaviour (Pattberg, 2012). Pattberg (2012) argued that the functions of global climate governance ranged from providing information, facilitating research, creating markets, and influencing decision-making processes.

It is widely acknowledged that climate risks translate into financial costs for corporates, these climate risks falls into the following four primary categories:

- Regulatory risk - corporations with significant GHG emissions face risk from new regulations at both national and international level;
- Physical risk – intensity and frequency of severe weather conditions such as floods, droughts, sea-level rises, and storms;
- Reputational and competitive risk – threat for corporations that miss the opportunity for innovative behaviour and products (Harmes, 2011; Pattberg, 2012) .

Harmes (2011) and Pattberg (2012) argued that the technique of climate change disclosure is necessary to calculate climate risks, however climate disclosure has been relatively inefficient when measured against carbon emissions targets, as per the Kyoto Protocol agreements. In addition, research suggested that investors did not effectively use climate change information from the CDP in their investment decisions (Harmes, 2011; Pattberg, 2012). Rezai (2011) and Harmes (2011) argued that investor environmentalism regarded climate change as a negative externality (market failure), which required government intervention to create financial incentives. This intervention could be in a form of carbon taxes and other mechanism to enforce reduction of carbon emissions through development and adoption of clean technologies (Harmes, 2011; Rezai, 2011).

Harmes (2011) continued to argue that the problem for proponents of investor environmentalism is not the lack of market incentives, but an informational problem in that many investors are not aware of the importance of climate risks. Harmes' (2011) argument was that the business case for investor environmentalism was not premised on externalities, but instead was implicitly premised on information asymmetries, another category of market failure. The problem with information asymmetry is the adverse selection of products by uninformed market actors with no full information on product risks (Harmes, 2011). Harmes (2011) suggested but lacked empirical evidence that this is the only reason why disclosure of climate change information can lead to the correction of the market failure.

In response to the ineffective use of climate disclosure information by investors as mentioned by Harmes (2011), Pattberg (2012) nevertheless pointed out the significance of carbon disclosure, that: it empowered the civil society, and at the same time consolidated the standardisation of climate change; although it might not change the intrinsic short-term logic of investment decisions. Carbon disclosures potentially

provided useful information for NGOs, venture capitalists, and governments, and so it influences the behaviour of these actors (Pattberg, 2012).

Harmes' (2011) overall argument for the business case was that climate change is classified as a negative externality rather than an information asymmetry, suggesting that carbon disclosure is unlikely to create real financial incentives for promoting climate change mitigation through share price performance. Harmes (2011) recommended future research to assess existing evidence to confirm or repudiate his analysis; the assessment should show whether institutional investors incorporate climate risks in their investment decision-making.

Harmes' (2011) theoretical analysis offered insights for future evaluations of empirical evidence, while neither confirming nor refuting the business case, these insights included:

- The need to recognise that simple participation in an investor environmentalism initiative like the CDP, does not necessarily mean that investors are incorporating climate change into their investment decision-making;
- The need to avoid viewing investors who incorporate existing government regulations, by itself, as evidence of incorporating climate change, and secondly to critically assess the claims made by investors.

Pattberg (2012) acknowledged this groundwork done Harmes (2011), and suggested future research for a more systematic understanding of institutional investors' motives and rationale for participating in disclosure-based climate governance. Another initiative by financial actors seeking to promote global climate governance was the establishment of the ClimateWise Principles (ClimateWise) in 2007 (Thistlethwaite, 2012). ClimateWise is another example of an IGN or a self-regulatory institutional similar to the CDP, formed by the insurance sector in order to expand the authority of the financial industry in global climate governance. ClimateWise addressed Harmes' (2011) criticism that, investors respond to climate disclosure by first pricing externalities contributing to these risks through regulations (Thistlethwaite, 2012).

The developments of ClimateWise do not only explore efforts by institutional investors to promote climate change risk disclosure, but a more robust effort on pricing behaviour contributing to climate change, using the sectors access to both technical and political authority (Thistlethwaite, 2012). The strategic incentive for insurers to

govern climate change is to price in weather-related losses; they realised that physical risk materialised into financial costs, which need to be priced accordingly using premiums to generate reserves to cover these costs (Thistlethwaite, 2012).

Rezai (2011) made an argument about international regulations that the decisions to overinvest in conventional capital (consumption), and underinvest in climate capital (mitigation) are taken endogenously, and were in response to carbon price signals. Rezai (2011) suggested that businesses needed to adopt an optimal climate policy that considers externalities to correct market failures. Pattberg (2012) supported that many associated business risks were linked directly to international climate policies.

2.4.3 Market Standards and Guidelines for Climate Change

The use of the collective power of institutional investors is evident in the emergence of IGNs such as the CDP, an independent non-profit organisation that spearheaded this collective action by institutional investors to pressure corporates to disclose climate change information through corporate responses (Cotter & Najah, 2012; Harmes, 2011; MacLeod & Park, 2011; Pattberg, 2012; Thistlethwaite, 2012) MacLeod and Park (2011) argued that the CDP has grown, and its relative success was achieved quickly; however, the CDP has limitations because of limited involvement of actors outside the investment industry, and it is focused on climate disclosure as the only instrument (Harmes, 2011; MacLeod & Park, 2011; Pattberg, 2012) .

Global banks are also acting as sustainability regulators in an attempt to mitigate the potentially negative social and environmental consequences during infrastructure development (Conley & Williams, 2011). According to Conley and Williams (2011), these banks use Equator Principles (EPs) to ensure responsibility and sustainability in their lending conditions. EPs are a voluntary agreement implemented by financial institutions to manage social and environmental issues that pose risk to project finance. Conley and Williams (2011) argued that the role of institutional investors is to police global banks on their compliance to EPs.

2.5 Clean Technology Development by Corporations

2.5.1 Incentives and Constraints of Adoption

According to Knopf, Edenhofer, Flachsland, Kok, Lotze-Campen, Luderer, Popp, and van Vuuren (2010), and Pattberg (2012), the ultimate goal of the United Nations Framework Convention on Climate Change (UNFCCC) is the reduction of GHG emissions (carbon equivalents) to stable concentration levels in the atmosphere to prevent catastrophic climate conditions. Limited studies on GHG stabilisation indicated that the effect of incomplete or delayed participation for low stabilisation targets resulted in substantially higher cost of technology implementation; while most optimistic targets might even become technically infeasible with further delays (Knopf et al., 2010).

Knopf et al. (2010), Kettunen, Bunn, and Blyth (2011) suggested that global participation and cooperation was necessary to develop suitable climate policies, and institutions needed to be put in place to incentivise for the low-carbon transition, so that deep emissions reductions could be feasible. Global warming is regarded as an externality (business risk) to economic activities, but corporations are faced with exogenous carbon policy uncertainty, an indication of the propensity to delay investments in clean technology development (Amram & Kulatilaka, 2009; Kettunen, Bunn, & Blyth, 2011). The findings by Knopf's et al. (2010) study showed that carbon policy uncertainty might lead to a less competitive and more concentrated market, which is a barrier for new entrants of clean technology. The local drivers of clean technology adoption include: local weather patterns as evidence of climate change; local infrastructure; wealth and regulations that determine the local cost of adoption (Amram & Kulatilaka, 2009).

2.5.2 Market Standards and Guidelines for Corporations

According to Kumazawa and Callaghan (2012), global governments established the Kyoto Protocol as an amendment to the UNFCCC. The Kyoto Protocol is a comprehensive international agreement aimed at reducing GHG emissions globally. Researchers continued to debate the pros and cons of the Kyoto Protocol: the protocol bundles GHG into one framework; the emissions reduction targets for industrialised countries are arbitrary and not linked to production; and developing countries are still exempted from committing (Kumazawa & Callaghan, 2012).

According to Kumazawa and Callaghan (2012) the protocol has established mechanisms that allow for flexibility in meeting emissions reduction targets through engagement in emissions trading schemes (ETS), clean development mechanism (CDM), or joint implementation between participants as long as eligibility requirements are met.

2.5.3 Market and Financial Mechanisms for Corporations

Knopf et al. (2010) suggested that international financial mechanisms, either based on international carbon markets or carbon tax systems, are necessary for the climate agreement for stabilising GHG emissions. But, due to major political challenges associated with financial flows, different routes of international policy schemes can be set up in the short-term. These routes include: carbon tax systems with explicit financial transfers; international ETS systems; and other Clean Development Mechanisms (CDMs) (Knopf et al., 2010) .

The cap-and-trade market for carbon dioxide emissions is one mechanism that could enable participants to achieve the Kyoto Protocol reduction targets (Kettunen et al., 2011). These new carbon markets for emissions reduction can be used to align the costs of mandated investments in renewable technologies as credits; credits promote clean-technology adoption when used in project financing (Kettunen et al., 2011). Economic actors would argue that a carbon tax system would be more effective in regulating global carbon emissions rather the complicated ETS system, because these actors are already familiar with tax systems that regulate international trade.

2.6 Conclusion

The analysis of literature revealed some insights of research studies conducted on SRI and its practices, however most of the findings were not conclusive. This provides an opportunity for further exploratory studies. Few of the many on-going SRI research arguments are the roles and motives of institutional investors for promoting climate change mitigation through SRI practices in investment processes. Climate change and other ESG issues are considered in long-term investment decisions, but little is said in literature about short-term investment decisions.

Successful implementation of SRI for ESG sustainability requires the cooperation of institutional investors in: redefining the fiduciary duty; addressing short-termism in

investment returns; and influencing corporations in improving integrated reporting as recommended by the King III report. The scope of SRI involves integrating ESG issues in the investment process for valuation of stocks, creation of investment strategies, as well as creation of thematic funds. The focus of this literature was on climate change as a material ESG issue for consideration in investment decision-making by institutional investors.

Most studies show that SRI has focused on financial performance as a primary motive; but ethics, altruism, moral values, reputation, and self-esteem are other powerful motives that can lead to SRI by institutional investors. The motives of different types of institutional investors are affected by incentives and constraints that these investors are exposed to, and these motives determine the type of SRI strategy for adoption. SRI strategies include: financially driven, ethically driven and value ensuring strategies. Implementation of SRI strategies in the investment process involve activities such as asset allocation, executing external and internal mandates, and monitoring and controlling SRI practices.

Table 1 summarises the incentives and constraints for institutional investors to adopt SRI practices, and incorporate climate change in their investment decision-making.

Table 1: Incentives and constraints of adopting SRI and promoting climate change mitigation in investment decisions

Incentives	Constraints
Fiduciary duty – ESG performance	Fiduciary duty – investment performance
Positive long-term investment returns	Short-termism & performance measures
Positive long-term social returns	Reduced investment returns
Financial costs of climate risks	Administration cost of ESG screening
Climate disclosure information (CDP)	Climate information asymmetry
Market standards and guidelines (UNPRI, CRISA)	Herding – mainstream investing
	Regulations – on pricing climate risks

The business case of SRI to incorporate climate change is based on the idea that: climate change creates financial risks for corporations; and climate change disclosure creates financial incentives for institutional investors to incorporate climate risks in the investment process. Climate risks are categorised into four primary categories: regulatory risks, physical risks, reputational and competitive risks.

Previous studies acknowledge that SRI research is still underdeveloped, especially SRI to incorporate climate change. The need for further research is even more relevant for emerging economies that are still exempted from the Kyoto Protocol emissions target. The power possessed by institutional investors in influencing corporate behaviour towards ESG performance or promoting climate change mitigation is uncontested by most researchers. However, the extent of actions has raised concerns on the institutions' underlying motives when making investment decisions. A lot of studies recognised the need for further research in understanding the underlying motives or aspirations of institutional investors in adopting SRI practices, and promoting climate change mitigation through SRI.

Table 2 below summarises the incentives and constraints for corporations to develop clean technology, and to govern climate change and other ESG issues.

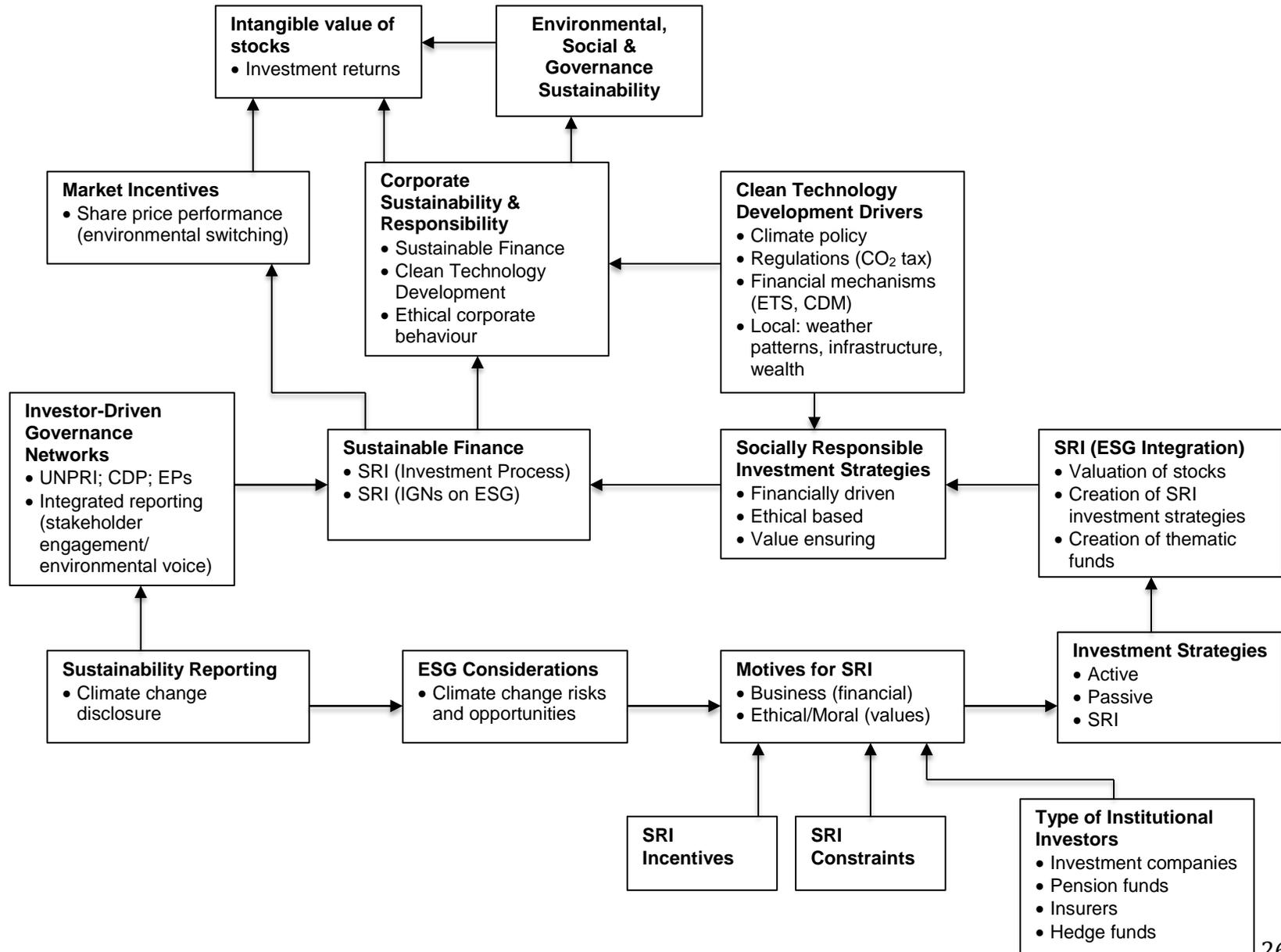
Table 2: Incentives and constraints of adopting clean technology development and governing climate change

Incentives	Constraints
Demand for sustainability reporting & climate change disclosure (CDP) by investors	Uncertainty of the global climate change policy
Exposure to climate risks	Wealth - lack of motives
Regulations - CO ₂ tax, CO ₂ credits	Costs of technology
Market standards and guidelines (EPs, UNEPFI, ClimateWise, Kyoto Protocol)	
Market and financial mechanisms (ETS, CDM)	

The overall insights from literature are summarised in a model that shows the interactions, influences, outcomes, and flows of ESG and climate change information in SRI practices by institutional investors; the model also shows information from corporates that is relevant for SRI. The model is shown in Figure 1 below.

This study contributed in extending literature of SRI to incorporate climate change in the South African asset management industry. This will involve exploring whether and how investment institutions incorporate climate change or ESG when making short-term investment decisions; exploring the underlying motives for such decisions, and understanding the necessary conditions for future motives in promoting ESG performance including climate change mitigation.

Figure 1: Interactions, influences, outcomes, and flows of information in SRI practices for climate change mitigation.



Chapter 3: Research Questions

The insights from literature were used as a basis for developing the following research questions. These research questions are guided by the findings of existing literature, this will allow for deductive analysis in this study. These questions also allow for an emerging design from the views of participants, which will allow for inductive analysis in the study. The four areas to be explored from institutional investors are incorporated in the following research questions:

3.1 Research Question 1 – Do South African institutional investors consider ESG issues when making short-term investment decisions? And is climate change part of ESG consideration?

3.1.1 How much do institutional investors understand about climate change and its impact on environmental and economic systems? And where do they acquire relevant climate change information?

3.1.2 Do SA institutional investors subscribe to responsible investment initiatives and codes?

3.2 Research Question 2 – What methods do institutional investors use to incorporate climate change risks and opportunities (or ESG issues) in the investment process? When and how is climate change (or ESG) screening done in the process?

3.2.1 When and how is asset allocation performed in the investment process? Which ESG issue is highly rated?

3.2.2 How do institutional investors balance between the clients' mandates and the internal investment philosophy during risk management and setting of investment objectives?

3.2.3 How do institutional investors monitor climate change (or ESG) practices of their investee companies or assets?

3.3 Research Question 3 – What are institutional investors' motives or aspirations for deciding to (or not to) incorporate climate change (or ESG) in short-term investments?

3.3.1 What is the extent of considering investment performance in the decision?

3.3.2 What is the extent of considering social and ethical values in the decision?

3.3.3 What is considered as current material issues for SA institutional investors and their stakeholders?

3.4 Research Question 4 – On a personal level, what are necessary conditions that would make Portfolio Managers (PMs) or Fund Managers (FMs) consider (or continue) promoting climate change mitigation in their future analysis of short-term investments?

3.4.1 Do PMs or FMs consciously incorporate climate change risks and opportunities in investment decisions at the moment?

3.4.2 How would local climate risk influence future decisions to incorporate climate change in investment analysis?

3.4.3 How would business incentives such as a resolution in climate policy and introduction of carbon tax, influence their investment processes?

Chapter 4: Research Methodology

The research methodology outlines the method used to collect, analyse, and interpret data this study. The initial decision made by the researcher was selecting an appropriate research approach for the study. Creswell (2014) suggested three key components to inform the decision on a research approach. The components were: the philosophical assumptions the researcher brings to the study; research designs (procedures of inquiry); and specific research methods of data collection, analysis, and interpretation (Creswell, 2014). These components underpinned and shaped the structure of this study (Saunders & Lewis, 2012).

4.1 Research Approach

A qualitative research approach was used to conduct this study. Qualitative research is an approach for exploring and understanding the meaning (or views) that individuals ascribe to a business problem (Creswell, 2014). There are three research approaches available for conducting research studies: qualitative, quantitative and mixed methods (Creswell, 2014 and Saunders & Lewis, 2012). The researcher's decision to select a qualitative research approach was informed by his research philosophy; research designs; and specific research methods as suggested by Creswell (2014).

4.1.1 Research Philosophy

Saunders and Lewis (2012) defined the research philosophy as the critical analysis of the fundamental assumptions or beliefs held by an individual, such as the researcher; and it contains important assumptions about the way in which researchers view the world around them. Creswell (2014) referred to the research philosophy as a philosophical worldview. The researcher believed that the best way to identify and solve a business problem is by interacting directly with the participants to explore their views. The researcher's beliefs fitted the pragmatic philosophy. Saunders and Lewis (2012) described pragmatism as a research philosophy that suggests that, a philosophy is determined by research questions and objectives; and is more likely to be guided by what method is possible for research.

Creswell (2014) supported that pragmatism emphasises the research problem, instead of methods, and uses all approaches available to understand the problem; and pragmatism is concerned with the applicability of what works to get to a solution. The

main strands of research philosophy include positivism/postpositivism, interpretivism/social constructivism, pragmatism (Creswell, 2014; Saunders & Lewis, 2012) , realism (Saunders & Lewis, 2012) and transformative (Creswell, 2014). The pragmatic approach gave the researcher the freedom to choose methods, techniques and procedures that worked at the time to collect and analyse data and helped to understand the research problem (Creswell, 2014). These assumptions underpinned the researcher's strategy in conducting the study and influenced the choice of the research design (Saunders & Lewis, 2012).

4.1.2 Research Design

The researcher used the following criteria to select an appropriate research design: interactions with the participants, exploring underdeveloped concepts and interest in the views of the participants and not previously existing data.

4.1.3 Research Methods

The researcher planned to explore the views of participants through interaction as discussed in the research philosophy and research design. The aim of the interaction was to ask questions to provide valuable insights to academic and business knowledge on the study topic. These requirements qualified the study to be conducted by qualitative methods (Creswell, 2014). The third component in Creswell's (2014) framework was the specific research methods that involved the forms of data collection, analysis and interpretation. Qualitative methods are less predetermined; use open-ended questions; data can be collected by interviews, observation, documents and audio-visual; allow for text and image analysis; and the researcher can interpret the themes or patterns that emerge from the data (Creswell, 2014). These characteristics made qualitative research methods appropriate for this study.

4.1.4 Other criteria used for selecting the research approach

Other factors that affected the decision to choose a qualitative research approach was the research problem and questions, and the personal experience of the researcher. Creswell (2014) identified the research problem, the personal experience of the researcher and the audience who receive the study report as other factors that influence the choice of selecting an approach in addition to the philosophy, design and methods. The research problem, as articulated in Chapter 1, was identified from deficiencies in the literature as discussed in Chapter 2. The topic was seen to be

underdeveloped so it qualified for a qualitative approach (Creswell, 2014). Previous studies showed that there has been a noticeable shift in SRI research towards more qualitative approaches and that only five per cent of data collections were in-depth interviews (Viviers & Eccles, 2012).

4.2 Research Design

The study was qualitative, in an exploratory design. The aim was to get in-depth knowledge or understanding of the roles and motives of institutional investors for SRI to incorporate climate change. This qualified it for an exploratory design. Exploratory studies are used to discover general information, seek new insights, and ask new questions about a topic that is not fully understood by the researcher (Saunders & Lewis, 2012). Many research designs exist, which focus on data collection, analysis, and report writing (Creswell, 2014). The researcher considered three design options as presented by Saunders and Lewis (2012); these are exploratory studies, descriptive studies and explanatory studies.

The strategy for collecting data involved conducting face-face semi-structured interviews with participants. This design strategy was motivated by the researcher's belief on the interaction with participants in order to generate knowledge, as discussed under the research philosophy. The typical ways of conducting exploratory research as described by Saunders and Lewis (2012) are researching academic literature, interviewing experts and conducting interviews. Saunders and Lewis (2012) suggested that exploratory studies are well suited to qualitative methods such as interviewing.

This qualitative exploratory study had the following characteristics that were beneficial to the researcher. Interactions between the researcher and the participants were carried out face-to-face in their natural setting (Creswell, 2014). The natural setting for this study was participants' offices. This allowed for an up-close gathering of data by talking directly to the participants in their natural setting. Interviews were conducted with participants for the main study and secondary data was reviewed, and experts interviewed to validate the findings.

The process of data collection changed when the researcher began to collect data, the questions were modified (Creswell, 2014). Creswell (2014) described this process as an emergent design, because the key idea is to learn about the problem and address

research questions from the information obtained from participants. This is the reason for conduction of semi-structured interviews by the researcher as it allows flexibility in the order of asking questions, as well as modifying these questions to fit the context. The researcher used triangulation to validate the findings using the data sources mentioned above. Triangulation is the use of two or more independent sources of data to confirm the researcher's interpretation of the findings (Saunders & Lewis, 2012). Furthermore, triangulating data is a means to seeking convergence across data collection methods (Creswell, 2014).

4.3 Scope

4.3.1 Deductive and inductive research approaches

The study combined both deductive and inductive research approaches. It has been mentioned earlier that exploratory studies could be conducted by means of researching academic literature and/or conducting interviews. Deduction aims to clarify theory at the beginning of the study (Saunders & Lewis, 2012). The relevant characteristics of deduction (Saunders & Lewis, 2012) for this study were defining research questions from existing literature, operationalising these questions in a way that answered the research questions and structuring the methodology to facilitate replication, which is important in achieving reliability. The researcher reviewed relevant investment theory and existing literature on RI and climate change mitigation to get insights about the study topic. These insights were used to design research questions and were used as a frame of reference to conduct the practical study.

During analysis themes developed from the data and the researcher determined whether more evidence was needed to support these themes, or whether more data was needed to be collected to validate the themes (Creswell, 2014). The inductive process allowed the researcher to work back and forth between themes (including emerging), data and literature until a comprehensive set of themes was established (Creswell, 2014). Saunders and Lewis (2012) argued it was a good idea to combine deductive and inductive approaches within the same study. Hence the reason for the combination of the two approaches by the researcher.

4.4 Population

The population was the South African asset management industry, which was comprised of different categories of institutional investors including asset owners, asset (investment) managers and professional service providers, as classified by UNPRI (PRI Association, 2014). Asset owners consisted of pension funds and insurance companies, while service providers of institutional investments included asset and fund managers, and consultants as categorised by the IoDSA (IoDSA, 2011). All investment institutions in SA are represented by this population and are the subject of this study. The views of these institutions helped to understand the research problem by answering the research questions. Saunders and Lewis (2012) defined a population as the complete set of group members, such as organisations and in this case these are all investment institutions that were constituents of the SA asset management industry.

4.5 Unit of Analysis

The unit of analysis was the views held by the study participants regarding the incorporation of climate change in institutional investors' short-term investment decision-making. Creswell (2014) emphasised that researchers should focus on participants' meanings. During the qualitative process, the researcher focused on understanding the meaning of the research problem held by the participants, not the meaning that the researcher brought to the study or that is expressed in existing literature.

4.6 Sampling

4.6.1 Sampling technique

Non-probability sampling techniques were applied for selecting the study sample, because an updated and complete list of institutional investors in SA was not available to the researcher. Saunders and Lewis (2012) referred to the complete list of members of the population as the sampling frame and suggested selecting a sample from this list when using probability sampling. Saunders and Lewis suggested that if the researcher did not have a sampling frame, then the sample is selected using non-probability sampling. The researcher was aware that a non-probability sampling technique does

not represent the population statistically and that non-probability samples are usually analysed using qualitative analysis techniques (Saunders & Lewis, 2012).

The main sampling technique was purposive sampling because the researcher's judgement was used to actively choose relevant participants to answer the research questions (Saunders & Lewis, 2012). Creswell (2014) agreed that a sample is identified purposively for qualitative research. The researcher purposefully selected participants that were the most competent in understanding the research problem and the research question. Saunders and Lewis (2012) suggested that purposive sampling involved selection through the use of clearly defined criteria.

The following criteria was applied in selecting a purposive sample for this study:

- The participant must be involved in portfolio management;
- The participant must be working for an investment institution in the top 20 of SA's asset managers ranked by total assets under management (AUM); and
- The institution must have been in operation for a period of at least three years.

The list of the top 20 SA asset managers ranked by total AUM are shown in Appendix 1. The researcher believes that the top 20 asset managers have the power to change the structure and the functioning of the industry. All of the asset managers in the above list were ranked in the top 20 by Alexander Forbes' (2013) survey (Alexander Forbes, 2013).

Convenience sampling complemented purposive sampling to mitigate the limited access to participants of large investment institutions, geographic constraints and the short timeframe allowed for data collection. Convenience sampling involved selecting members of the sample that were available rather than their appropriateness in answering research questions (Saunders & Lewis, 2012). The researcher considered participants from investment institutions ranked in the top 50 by total AUM.

4.6.2 Sample size

The sample consisted of seven participants and is described in Chapter 5. The sample was homogeneous because it only consisted of institutional investors in South Africa. There are various types of purposive samples including typical case, critical case, extreme case, heterogeneous, and homogeneous samples (Saunders & Lewis, 2012).

A homogeneous sample consists of one particular subgroup, providing minimum variation in the data collected, but allows for characteristics to be explored in greater depth and makes minor differences apparent (Saunders & Lewis, 2012).

Saunders and Lewis (2012) reckoned that a sample size depends on the nature of the population and it is likely to be about 10 for a homogeneous population. Creswell (2014) suggested six to eight participants for a qualitative interview and also recommended the idea of saturation; he suggested that a researcher stop collecting data when the themes are saturated – when gathering new data no longer reveals new insights. The researcher combined all these approaches.

4.7 Research Instrument

The researcher was the key research instrument involved in interviewing participants, recording data and reviewing relevant company documents. Creswell (2014) suggested that researchers are key instruments in qualitative research: they collect the data through examining documents, observing behaviour or interviewing participants. Qualitative researchers may use a protocol – an instrument for collecting data, but they do not rely on questionnaires or instruments developed by others (Creswell, 2014).

4.7.1 Data collection design

Data collection was done by conducting semi-structured interviews, taking notes and audio recording of interviews, transcribing interviews and reviewing company documents. The interviews were conducted face-to-face, which allowed the researcher to observe and note non-verbal actions of participants. This design incorporated data collection procedures and data recording procedures as detailed below.

There are four types of qualitative data collection procedures as described by Creswell (2014): qualitative observations, qualitative interviews, qualitative documents and qualitative audio and visual materials. Table 3 below details data collection types, and their advantages and disadvantages that were applied during the data collection process.

Table 3: Qualitative data collection types, options, advantages and limitations (Creswell, 2014)

Data Collection Types	Options within Types	Advantages of Type	Limitations of Type
Interviews	<ul style="list-style-type: none"> • Face-to-face 	<ul style="list-style-type: none"> • Allows researcher control over the line of questioning 	<ul style="list-style-type: none"> • Provides indirect information filtered through the views of interviewees • Researcher's presence may bias responses • Not all people are equally articulate and perceptive
Documents	<ul style="list-style-type: none"> • Public documents 	<ul style="list-style-type: none"> • Accessible at a time convenient to researcher – an unobtrusive source of data • Represents data to which participants have given attention • Data is already transcribed 	<ul style="list-style-type: none"> • Not all people are equally articulate and perceptive • Data maybe protected and unavailable to the public • Documents may not be complete, authentic or accurate

The data collection approach shown in Table 4 was used for this study

Table 4: Qualitative data collection approaches (Creswell, 2014)

Interviews
<ul style="list-style-type: none"> • Conduct a semi-structured interview, audio record the interview, and transcribe the interview.
Documents
<ul style="list-style-type: none"> • Analyse public documents (e.g. annual reports)

Semi-structured interviews were appropriate for collecting data because the researcher did not know how the participants would answer the questions, the questions were unfamiliar to the participants, and the order of questioning and the actual questions asked were varied at the beginning of the process, until the researcher understood the language and logic of the participants. Semi-structured and unstructured interviews are

sometimes also referred to as qualitative interviews (Saunders & Lewis, 2012). Saunders and Lewis (2012) described a semi-structured interview as a data collection method in which the researcher asks about a set of themes using predetermined questions, but varies the order of questions and themes covered, and some questions maybe omitted or added as appropriate.

An interview guide was developed for asking questions and recording answers during these semi-structured interviews, see Appendix 2. The researcher recorded information by making handwritten notes and by audio recording the interviews. Audio recordings were later transcribed into text in preparation for data analysis. Creswell (2014) and Saunders and Lewis (2012) suggested that researchers develop interview guides or interview protocols for qualitative interviews. A consent form was developed as part of the interview guide (see Appendix 2).

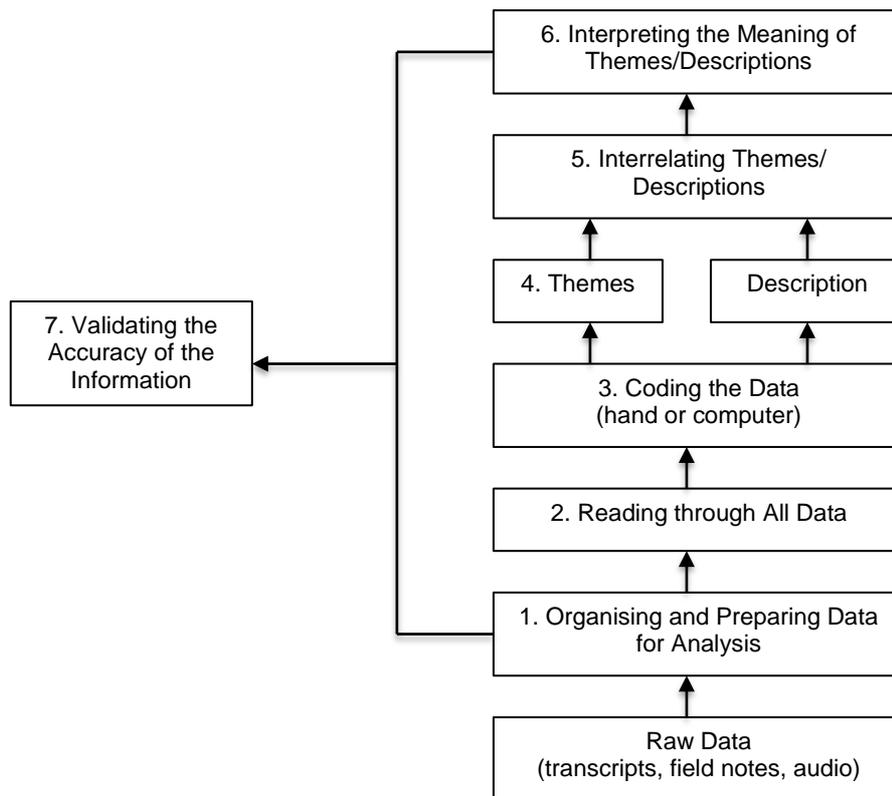
4.7.2 Pilot-test

A pilot study was conducted with a Sustainability Expert of a CSR Company and a Manager of Research of a Multi-Manager Company. Interviews were conducted with these participants using the interview guide as described above. The aims were to gain insight from experts on available industry knowledge on RI practices, to ensure that questions were relevant and understood by participants and most importantly, to use the insights to validate the findings of the participants of the main study. Saunders and Lewis (2012) recommended a pilot-test to check the validity of questions.

4.8 Data Analysis and Interpretation

An overview of the seven steps that were followed in the data analysis process as recommended by Creswell (2014) is shown in Figure 2 below.

Figure 2: Data analysis steps (Creswell, 2014)



Data analysis involved the process of preparing data for analysis, which was performed as follows:

1. All interview recordings were transcribed.
2. All transcripts were proofread while listening to interview recordings.
3. All transcripts in Microsoft Word format were read to get the general view of the data and to confirm that saturation was reached.
4. All documents were named using the participants' institutions and designations, and were uploaded into Atlas.ti for Mac 1.0 for analysis.

Data analysis was performed in Atlas.ti for Mac 1.0. The type of analysis conducted was deductive, using the codes to theory model for qualitative enquiry. This means that all emerging code groups (categories) that were created are based on the literature as covered in Chapter 2. So, each code that was created belonged to one of the code groups to be used as evidence in answering the research questions. The coding and analysis process was performed as follows:

1. Coding of quotations per document using deductive qualitative analysis as discussed above. See Appendix 3 for the codebook. These coded quotations are presented as evidence in Chapter 5 for answering research questions.
2. Creating code groups for each research question and allocating codes to these groups per document. These code groups are categories that develop into themes, which answers research questions.
3. Running code hierarchies and codes by primary document analysis queries and running quotation searches by research question to look for evidence.
4. Creating reports of codebook, list of codes groups and their members and quotations by code with comments.
5. Developing and interpreting general findings that emerge from code groups of all documents (participants) for each research question and developing and interpreting findings that emerged from insights of each participant for each research question.
6. Validating findings from expert interviews and secondary data.

Table 5 below shows the creation of code groups during data analysis. The code groups were created per research question (RQ) for each document as discussed above.

Table 5: Creation of Code Groups per RQ

Document Number	Code groups created for RQ1	Code groups created for RQ2	Code groups created for RQ3	Code groups created for RQ4
1	3	3	4	2
2	1	1	0	0
3	0	0	1	1
4	0	1	0	1
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
Total code groups	4	5	5	4

Table 5 shows that code group saturation occurred after the fourth document. The rate at which code groups were created declined sharply after coding the first document, and no new code groups were created after the fourth document as the analysis

progressed. This showed homogeneity in the findings, which enabled the development of deep insights from these findings.

4.9 Validity and Reliability

The findings of this study were validated by triangulation in two ways: verification from secondary data and verification from insights obtained from interviews with the Sustainability Expert of a CSR Company, and the Manager, Research of a Multi-Manager Investment Company. The companies' websites were used as secondary data to verify institutional investors' investment philosophies with regards to ESG and climate change strategies. Participation in RI initiatives was also verified. The interview discussions with the Sustainability Expert who is an advocate of CSR, and the Manager, Research who selects Asset Managers, discussed the state of responsible investment for climate change in South Africa conducted in line with the research questions.

This was the process of triangulation as recommended by Saunders and Lewis (2012). In addition to triangulation, Creswell (2014) suggested that the researcher incorporates multiple strategies of validity, such as discussing contrary information to the themes to add to the credibility of findings. Creswell (2014) suggested that using a developed interview guide is helpful for reliability and value of data sources. Interview transcripts were checked and mistakes were cleared.

4.10 Research Limitations

The findings of a qualitative study in an exploratory design are not conclusive. Triangulation was performed to address some of the research limitations. Investment philosophies were reviewed and compared to participants' answers. Future research was also recommended to examine related subjects that were beyond the scope of this study, but that would add value to the concept.

The purposive sample was not representative of the population due to the use of non-probability sampling. This purposive sample was based on the researcher's judgement and was thus subjected to researcher bias, which might have affected the validity of findings. The interview guide was used consistently to ensure objectivity in the process. The sample was also homogeneous which did not allow for variance in results. Future

research was recommended to extend the subject to specific actors in the industry to make the findings more conclusive.

Participants were affected by response bias; some participants answered the questions before they actually understood the context and some were unfamiliar with the practices of their organisations. The researcher reviewed secondary information on companies' websites to confirm the results. The researcher might have been affected by interviewer bias during the interviews, which might have influenced interpretations. The interview guide was used consistently across all interviews with minimal deviations.

A consent form for participation was signed between the researcher and his participants to ensure that data is not compromised. Capturing data incorrectly can also compromise its quality. A digital recording device was used to support transcripts from interviews, and the recordings on this were later transcribed.

Chapter 5: Results

The results of this qualitative study are presented in this Chapter. The results and emerging findings are depicted in accordance with the structure of the research questions. The presentation of results includes an overview of the sample, including data collection and its reliability, the main results per research question and the validation of findings.

5.1 Sample Description

A total of seven interviews were conducted with participants working for institutional investors in the South African asset management industry. The demographics of participants are presented in Table 6 below, and show the type of institutional investor, designation/role, and experience of participants.

Table 6: Demographics of participants

Type of institutional investor	Designation/role	Experience
Investment Company A	Business Development Manager	18 years
Investment Company B	Fund of Funds Manager	19 years
Insurance and Investment Company A	Portfolio Manager	3 years
Investment Bank A	Portfolio Manager	8 years
Investment Bank B	Leader, Portfolio Management	5 years
Investment Bank C	Head, Portfolio Management	8 years
Insurance and Investment Company B	Portfolio Manager	8 years

The sample is representative of the type of investment institutions operating in the South African asset management industry. The years of experience of these participants has contributed to the reliability of the data collected. The sample was guided by the sampling criteria as discussed in Chapter 4, but the limiting factor was the accessibility and availability of participants. See Table 7 below for the comparison of the planned sample and the actual sample achieved.

Table 7: Planned sample versus Actual sample

Criteria	Planned	Actual
Sample size	6 to 10	7
Portfolio management	All involved	All involved
Institution's operation period	Min of 3 years	More than 3 years
Top 20 by AUM	All	4 out of 7

Table 7 shows that most of the planned sampling criteria were met, except that only four of the seven participants feature in the top 20 list of asset managers in SA ranked by value of AUM. The three participants that do not feature in the top 20 include Investment Bank B, Investment Bank C, which are relatively large in size of their AUMs, and Investment Company A, which has a relatively small size of AUM.

Data were collected from 14 August 2014 to 4 September 2014. All seven semi-structured interviews were conducted face-to-face with the participants at their company offices. All interviews were audio recorded. The biggest challenge was securing interviews with Portfolio Managers. Most Portfolio Managers were busy addressing the impact that the collapse of African Bank had on their portfolios during this period.

The threat to the reliability of data was the context in which the phenomenon of climate change is included in the investment process, rather than being considered under the ESG basket. The researcher explained the reasons for considering climate change separately and used the interview schedule consistently to improve the reliability of data. Data saturation occurred after the fourth interview, when the researcher realised that there was no new data being revealed around the phenomenon of incorporating ESG and/or climate change in the investment process.

5.2 Data Analysis

Data analysis was performed as outlined in Chapter 4. This involved conducted semi-structured interviews with seven participants, analysing data on Atlas.ti for Mac 1.0; validating findings from companies websites and conducting validating interviews with a Sustainability Expert of CSR Company, and Manager, Research of a Multi-Manager Investment Company.

5.3 Results for Research Questions

5.3.1 Research Question 1 – Do South African institutional investors consider ESG issues when making short-term investment decisions? And is climate change part of ESG consideration?

The evidence for answering this research question is in the level of knowledge of climate change risks and opportunities for short-term investments, the usage of ESG and climate change sources of information, and the extent of participation to RI standards, codes and guidelines.

Four general categories (code groups) emerged from the analysis, which contribute to the evidence for answering this research question. The categories and their descriptions are shown in Table 8 below.

Table 8: General categories for RQ1

Category	Description
1	ESG/climate change consideration in the investment process
2	Sources of ESG/climate change information used
3	Climate change knowledge
4	Responsible investment codes and guidelines endorsed

The list of code groups reflected in Table 8 and their members are presented in Appendix 4. Some of the relevant quotations by code for RQ1 are presented in Table 9 below in support of these themes.

Table 9.1: Code – ESG in the investment process

Quotation Nr: 4 Source: Portfolio Manager_Investment Bank_A.docx Has Comment: no	Okay just as corporate governance as a whole, together, we do consider it on a short-term basis, right, in terms of being able to take tactical allocations of buy in share, investing in a company or not. So that does take priority. It never used to be as much of a priority as it was in the past but now slowly but surely it's become more and more of an important factor, but now when you chop it up into climate change and corporate governance on companies themselves, then corporate governance on companies, as I said has now come up, but climate change is not on the radar. It's not on the radar at all, because the thing about it is that it does not affect investors or shareholders directly now. It hasn't been shown to affect anyone now.
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Table 9.2: Code – Annual reports information

Quotation Nr: 41 Source: Leader, Portfolio Management_Investment Bank_B.docx Has Comment: no	Yes, sure. So based on the disclosures in the annual reports, I'm sure they would get their information. They're not going to go to these companies on an ongoing basis requesting feedback, because it's not high-up on the agenda, it's time consuming. I think if there's issues in the report that they, that are not clear or if they feel something has changed, then they could approach a company but it's probably done once or twice a year.
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Table 9.3: Code – Climate change awareness

Quotation Nr: 17 Source: Portfolio Manager_Insurance & Investment Co._B.docx Has Comment: no	But you don't need, you know you don't need a lot evidence, to realise that you are seeing weather patterns that are changing very progressively.
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Table 9.4: Code – Signatory to UNPRI

Quotation Nr: 14 Source: Portfolio Manager_Insurance & Investment Co._B.docx Has Comment: no	It's very tricky so as a business signatory to a lot of organisations, I do mainly the UNPRI.
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Table 9.5: Code – Signatory to a code

Quotation Nr: 18 Source: Head, Portfolio Management_Investment Bank_C.docx Has Comment: no	CRISA is the one that we subscribe to.
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Table 10 presents the summary of insights of the interviewees obtained from each participant for this research question.

Table 10: Summary of insights of the interviewees for RQ1

Participant	Insights
Investment Co. A	<ul style="list-style-type: none"> -The company has an ESG policy but it is not a signatory to UNPRI. Climate change is not considered in the investment process, and so the company does not participate in RI initiatives for climate change. -The only knowledgeable person about ESG is the Chief Investment Officer.
Investment Co. B	<ul style="list-style-type: none"> - There is a dedicated ESG team in the company that looks at these issues in their portfolios, but the participant does not consider it in his funds. Climate change does not even come to mind. The participant did not know if the company is a signatory to any RI codes and guidelines.
Insurance & Investment Co. A	<ul style="list-style-type: none"> - Energy efficient buildings are in the top agenda for the company in order to minimise the strain put on the environment. The participant's portfolio is direct property, and they are members of the Green Building Council of South Africa.
Investment Bank A	<ul style="list-style-type: none"> - ESG is considered in investments as part of corporate governance, but climate change is not on the radar because it hasn't shown to affect shareholders and investors directly for now. The participant was not sure if the company is a signatory to any RI codes or guidelines. - Climate change information is obtained from the media, such as YouTube.
Investment Bank B	<ul style="list-style-type: none"> - The company considers ESG in the investment process; there is even a socially responsible fund (run by another Division) that invests into socially responsible companies. However, climate change is not very high on clients' list in the company and in the participant's portfolio. So, there is almost zero consideration. The participant was not sure if the company is a signatory to any RI codes and guidelines. - The sources of information include newspapers, financial journals, but not the CDP even though the participant has heard about it.
Investment Bank C	<ul style="list-style-type: none"> - The company considers ESG and climate change in the investment analysis, but it is difficult to say if it is short-term or not. The company endorses the CRISA code. - Sources of information include sustainability reports, stockbroker reports, research reports, and CDP information.
Insurance & Investment Co. B	<ul style="list-style-type: none"> - The company considers ESG and climate change in the investment analysis for short-term investments. The company is a signatory to UNPRI, and endorses the CRISA code. - Sources of information include integrated reports, scientific reports, and CDP information.

Table 11 shows the results of validating ESG considerations and participation in RI initiatives by the participants.

Table 11: Validation of ESG in the investment philosophy and RI initiatives

Participant	Investment Philosophy	Endorses CRISA	Signatory to UNPRI
Investment Company A	No ESG information	No	No
Investment Company B	ESG considerations	Yes	Yes
Insurance and Investment Company A	ESG considerations	Yes	Yes
Investment Bank A	ESG considerations	Yes	Yes
Investment Bank B	ESG considerations	Yes	Yes
Investment Bank C	ESG considerations	Yes	Yes
Insurance and Investment Company B	ESG considerations	Yes	Yes

Table 12 shows the summary of validating insights of the expert interviewees.

Table 12: Summary of validating insights of the expert interviewees for RQ1

Participant	Insights
Sustainability Expert	<ul style="list-style-type: none"> - The impression is that climate change is rarely incorporated in SA, which is fairly consistent with the international investment community. Only a few insurance companies mainly from the European Union (EU) and the United States of America (USA) are taking it seriously due to disaster insurance claims from exposure to physical climate risk, and due to fairly clear and strong policies on climate change. - International guidelines include ClimateWise for insurance companies, UNPRI, and CDP. ESG and climate change information can be obtained privately from MSCI, and publicly from the CDP.
Manager, Research	<ul style="list-style-type: none"> - Asset Managers are generally not comfortable with the ESG space. They have conflicting views on climate change within their businesses, and so they do not talk about climate change issues and how it impacts their portfolios in the presentations. However, they realise the importance of environmental and social (E & S) issues. - Information on exposure of Asset Managers portfolios to ESG and climate change risks is obtained from MSCI. Asset Managers obtain E&S information from sustainability reports of companies.

5.3.2 Research Question 2 – What methods do institutional investors use to incorporate climate change risks and opportunities (or ESG issues) in the investment process? When and how is climate change (or ESG) screening done in the process?

The evidence for answering this research question is in the selection and allocation of stocks and assets using ESG/climate change screening, the balance between the

clients' mandate and the investment philosophy of the company in setting investment objectives, and the monitoring of ESG/climate change practices of investee companies or assets.

Five general categories emerged from the analysis. The categories and their descriptions are shown in Table 13 below.

Table 13: General categories for RQ2

Category	Description
1	ESG/climate change screening during valuation of stocks/assets
2	Stock/Asset selection
3	Portfolio construction mandate
4	Stock/Asset allocation
5	Monitoring ESG/climate change practices of investee companies

The list of code groups as shown in Table 13 and their members are indicated in Appendix 4. Relevant quotations by code for RQ2 are provided in Table 14 below in support of these themes.

Table 14.1: Code – Climate change screening

Quotation Nr: 28 Source: Portfolio Manager_Insurance & Investment Co._B.docx Has Comment: no	No we don't screen negatively so we don't avoid because you know there's non-compliance. Where the other factors, or valuations, or thematics are with other redeeming features which still makes the investment case worthwhile, we'll still address but then as a matter will engage to say look we're not happy with what you're doing in climate change or in this particular areas for example your social, your corporate social investment, you know will want to see more attention given to them. Because by investing where there are other deeming factors it give us a lot more power to actually, you know to actually knock on the door and actually be heard because if you just avoid a negative discreet and not invest, the chances of actually realising a positive change in the investment thesis may not, may be missed.
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Table 14.2: Code – Stock/asset selection

Quotation Nr: 43 Source: Business Development Manager_Investment Co._A.docx Has Comment: no	so it's value, quality and then return – VQR. We will do some forward looking, some number crunching, some expected return.
Quotation Nr: 7 Source: Portfolio Manager_Insurance & Investment Co._B.docx	So this is what becomes our quality framework. So you'll see here for example to come back to your question on climate change. For us it's not just climate change but it's the whole ESG type of sort of question that is coming up.

Table 14.3: Code – Client’s portfolio request

Quotation Nr: 59 Source: Business Development Manager_Investment Co._A.docx Has Comment: no	Yes, if the client came to us and said, ‘Build us a climate change value portfolio, globally,’ we’d be able to screen for it. If they did that within the South African market, I suspect that the universe of stocks that would comply with that kind of screen would be fairly limited. I’m guessing in that. As I said, I’m not an analyst, but I’m guessing at that, but globally, they’d have a lot more companies that you could potentially invest in.
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Table 14.4: Code – Client’s return objectives

Quotation Nr: 25 Source: Portfolio Manager_Insurance & Investment Co._B.docx Has Comment: no	I think the mandate is very, by the time you get a mandate it very clear what the expectations are from the client. Unfortunately 9 out of 10 times those expectations are financial so you need to meet the benchmark and return above a certain sort of hurdle rate. Which means then that, you know some of the other considerations which I think are key in the marking value over the long-term, may need to be compromised because we also have short-term objectives to meet from a client point of view.
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Table 14.5: Code – ESG verification

Quotation Nr: 13 Source: Portfolio Manager_Insurance & Investment Co._B.docx Has Comment: no	It is a current issue, the bigger challenge with the whole ESG space is verification. So a lot of the info that we look at, the source of information, is in the integrated reports that the companies produce. So at the moment there’s a lot of information that is being disclosed but the challenge for us is how do we then verify that? And actually that past objecting judgement as to whether this company is actually doing something or not. So we’re finding that there is general awareness, a little company that say yes they are aware, and some said they’re doing or not doing. But for us to actually go and audit so to speak that’s where the challenge is.
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Table 14.6: Code – Monitoring ESG practices

Quotation Nr: 20 Source: Portfolio Manager_Investment Bank_A.docx Has Comment: no	The only time that we’ll monitor it is when there are really results. So... you read annual reports.
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Table 15 presents the summary of the insights from the interviewees for this research question.

Table 15: Summary of the insights from the interviewees for RQ2

Participant	Insights
Investment Co. A	<ul style="list-style-type: none"> - ESG should be considered under quality in the Value, Quality and Return (VQR) investment framework. There is no climate change screening in this investment philosophy. - The greater portion of setting investment objectives is with the company; there is little involvement from clients. Most clients expect financial goals and not ESG.
Investment Co. B	<ul style="list-style-type: none"> - The ESG team is supposed to do ESG screening in their valuation of stocks, it is part of their mandate and have to present reports to the board and investors. However, the

	<p>participant does not do it in his funds, which are unit trusts.</p> <ul style="list-style-type: none"> - Institutional clients like pension funds have an input in benchmarking asset classes to be constructed in a portfolio, but individual clients take unit trusts that are offered.
Insurance & Investment Co. A	<ul style="list-style-type: none"> - Corporate governance and compliance to regulations is up to date, especially in the property industry. - Valuations of property investments include location and energy efficiency. But green buildings come at a premium, which needs to be within an economic case. - The client, which is the Company Group, has a major influence in the selection of assets, and promotes green buildings.
Investment Bank A	<ul style="list-style-type: none"> - ESG is used for tactical allocation of buying shares, however it is still an option rather than a critical factor. Corporate governance never used to be a priority before, and it is now considered be an important factor, but is still ranks low in terms of decision-making. However, there are examples of shares that collapsed because of poor governance. - Clients are advised to consider long-term issues when selecting shares for their portfolios. - There is no appropriate method of monitoring ESG practices of companies; it can only be monitored on annual reports or via the media when there are complaints about company violating the environment.
Investment Bank B	<ul style="list-style-type: none"> - There is no SRI or climate change screening when analysts select stocks. The key determinant during valuation is the return expected from an asset over a certain period. - A portfolio is constructed according to needs basis of the client and a company benchmark on the mix of asset classes, but probably 85 – 90 % is of the company's discretion. Clients' involvement is usually only upfront. - The assumption is that the ESG team only monitors ESG practices from the annual reports, but they don't go to companies looking for feedback. If there are concerns from the reports then they engage companies.
Investment Bank C	<ul style="list-style-type: none"> - The company considers the negative and positive impacts of climate change during valuation, in certain industries such as mining, petroleum and energy in SA. For the negative, the cost of possible carbon taxes gets considered, which affects the attractiveness of investments, but no exclusion has ever happened based on this. - The investee company's environmental friendliness, social development plan, and the cost of fixing climate/environmental damage are considered to make a decision of whether to invest or not (screening). ESG issues are all equally important. - Currently there are no mandate restrictions on climate change by clients, but if there were, the company would consider them. - The company reads sustainability reports to monitor ESG practices, if there are concerns then the investee company would be engaged to explain. But there is no capacity to go check for compliance.
Insurance & Investment Co. B	<ul style="list-style-type: none"> - The intrinsic value of a share, quality of a company, and thematic are considered during valuation. Under the quality framework, it is not just climate change, but also the whole ESG basket including other non-financial issues that get considered. Thematics include industry themes like regulations that might enhance or hurt the investment case.

	<ul style="list-style-type: none"> - The clients' expectations are clear upfront, and unfortunately nine out of ten expectations are always financial. The company however advises its clients on long-term issues, and on the philosophy of long-term investment, even if it seems wrong in the short-term. - Investee companies are engaged if there concerns from the sustainability reports, especially on the governance side. The company does not screen negatively, it aims to drive positive change in the investment thesis using their shareholding powers.
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Table 16 shows the summary of validating insights of the expert interviewees.

Table 16: Summary of validating insights of the expert interviewees for RQ2

Participant	Insights
Sustainability Expert	- Insurers assess physical risks of climate change with a material impact to their businesses (financial losses), and then price the risk into disaster insurance premiums.
Manager, Research	<ul style="list-style-type: none"> - The Multi-Manager selects Asset Managers based on ESG scoring, governance being a key area; and uses proxy voting and shareholder engagement to pressure them to show evidence on how they have incorporated ESG in their portfolios. The Multi-Manager also requests Asset Managers to engage investee companies in order to drive positive change towards E & S performance. However, no Asset Manager has ever reported back on climate change. - Asset Managers generally say they incorporate ESG, but there is still lack of evidence on how they bring it into the investment process from the E & S perspective.

5.3.3 Research Question 3 – What are institutional investors' motives or aspirations for deciding to (or not to) incorporate climate change (or ESG) in short-term investments?

The evidence for answering this research question is in the business case: investment performance, ethical or moral values, material issues affecting businesses and incentives and constraints of responsible investment to incorporate climate change.

Five general categories emerged from the analysis. The categories and their descriptions are shown in Table 17.

Table 17: General categories for RQ3

Category	Description
1	Responsible investment motives
2	Responsible investment incentives
3	Responsible investment constraints
4	Material business issues
5	Type of institutional investor

The list of code groups as shown in Table 17 and their members are reflected in Appendix 4. Relevant quotations by code for RQ3 are provided in Table 18 below in support of these themes.

Table 18.1: Code – Business sustainability

<p>Quotation Nr: 44 Source: Leader, Portfolio Management_Investment Bank_B.docx Has Comment: no</p>	<p>I think if you're doing it from the Company point of view, it's sustainability, okay firstly of our environment and the resources and what we have available to us, but also sustainability of the organisation. Because I think the importance will grow going forward and you'd rather get in now and make small incremental changes than having to make a big change down the line. Hindsight I think it's, so its sustainability on two fronts right, and then I think the other factor is also peer pressure, because everybody's doing it.</p>
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Table 18.2: Code – Investment performance

<p>Quotation Nr: 49 Source: Fund of Funds Manager_Investment Co._B.docx Has Comment: no</p>	<p>So our horses are, every Sunday, you can go into the newspaper and see, your unit trust, how has it done. I mean it's, we have a price, every single day of your unit trust you have a price, performance. The numbers are always there. So we are in a horse race. How our funds are performing against Coronation, Stanlib, Investec, you name it. Otherwise money goes out of our funds to theirs, so you say, listen I'm not investing here anymore, look at this poor performance, damn it, I'm going into another company. So, that's our main driver, in terms of that's our business, nuts and bolts. All the other issues are hygiene factors.</p>
<p>Quotation Nr: 32 Source: Portfolio Manager_Insurance & Investment Co._B.docx Has Comment: no</p>	<p>I think there's more than enough research and evidence to suggest that if you focus on non-financial factors in addition to financial factors. Companies that do well you know, in the non-financial matters over time tend to outperform, so if you are a good citizen as a corporate, you look after your stakeholders, you look after your employees, and everyone else, you tend to attract a premium rating which effectively means it lowers your cost of capital, and you've come back to what I was trying to show earlier on you know ROE. A company that's got lower cost of equity, the chances of a better ROE, which is what we're ultimately after in terms of shareholders. So in my view there's a definite link between non-financial factors and returns of the shareholders.</p>

Table 18.3: Code – Responsible citizenship

<p>Quotation Nr: 4 Source: Leader, Portfolio Management_Investment Bank_B.docx Has Comment: no</p>	<p>Exactly, the sustainability report, and that obviously affects some industries more than others, like mining. I think that's where it started. The pressure started there and it spilled over into other sectors and what can we do about it, and I guess it's also about keeping it sustainable and I think it's good for corporate's images now you know.. If you're doing something that's good for the environment, assisting with climate change, lowering emissions, that kind of thing, you're basically doing your bit to improve your image you know. You're seen as a responsible citizen. So I think it's one of those things where everybody can benefit, as long as we all partake in it.</p>
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Table 18.4: Code – Industry regulation/legislation

Quotation Nr: 63 Source: Head, Portfolio Management_Investment Bank_C.docx Has Comment: no	Yes. It comes back to our performance and I won't have business. So I think anything where it will directly impact us will have to be either legislation-driven or industry-driven. Unless the client specifically asks us and they factor that into account.
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Table 18.5: Code – Financial benefits

Quotation Nr: 49 Source: Leader, Portfolio Management_Investment Bank_B.docx Has Comment: no	It will hurt you in the short-term financially. Look I think socially there's a benefit throughout. In the short-term there's less gains and in the long-term there's more gains right , but financially there's initially, would say there isn't a gain, there's a loss, and thereafter you'll see the financial benefits just from other factors. The fact that you are a sustainable entity that people look up to, perceptions of you are better, you could draw investments based on that you know.
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Quotation Nr: 27 Source: Fund of Funds Manager_Investment Co_B.docx Has Comment: no	Financial. Totally, financial, because you know, climate is something that, as far as I understand, doesn't even enter into our business. I mean, other than as I say when it's affecting the economies of the world, and therefore start to encroach on our area. Otherwise if you had to draw a circle of asset management business, and you had a circle of climate change, I don't think the two cross each other at all. I don't think the circles intersect.
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Table 18.6: Code – Short-termism

Quotation Nr: 25 Source: Portfolio Manager_Investment Bank_A.docx Has Comment: no	You must remember you see things from profit and gain and loss. So unfortunately you and must remember because the markets are very short-term thinking now even though the whole basis of markets or listing a company was the fact that it was meant to be long term. So you give your money to a company who uses it for a long-term basis. It's then it's another form of funding besides getting a loan, getting money from a bank. Companies are meant to think on a very long-term basis but that has changed because now we live in a world where especially with American companies where it's all about quarterly reports or half yearly earnings. So the minute you don't produce your earnings every 6 months or every quarter the money moves out of your share and mostly you must remember that the management, their wealth is tied in the fact that they've got share options in the company. So therefore for them the most important thing is very short-term. So we've become a very short-term thinking society.
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Table 18.7: Code – Climate change uncertainty

Quotation Nr: 35 Source: Portfolio Manager_Investment Bank_A.docx Has Comment: no	You see there's a lot happening. There's still people who believe that climate change does not happen. So that's a problem because it delays resolutions being passed, because the argument of the fact that it's still no, there's still that argument, and I mean there's lots of discussions, and because of the discussions the general public are still confused about it. They don't know whether it's on and off, on and off, and because of that you cannot push things through. And hence it's going to delay the
	process, delay the process. We already start seeing the effects with the weather patterns in the Philippines, all of that are effects of global climate change. However, no one is actually sitting and saying guys all of these weather patterns are happening. Why are they all happening? It's because of the fact that maybe it's an indication of global climate change.
	So the general public is still confused. That's a big thing, because the minute you get that confusion out the quicker we'll get to actually putting, forcing governments for them to force the globe to put it on.

Table 18.8: Code – Financial markets versus economy risk

<p>Quotation Nr: 36 Source: Portfolio Manager_Insurance & Investment Co._B.docx Has Comment: no</p>	<p>Yes you can't have a financial market because remember financial market is almost like a heartbeat of the economy. You cannot have that at an all-time high day in and day out. But you're sitting with a what 25% official unemployment number of which 40 plus is youth unemployment so, you know, what does it mean, if you fast-forward 10 years now and you have those numbers it just means that it can't be a good environment for growth. And therefore businesses and investors should be worried as to where growth is going to come from, given that there is no underlying growth in the economy.</p>
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Table 18.9 Code – Pension funds

<p>Quotation Nr: 11 Source: Business Development Manager_Investment Co._A.docx Has Comment: no</p>	<p>A lot of investment managers ... it's different when you actually have the money. So, from a pension fund perspective, they might approach this from a very different basis. It's their money. They have a very, very long-term view on their investment returns.</p>
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Table 19 presents the summary of insights of the interviewees for this research question.

Table 19: Summary of insights of the interviewees for RQ3

Participant	Insights
Investment Co. A	<ul style="list-style-type: none"> - The motives are winning business and delivering on investment performance. Selecting stocks based on ethical values is seen as a trade-off challenge. - A compelling RI investment thesis would incentivise the incorporation of ESG into the investment process. - Constraints include the contradictions in investment research on the impact of RI on investment returns. Value needs to be realised within two to three years on a portfolio. It is also costly to subscribe to RI codes and guidelines, only pension funds can afford because they have the money.
Investment Co. B	<ul style="list-style-type: none"> - The motives are making money and producing competitive returns for clients. Otherwise clients will move their money to competitors. It is however preferable to invest in socially conscious and responsible companies. - If climate change incidents started having a direct effect on economies, companies, shares' performances, then these would incentivise consideration in investment decisions.
Insurance & Investment Co. A	<ul style="list-style-type: none"> - The motives are that, the company wants to be seen as corporate and socially responsible because it has a large number of clients. - This portfolio is also driven by investment performance, in order to deliver superior returns better than other competing investment boutiques within the Group Company. - The constraints are that, green technology is expensive, it does not completely solve the problem, it is not fully developed, and it is bad for aesthetics. Liquidity is also a challenge for direct properties, so development decisions need to consider that.

	<ul style="list-style-type: none"> - The cost of development is passed onto tenants, which creates occupancy risk. There are also municipal risks with the rise of electrical tariffs, which increases the cost of occupancy.
Investment Bank A	<ul style="list-style-type: none"> - The culture of investment banks is performance driven, so there is limited time to do certain duties. If a certain duty does not contribute to the bottom line (profits) unfortunately no time can be spent on it because it is an add-on. - The consideration of ESG in the investment decision is very altruistic; it is based on a premise that a socially conscious company is likely to be a good guardian to one's assets, than really saying it makes the world a better place. - The constraints are that, there is no evidence that anybody considers climate change. It is not profitable. And governments are not buying into it; they have to find a resolution on climate change policy. The investment society uses short-term performance measures, and climate change does not produce short-term returns, so money moves to competition if there is under-performance. - Material business risks include: technology risk on business models and competition e.g. crowd funding; societal risk if the economy is bad; and Black Economic Empowerment (BEE) compliance risks.
Investment Bank B	<ul style="list-style-type: none"> - The most important motive is sustainability, of both the business and the environment. In order to grow it is necessary to make small incremental changes now, than big changes later. Similar to BEE it is becoming more competitive, and finding opportunities, as well as social aspects; it would be costly in the short-term, but becomes more beneficial in the long-term from the sustainability point of view. - The other motive is that everybody is doing it, or peer pressure, companies want to be seen as leaders by their competitors (corporate image). - The constraint is that ESG management is costly; similar to BEE, it is a cost to existing shareholders. - Material business risks include micro-lending risk, filling the gap created by African Bank and BEE compliance risk.
Investment Bank C	<ul style="list-style-type: none"> - The motive is business sustainability; companies that damage the environment will eventually damage themselves. A good sustainable development plan is required for the environment. - The cost of fixing climate/environmental damage is considered because they affect profitability. This is linked to legislation costs for carbon emitters that exceed legal limits. Climate change would also be considered if it became an immediate problem and had a tangible impact on companies. - Constraints include the delay by the government to bring in the carbon tax as previously communicated three years ago; it is possibly coming in 2016.
Insurance & Investment Co. B	<ul style="list-style-type: none"> - Companies that do well in non-financial matters (ESG/climate change) in addition to financial factors tend to out-perform in the long-term. Also being a good corporate citizen is a motive for considering ESG issues. - The biggest challenge is the verification of ESG information in sustainability reports. It is not transparent and adequate. Even the CDP information cannot be seen as verification. - Industry themes like the carbon tax would incentivise considering the cost in

	<p>companies that exceed carbon emissions levels, which affects investment attractiveness.</p> <ul style="list-style-type: none"> - ESG investment research suggests that there is evidence of out-performance for companies that consider both financial and non-financial goals. - Material business issues include the poor link between a performing financial industry versus an underperforming SA economy with no growth; this is not a good environment for a sustainable business.
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Table 20 shows the summary of validating insights of the expert interviewees.

Table 20: Summary of validating insights of the expert interviewees for RQ3

Participant	Insights
Sustainability Expert	<ul style="list-style-type: none"> - The biggest motive is business continuity for insurers due to the material impact of physical climate risk, which results in significant financial losses through disaster insurance claims. Reputation, compliance, societal concerns, and stakeholder relations are relatively small motives. - SA insurers are focusing on short-term performance because: there is no pressure from clients and governments; there are unclear sets of local policies; and the Global Deal on Climate Change is delayed.
Manager, Research	<ul style="list-style-type: none"> - Asset Managers need to deliver alpha for their clients. Clients are very short-term focused and exact pressure on performance versus long-term E & S issues. - The challenge is access to accurate and transparent information on E&S including climate change disclosures. - The financial impact of E&S is not clear, but Asset Managers do not think it enhances returns.

5.3.4 Research Question 4 – On a personal level, what are necessary conditions that would make Portfolio Managers or Fund Managers consider (or continue) promoting climate change mitigation in their future analysis of short-term investments?

The evidence for answering this research question is in the level of consciousness in considering climate change risks and opportunities in short-term investment analysis, the level of awareness of exposure to local climate change risks and opportunities and the level of interest shown in climate change policies and other regulations.

Four general categories emerged from the analysis of all data, which contributed to the evidence in answering this research question. These categories and their descriptions are shown in Table 21 below.

Table 21: General categories for RQ4

Category	Description
1	Conditions required to influence the consciousness of investment decisions
2	Exposure to climate risk
3	Resolution on climate policy and other regulations
4	Conclusive research on the reality of climate change

The list of code groups as shown in Table 2 and their members are shown in Appendix 4. Relevant quotations by code for RQ4 are provided in Table 22 below in support of these themes.

Table 22.1: Code - Capitalism

Quotation Nr: 36 Source: Portfolio Manager_Investment Bank_A.docx Has Comment: no	Number two – global climate change – in order for it to do well or in order for it to be practical it needs to speak the language of capitalism. So therefore as I’ve said before it needs to move away from being an ethical decision to the fact that it now hurts the balance sheet. And the minute that happens it will be taken very seriously. So in Australia it was taken very seriously and then obviously the corporations lobbied for it to be kicked out, and was kicked out and now they’re making more money you see. So that’s why you must make sure that it becomes a very serious objective and then people then concentrate on it. That’s what I’ve been thinking about for some time.
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Table 22.2: Code – Carbon tax

Quotation Nr: 52 Source: Fund of Funds Manager_Investment Co._B.docx Has Comment: no	The cost factor. Obviously for something like carbon taxes is a very unpleasant cost factor that hit companies like Sasol quite severely and started affecting the profitability of a company like Sasol, cut back on their profits, their dividends that they pay to shareholders. So, that would be a serious issue if that is, or when that is adopted because it hurts company profits. It’s a cost factor that comes in that they have to try and cut back on.
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Table 22.3: Code – Investor pressure

Quotation Nr: 51 Source: Portfolio Manager_Insurance & Investment Co._B.docx Has Comment: no	So the other very big challenge is that the actual asset owners are still a bit removed from the process. So you know the Unions, the Pension Funds, the guys who actually represent the people whose money we manage you know, there’s still a big gap of understanding some of the issues because for them its all about you know, returns for the members, investor retirement equity and all of those things.
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Table 22.4: Code – Climate change research

<p>Quotation Nr: 65 Source: Business Development Manager_Investment Co._A.docx Has Comment: no</p>	<p>Okay, at the moment I'm aware, in my personal capacity, I'm aware of climate change as a social or societal impact factor. It does not form part of my investing approach, and I would need a fairly compelling investment thesis to incorporate it. That's my personal capacity.</p>
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Table 22.5: Code – Proper wake up call

<p>Quotation Nr: 43 Source: Portfolio Manager_Insurance & Investment Co._B.docx Has Comment: no</p>	<p>This is the think you know, it sort of false sense of comfort, to say yes, no it's getting warm a bit here but it's only you know, maybe 1 or 2 degrees and therefore it's in the range of randomness. So I think there is that false sense of security and perhaps that's why you're not seeing much but we almost need a proper wake up call to say, hey, you know.</p>
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Table 22.6: Code – Industry regulation/legislation

<p>Quotation Nr: 55 Source: Leader, Portfolio Management_Investment Bank_B.docx Has Comment: no</p>	<p>I think if it goes higher-up on the list of all listed companies. I know the big listed companies do disclose it, but if it goes higher -up the list and it's disclosed by every company. So it almost has to become a JSE reporting requirement for every company listed on the exchange.</p>
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Table 23 presents the summary of insights of the interviewees for this research question.

Table 23: Summary of insights of the interviewees for RQ4

Participant	Insights
Investment Co. A	- A compelling investment thesis based on investment returns; and drives from clients are needed in order to consciously include climate change in the investment process.
Investment Co. B	- Climate change would be consciously considered in investment decisions if starts affecting Fund Manager's job, fund performance, economic performance, and performance of shares. - Scientific evidence is required to motivate the case for climate change in the investment process. If facts show that temperatures are rising, there will be physical impact, the cost of doing business will rise, and then it will be considered. - Carbon taxes would be an important cost factor to most heavy polluting companies, but it failed in Australia. So, there is a necessity for reducing emissions through clean technologies.
Insurance & Investment Co. A	- The property industry is highly regulated, so if the Green Building Council of South Africa can push for legislation on green buildings, it would be easier for the industry to cooperate and support green initiatives.
Investment	- If global climate change would shift from being an ethical choice to being capitalist

Bank A	<p>and affect the bottom line, then corporates would consciously adopt it.</p> <ul style="list-style-type: none"> - A resolution on government legislation would force corporates to adopt climate change consideration. The carbon tax system was tried in Australia, but corporates lobbied against it and it failed. - There need to be proof and agreement from scientist that climate change is happening. And the society, government, financial institutions, corporations, and everybody needs to jump and address the issue.
Investment Bank B	<ul style="list-style-type: none"> - If climate change disclosure became a JSE reporting requirement for all listed companies, then it would be considered in investment analysis as factor, but not necessary a deciding factor. And also if enough information was available to guide decisions to incorporate it or not. - Carbon taxes carry cost to companies, so it would have an influence in investment decisions.
Investment Bank C	<ul style="list-style-type: none"> - The implementation of carbon tax will definitely have a negative impact on companies' profitability, so it would be included in the investment analysis. But, the secondary effect is that all competing nations must have it in order to compete fairly, that's what Australia got wrong and their carbon tax system was scrapped. - Climate change considerations must either be legislation-driven or industry-driven because Asset Managers are driven by performance, one can't be "holier-than-thou" - If the client specifically asks for it to be taken into account.
Insurance & Investment Co. B	<ul style="list-style-type: none"> - ESG information needs to be transparent and verifiable. - A proper wake up call in SA can re-affirm scientific evidence of climate change, because South Africans have a false comfort in that disasters are Asian, European or American issues. - Carbon tax would bring cost to companies, so it would encourage proper valuation of carbon emissions for affected companies.

Table 24 shows the summary of validating insights of the expert interviewees.

Table 24: Summary of validating insights of the expert interviewees for RQ4

Participant	Insights
Sustainability Expert	<ul style="list-style-type: none"> - Local climate change damaging events would raise awareness. - The global deal on climate change, which will not include a price on carbon until all major regions (including USA) have set up ETSs to enable an estimate the global price on carbon. Carbon tax is a preferable and simpler alternative to ETS that government can impose to control carbon emissions (e.g. Germany; Australia failed).
Manager, Research	<ul style="list-style-type: none"> - Recognising that climate change is happening slowly and will affect things like agriculture. Engagement on the topic is necessary for Asset Managers to consciously think about.

Chapter 6: Discussion of Results

The purpose of Chapter 6 is to address the need for research as identified in the research problem in Chapter 1 and to answer the research questions in Chapter 3, which were based on literature deficiencies of Chapter 2. The discussion is achieved by interpreting the research findings in Chapter 5 in light of the literature discussed in Chapter 2. The results are discussed per research question as they were presented in Chapter 5. High-level insights from the data are also added to enhance the value of the discussion.

6.1 Research Question 1 – Do South African institutional investors consider ESG issues when making short-term investment decisions? And is climate change part of ESG consideration?

Two findings emerged from this exploratory enquiry and are discussed below.

6.1.1 ESG and climate change incorporation in investment decision-making and participation in RI initiatives.

The results of category 1 and category 4 in Table 8, and insights from Table 10 are the basis for the findings below.

The results illustrate that ESG is incorporated in long-term investment decision-making, but it is not emphasised for short-term considerations because all institutions consider themselves long-term investors. Climate change risks and opportunities are not considered in both long- and short-term investment decisions. However, a few institutional investors are showing interest in incorporating climate risk in their long-term investment portfolios. The results are validated from Table 12, which presume that institutional investors are generally not comfortable discussing ESG in their current portfolios, but do realise the long-term importance of E&S issues. Peiris and Evans (2010) surmised that SRI has grown to be an important segment of the investment market. The findings of this study contradict this literature; SRI appears to be in its early development stages.

Table 12 also confirms the impression that climate change is rarely incorporated in investment decisions in SA, but only a few international insurance companies are interested because of their exposure to physical climate risks (disasters). There is only one South African insurance company that is a member of ClimateWise as shown in Table 12. The findings support the literature on the development of ClimateWise for insurance companies as suggested by Thistlethwaite 2012.

The results show that South African institutional investors drive ESG sustainability through participation in international and local RI codes and guidelines, by being signatories to UNPRI and endorsing CRISA. The results are validated by public information as shown in Table 11. The findings support the literature by Matthews and Rusinko (2010), which suggested that the financial industry and its institutions consider ESG factors in investment decision-making for advancement in sustainable development. The literature on UNPRI guidelines and the CRISA code is supported by the findings. Butler and Wong (2011) suggested that RI has internationally been bolstered by UNPRI guidelines. ESG development in South Africa was bolstered by the release of the CRISA code (le Roux, 2010).

In conclusion, therefore, this sample of institutional investors does not incorporate ESG issues including climate change risks in short-term investment decision-making. However, some SA institutional investors are signatories to UNPRI and endorse the CRISA code, this is seen as a development in driving ESG sustainability. The researcher suggests that as much as South African institutional investors have declared long-term commitment to addressing ESG challenges, at the moment it seems to be used as a marketing tool to sell their products. There is a high level of disconnection between stated ESG and climate change mitigation interests, and the evidence of integration into their portfolios. Pockets of ESG and climate change knowledge and responsibilities lie with certain individuals or teams, it has not filtrated through to all portfolio levels within organisations.

6.1.2 Climate change awareness and sources of information

The results of category 2 and category 3 in Table 8, and insights from Table 10 are the basis for the findings below.

The results show that SA institutional investors are generally aware of the impact of climate change on the environmental and economic systems, and do understand costs associated to damages, but it is still seen as a long-term problem. Institutional investors obtain ESG and climate change information of their potential or investee companies mainly from disclosures made in sustainability reports, this is only when financial results get published, once or twice a year. The findings support the literature by Matthews and Rusinko (2010) on the importance of linking sustainability performance to financial valuation into financial analysts' analytical framework. Eccles and Saltzman (2011) also argued that a sustainable society could be achieved through integrated reporting.

The results show that other sources of information include media, scientific reports, stockbroker reports and the CDP information, which is publicly available but rarely used by these institutions. Table 12 confirms the use of sustainability reports for E&S information and the availability of CDP information. The findings support the argument by Harmes (2011) and Pattberg (2012) that investors did not effectively use climate change information disclosed through the CDP.

In conclusion, therefore, some SA institutional investors understand climate change risks and are aware of its negative impact on business. The information on exposure of companies to climate risks is obtained from sustainability reports when financial results are released. These samples of institutional investors seldom use the information from the CDP. The researcher recognises the risks with climate change disclosures in sustainability reports and the CDP that are available to institutional investors once or twice a year. This does not help in informing investment decisions throughout the year, and also, changes and poor performance on ESG and climate change behaviour can only be realised when financial results become available.

6.2 Research Question 2 – What methods do institutional investors use to incorporate climate change risks and opportunities (or ESG issues) in the investment process? When and how is climate change (or ESG) screening performed in the process?

Three findings emerged from this exploratory enquiry and are discussed below.

6.2.1 ESG and climate change screening during valuation and selection of stocks/assets.

The results of category 1 and category 3 in Table 13, and insights from Table 15 are the basis for the findings below.

The results show that valuations of stocks and assets involve the assessment of intrinsic value, risk and quality of a company, expected returns and industry thematics. This is the framework followed by most institutional investors to select stocks and assets. ESG considerations are tactically used to assess risk and quality of the investee company in order to inform share-buying decisions, however, it is used as an option rather than a critical factor. The findings support the literature by de Graaf and Slager (2009) that suggested that SRI is used in the investment process for valuation of securities. The valuation is done with the aim of determining intrinsic value, which is consistent with Gregory-Allen, Shawky, and Stangl (2009), Bettman, Sault, and Schultz (2009), and Sullivan (2010) on trying to determine the intangible value of stocks.

The results show that institutional investors score and screen investee companies in terms of their ESG performances, with governance weighed as a more important ESG factor. This sample of institutional investors has never excluded a company due to their poor ESG performance. E&S issues, including climate change, are seldom considered during the scoring and screening of companies. The findings contradict the literature by Capelle-Blancard and Monjon (2012), which suggested that, responsible investors tend to favour stocks of firms engaged in best practices with regards to environmental sustainability, community relations and that are likely to promote shareholder engagement. This sample of institutional investors is seen to be mostly concerned about the intrinsic value of stocks.

Insights from Table 16 show that asset managers generally say they incorporate ESG, but there is still a lack of evidence on how they bring it into the investment process, and it appears that no asset manager has ever reported back on climate change. Table 16 also shows that only a few institutional investors, such as insurers, assess the physical risks of climate change with a material impact to their businesses and try to price the risk into disaster insurance premiums.

In conclusion, therefore, this sample of institutional investors perform ESG screening during valuation of companies, as part of the risk and quality framework to select

stocks and assets. Investee companies are scored and screened in terms of their ESG performances, with governance weighed as a more important ESG factor. E&S issues including climate change are seldom considered during the scoring and screening of companies.

6.2.2 Stock/asset allocation and portfolio construction

The results of category 3 and category 4 in Table 13, and insights from Table 15 are the basis for the findings below.

The results show that stocks/assets are allocated into a portfolio using both the investment philosophy and the clients' mandates. The clients' mandates include expectations; benchmarks on the mix of asset classes and sometimes restrictions are imposed on portfolios. Almost all clients expect financial goals and not ESG goals to be met. Institutional investors' duties are then to advise clients to consider long-term issues when considering stocks/assets to go into portfolios through their investment philosophies. There are currently no ESG mandates and no mandate restrictions on climate change by clients.

Clients' involvement is usually only upfront during the setting of investment objectives, and the control or decisions of portfolio management are at the discretion of asset managers most of the time. The findings support the literature by Richardson (2011) that suggested that, trustees are traditionally not obliged to engage with beneficiaries, but can be pursuant to specific legislation. This is evident from the results on the level of involvement of the clients.

In conclusion, therefore, the clients' or beneficiaries' involvement in setting investment objectives and constructing portfolios is minimal, and only happens at the beginning. Furthermore, almost all clients expect financial goals and no ESG goals to be met. Portfolios are thus managed at the full discretion of institutional investors and they have the power to integrate long-term (negative) externalities like climate change in the investment process, in order to realise long-term return/risk goals.

6.2.3 Monitoring ESG/climate change practices of investee companies

The results of category 5 in Table 13, and insights from Table 15 show are the basis for the findings below.

Results show that there is no appropriate method of monitoring ESG practices of companies, no technology available to monitor carbon emissions and no capacity to verify whether investee companies are addressing ESG challenges. Institutional investors use annual sustainability and integrated reports to monitor ESG practices, or via media releases on companies. If there are concerns in sustainability reports regarding their ESG practices or performances, investee companies are engaged and asked to explain the non-conformance. Insights from Table 16 show that multi-managers use proxy voting and shareholder engagement to pressure asset managers to show evidence on how they have incorporated ESG in their portfolios. Asset managers are also requested to do due diligence and engage investee companies in order to drive positive change towards E&S performance.

The findings support the two-staged process as proposed in literature. The promotion of climate change mitigation by institutional investors would happen via a two-staged process (Harmes, 2011): using substantial shareholding to pressure corporates to disclose their exposure to climate risk, as explained by Cotter and Najah (2012); and then incorporating climate risks into their investment decision-making through environmental switching and environmental voice (Harmes, 2011). The findings only support the use of environmental voice, which is shareholder engagement, but disagree with environmental switching that is the switching of investments because of poor ESG performance.

In conclusion, therefore, there are thought to be no appropriate methods of monitoring ESG practices. The only tool is reviewing ESG and climate change information disclosed in sustainability reports and engaging with investee companies if there are issues or concerns.

6.3 Research Question 3 – What are institutional investors’ motives or aspirations for deciding to (or not to) incorporate climate change (or ESG) in short-term investments?

Four findings emerged from this exploratory enquiry and are discussed below.

6.3.1 Motives of practicing RI to incorporate climate change

The results of category 1 in Table 17 and insights from Table 19 are the basis for the findings below.

The results show that the three most important motives of practicing RI to incorporate climate change are business sustainability, investment performance and corporate citizenship. In terms of business sustainability, results show that ESG is similar to BEE; it is becoming more competitive in finding opportunities and addressing social aspects. This would be costly in the short-term, but becomes more beneficial in the long-term from the sustainability point of view. Insights from Table 20 suggest that asset managers need to deliver alpha (investment returns) for their clients, but the biggest motive is business continuity especially for insurers who are susceptible to significant financial losses through disaster insurance claims resulting from physical climate risks.

The findings support the literature on the materiality of climate change on to businesses as argued by Pattberg (2012) in that climate change has become a key business risk. It is widely acknowledged that climate risks translate into financial costs for corporates and these climate risks fall into the following four primary categories:

- Regulatory risk - corporations with significant GHG emissions face risk from new regulations at both national and international level;
- Physical risk – intensity and frequency of severe weather conditions such as floods, droughts, sea-level rises, and storms;
- Reputational and competitive risk – threat for corporations that miss the opportunity for innovative behaviour and products (Harmes, 2011; Pattberg, 2012).

However, this literature recognises business risks in terms of financial costs and profitability. The researcher suggests that it should be added and emphasised that business sustainability refers also to the change in business models, business continuity, availability of clients and availability of products, which is the whole ecosystem of asset management.

The results suggest that the culture of the investment community is performance driven, that is making money and producing competitive returns for clients. If certain duties such as climate change screening do not contribute to the bottom line (profits),

then no time will be spent on them because if a portfolio under-performs, clients move their money to competitors. However, a few institutional investors believe that investee companies that do well in non-financial matters (ESG/climate change) tend to financially out-perform in the long-term. The findings support the literature on the focus of SRI to financial performance. Capelle-Blancard and Monjon (2012) concluded that advocates of SRI usually consider good financial performance as a likely incentive to promote SRI. Most studies show that climate governance by institutional investors is usually profit motivated rather than for social sustainability (MacLeod & Park, 2011).

The results suggest that corporate citizenship enhances the corporate image; an institutional investor would be seen as corporate and socially responsible to its large client base, and would also be seen as a leader by its competitors. The results show that the ethical case of RI related to climate change seems to be weak; Table 20 suggests that compliance, societal concerns and stakeholder relations are relatively small motives. The findings support the literature on the importance of reputation as suggested by Capelle-Blancard and Monjon (2012) that altruism, reputation and self-esteem are other powerful motives that can lead to socially responsible investing by corporates. The findings also support archival research done by Capelle-Blancard and Monjon (2012) showing that most articles of SRI focus on financial performance and only few of them are concerned with ethics, altruism or moral values.

In conclusion, therefore, the three most important motives for this sample of institutional investors for practicing RI to incorporate climate change are business sustainability, investment performance and corporate citizenship. Social concerns and ethical beliefs of institutional investors are relatively small motives. The researcher realises that the ethical case is an adaptive challenge for institutional investors in the short-term, because they do not believe that incorporating climate change produces returns in the short-term.

6.3.2 Incentives driving RI to incorporate climate change

The results of category 2 in Table 17, and insights from Table 19 are the basis for the findings below.

The results show the incentives that drive RI to incorporate climate change, these include:

- The potential for out-performance in both financial and non-financial goals including ESG sustainability;
- Climate change incidents having a direct and immediate impact on economies, markets, companies, and share performances;
- Peer pressure, if everybody starts doing it;
- Industry regulations; and
- Government legislation such as, legislation costs and the costs of fixing climate/environmental damage that affects profitability and carbon taxes introduce costs for the biggest emitters and will affect investment attractiveness.

The findings support the literature suggesting that financial benefits incentivise SRI practices. Harmes (2011) argues that the business case for climate change is based on the idea that climate risks create financial costs for corporations and that disclosure of these climate risks will create market incentives for institutional investors. The study by Peiris and Evans (2010) found that there are higher earnings expectations for stocks with high ESG rating; these better returns are arguably attributed to by the low operational and reputational risks and reduced information asymmetry between the institutional investor and company (de Graaf & Slager, 2009).

In conclusion, therefore, institutional investors are incentivised to drive RI for its potential financial benefits, either in a form of out-performance in returns, or climate change costs such as climate damage, industry regulations and legislation including carbon tax. Secondary incentives included societal sustainability and peer pressure from competition.

6.3.3 Constraints inhibiting RI to incorporate climate change

The results of category 3 in Table 17, and insights from Table 19 are the basis for the findings below.

The results show constraints that inhibit RI to incorporate climate change, these include:

- The contradictions in investment research on the impact of RI on investment returns;
- ESG management is costly, similar to BEE, it is a cost to existing shareholders;

- Short-termism of the investment society on performance measures, climate change is not seen to produce short-term returns and value needs to be realised within two to three years on a portfolio;
- Lack of evidence that anybody considers climate change;
- Delays by local governments to implement the carbon tax as previously communicated three years ago, and delays by international governments to find a resolution on climate change policy;
- Green technology is expensive for physical assets. It does not completely solve the problem because it is not fully developed, and it also bad for aesthetics; and
- The biggest challenge, according to some interviewees, is the verification of ESG information and climate change disclosures in sustainability reports. These are neither transparent nor adequate. The CDP information cannot be seen as verification.

Insights from Table 20 show that institutional investors are focusing on short-term performance because there is no pressure from clients and governments; there is no clear set of local policies; and the global deal on climate change is delayed. Table 20 also indicates that the challenge for asset managers is access to accurate and transparent information on E&S including climate change disclosure.

The findings support the argument that empirical analysis has not been conclusive on the relationship between SRI and investment returns (Peiris & Evans, 2010). The following constraints are also consistent with literature: fiduciary duties, short-term investment returns and administrative costs of screening companies prevent the implementation of SRI (Jansson et al., 2011; Richardson, 2011; Vakhidova, 2012). The findings support Vakhidova (2012) concerning the lack of consistency and transparency with the current system of reporting. However, institutional investors are not effectively using information from the CDP (Harmes, 2011).

In conclusion, therefore, there are constraints that inhibit RI to incorporate climate change, these include: the contradictions in investment research on the impact of RI on investment returns; cost of climate change screening; short-termism and fiduciary duties; lack of peer pressure; delayed local legislation; and the delayed global deal on climate change.

6.3.4 Type of institutional investor and other material business issues

The results of category 4 and category 5 in Table 17, and insights from Table 19 are the basis for the findings below.

The results show material business issues that different types of institutional investors are exposed to in variable degrees, these include:

- Perceptions by asset managers that, adoption of RI codes and guidelines is costly, and only pension funds and other asset owners can afford it because they have money;
- Technology risk on business models resulting in competition, for example crowd funding and micro-lending;
- BEE compliance risk;
- The poor link between a performing financial market versus an underperforming SA economy with no growth and deteriorating socio-economic issues, this is not a good environment for sustainable businesses;
- The costs of property development are passed on to tenants, which creates occupancy risk in addition to municipal risk such as increases in electricity tariffs, which increases the cost of doing business.

The findings support the argument by Harmes (2011) that the four main categories of institutional investors have different investment motives and experience different constraints that may, or may not allow them to incorporate climate change into the investment process. These categories include: Investment/Mutual Fund Companies, Pension Funds, Insurers and Hedge Funds (Harmes, 2011).

In conclusion, therefore, climate change is one of the material business risks, which needs to compete to be prioritised amongst other business risks. Different types of institutional investors are exposed to material business risks in variable degrees. Other material business risks include technology, BEE compliance, social and economic risks.

6.4 Research Question 4 – On a personal level, what are necessary conditions that would make Portfolio Managers or Fund Managers consider (or continue) promoting climate change mitigation in their future analysis of short-term investments?

Two findings emerged from this exploratory enquiry and are discussed below.

6.4.1 Necessary conditions to consciously consider climate change in short-term investment decisions

The results of category 1, category 2, and category 4 in Table 21, and insights from Table 23 are the basis for the findings below.

The results show that there are necessary conditions for climate change to be consciously considered in future short-term investment analysis, these include:

- Scientific consensus on the climate change debate and a proper wake up call (climate incident) in SA will re-affirm the realities of climate change;
- A compelling investment thesis based on investment returns and climate change costs inherent in business performance. This means RI for global climate change should shift from being an ethical choice to being capitalist and start affecting the bottom line;
- Pressure is required from clients and the industry needs to cooperate; and
- Climate change disclosures need to be verifiable and accessible.

The findings support literature in that successful implementation of SRI requires the cooperation of institutional investors to improve SRI reporting regime (Vakhidova, 2012). In addition, pressure from clients is required as noted by Richardson (2011) that the lack of unanimity among beneficiaries on ESG issues make it difficult for trustees (institutional investors) to respond to the will of beneficiaries, and also leads to disagreements on how to address social concerns such as the threat of climate change.

The findings also support literature in that physical climate risks such as changing weather patterns, are seen to create real financial costs for corporations and thus an incentive to incorporate climate change into investment decision-making (Harmes,

2011; Pattberg, 2012). The findings are also consistent with the suggestion that it is local drivers such as worsening weather patterns that encourage corporates to adopt clean technology, these drivers include: local weather patterns as evidence of climate change, local infrastructure, wealth and regulations that determine the local cost of adoption (Amram & Kulatilaka, 2009).

In conclusion, therefore, the necessary conditions to consciously consider climate change in short-term investment analysis include: a compelling investment thesis based on returns or costs, investor pressure and industry cooperation.

6.4.2 Industry regulations and legislation on climate change policies

The results of category 3 in Table 21, and insights from Table 23 are the basis for the findings below.

The results show the necessary incentives required from the financial industry and government legislation to drive RI to incorporate climate change in the short-term, these include:

- Regulating climate change disclosure to be a mandatory JSE reporting requirement for all listed companies;
- Cooperation from the society, government, financial institutions and corporates to acknowledge and address climate change;
- Legislation on carbon tax will have a cost factor, and incentivise heavy carbon polluters to reduce emissions.

The findings support Eccles and Saltzman (2011) in suggesting that since 2011 South Africa is the only country that has mandated integrated reporting as a listing requirement at the JSE. De Graaf and Slager (2009) also suggest the need to have market standards in order to achieve market efficiency. The findings are consistent with literature in that the size of the equity market implies that institutional investors need to cooperate (de Graaf & Slager, 2009) and reform the fiduciary duty (Richardson, 2011).

Insights from Table 24 also show that necessary conditions include; local climate change damaging events, the global deal on climate change, the carbon tax system that is a preferable and better alternative to the ETS system and engagement by all stakeholders on the topic of climate change. The findings also support the literature on

the necessity for a resolution in global climate policy and international financial mechanisms. Climate change risks and opportunities are also dependent on the climate policy debate; however, it is still important for institutional investors to address climate change in investment processes (Sørensen & Pfeifer, 2011). Knopf et al. (2010) suggested international financial mechanisms to be set up in the short term. These include carbon tax systems, ETS systems and other CDMs.

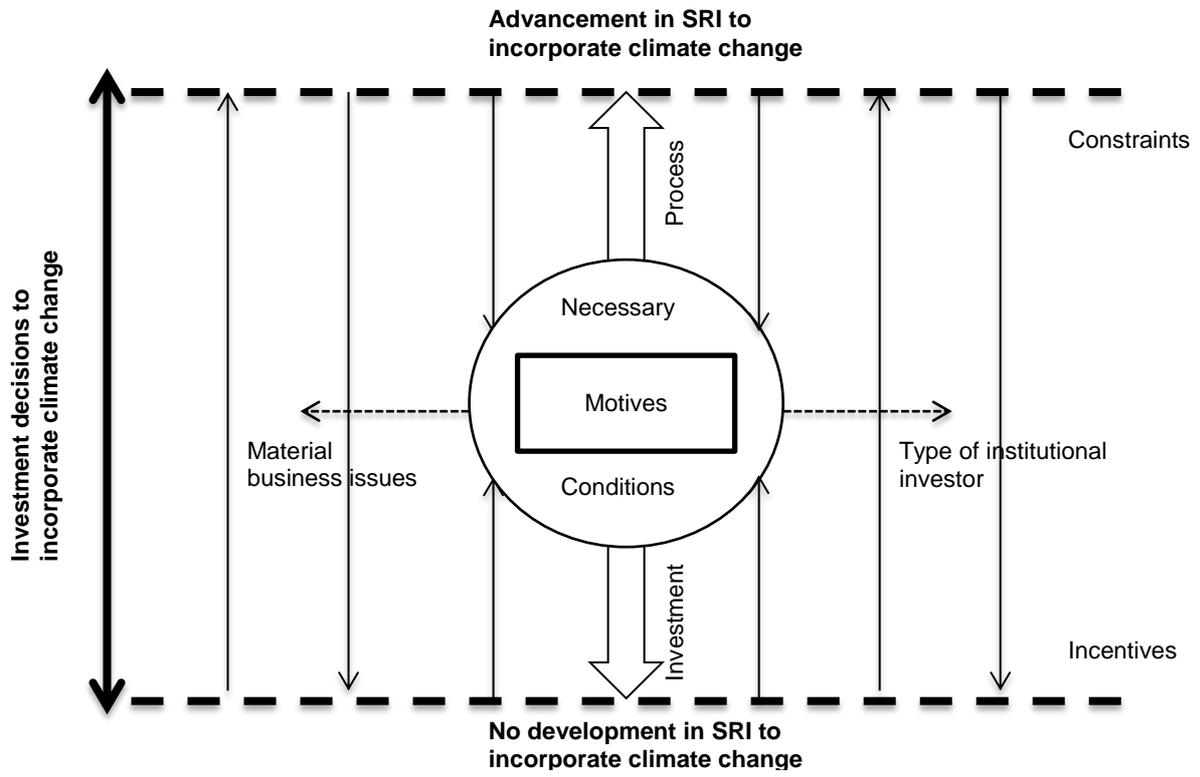
In conclusion, therefore, the findings suggest that industry regulations such as mandatory climate change disclosure by all JSE listed companies, legislation such as carbon tax and the global deal on climate change, and stakeholder cooperation would positively encourage the incorporation of climate change in short-term investment analysis.

6.5 Conclusion

The findings show that advancements in SRI to incorporate climate change depend on the underlying motives of institutional investors, which are influenced by other business conditions. The model on the drivers of investment decisions to incorporate climate in Figure 3 below demonstrates how the relationship between the motives, incentives, constraints, investment process, necessary conditions, type of institutional investor and material business issues influences investment decisions to incorporate climate change. The motives at the core of the model determine the type of SRI strategy to be implemented in the investment process. The investment process will drive investment decision-making towards progression in SRI to incorporate climate change or no developments in SRI to incorporate climate change.

The motives are influenced by constraints that push investment decisions towards no development in SRI to incorporate climate change (down), and incentives that push investment decisions towards advancements in SRI to incorporate climate change (up). Different types of institutional investors are exposed to incentives and constraints in variable degrees and are also affected by different material business issues. This means that some institutional investors would be affected by certain constraints and incentives, and some would not; also, certain material business issues would affect investors differently. This relationship is shown with sideways arrows in the model, indicating the position of investment decisions and exposure to different incentives and constraints.

Figure 3: Drivers of investment decisions to incorporate climate change



Chapter 7: Conclusion

The purpose of this research study was to explore the underlying motives of South African institutional investors for the incorporation of climate change in their short-term investment decision-making. This involved exploring:

- Whether SA investment institutions integrate ESG issues and consider climate change in their short-term investment decisions;
- How ESG and climate are integrated in the investment process;
- Why are they doing it (or not doing it), and what incentives and constraints affect these decisions?
- What would be the necessary conditions for climate change to be consciously considered in short-term investment analysis?

This was achieved through a qualitative exploratory research study that interviewed seven participants involved in portfolio management in the South African asset management industry. Chapter 7 summarises the key research findings that were discussed in detail in Chapter 6 and highlights the academic contribution of the research findings. In addition this chapter discusses the managerial implications of the research findings, makes recommendations for future research and reaches a conclusion on the research topic.

7.1 Summary of Key Research Findings

7.1.1 ESG and climate change incorporation in investment decision-making and participation in RI initiatives.

This sample of institutional investors does not incorporate ESG issues including climate change risks in short-term investment decision-making. However, some SA institutional investors are signatories to UNPRI and endorse the CRISA code, this is seen as a development in driving ESG sustainability. Peiris and Evans (2010) reckoned that SRI has grown to be an important segment of the investment market. The findings of this study disagree with this literature, as SRI appears to be in its early development stages.

The findings support the literature on the development of ClimateWise for insurance companies as suggested by Thistlethwaite (2012). The literature on UNPRI guidelines

and the CRISA code is supported by the findings (Butler & Wong, 2011; le Roux, 2010).

7.1.2 Climate change awareness and sources of information

Some South African institutional investors understand climate change risks and are aware of its negative impact on business. The information on exposure of companies to climate risks is obtained from sustainability reports when financial results are released. This sample of institutional investors seldom uses the information from the CDP. The findings support the literature by Matthews and Rusinko (2010) on the importance of linking sustainability performance to financial valuation into financial analysts' analytical framework. The findings support the argument by Harmes (2011) and Pattberg (2012) that investors do not effectively use climate change information disclosed through the CDP.

7.1.3 ESG and climate change screening during valuation and selection of stocks/assets.

This sample of institutional investors performs ESG screening during valuation of companies, as part of the risk and quality framework to select stocks and assets. Investee companies are scored and screened in terms of their ESG performances, with governance weighed as a more important ESG factor. The E&S issues, including climate change, are seldom considered during the scoring and screening of companies.

The findings support the literature by de Graaf and Slager (2009) that suggested that SRI is used in the investment process for valuation of securities. The findings disagree with the literature by Capelle-Blancard and Monjon (2012), which suggested that, responsible investors tend to favour stocks of firms engaged in best practices with regards to environmental sustainability, community relations and that are likely to promote shareholder engagement. This sample of institutional investors is seen to be mostly concerned about the intrinsic value of stocks.

7.1.4 Monitoring ESG/climate change practices of investee companies

There are thought to be a few appropriate methods of monitoring ESG practices. One of the tools is reviewing ESG and climate change information disclosed in sustainability

reports and engaging with investee companies if there are issues or concerns. The findings only support the use of environmental voice (Harmes, 2011), which is shareholder engagement, but disagree with environmental switching (Harmes, 2011), which is switching of investments because of poor ESG performance.

7.1.5 Motives of practicing SRI to incorporate climate change

The three most important motives for this sample of institutional investors for practicing RI to incorporate climate change are business sustainability, investment performance, and corporate citizenship. Social concerns and ethical beliefs of institutional investors are relatively small motives. The researcher realises that the ethical case is an adaptive challenge for institutional investors in the short-term, because they do not believe that incorporation of climate change produces returns in the short-term.

The findings support the literature on the materiality of climate change in businesses as argued by Pattberg (2012) in that climate change has become a key business risk. However, this literature recognises business risks in terms of financial costs and profitability. The researcher suggests that it should be added and emphasised that business sustainability refers also to the change in business models, business continuity, availability of clients and availability of products, which is the whole ecosystem of asset management. The findings support the literature on the focus of SRI to financial performance (MacLeod & Park, 2011). The findings reinforce the literature on the importance of reputation as suggested by Capelle-Blancard and Monjon (2012).

7.1.6 Incentives driving RI to incorporate climate change

Institutional investors are incentivised to drive RI for its potential on financial benefits, either in a form of out-performance in returns, or climate change costs such as climate damage, industry regulations and legislation including carbon tax. Secondary incentives include societal sustainability and peer pressure from competition.

These findings support the literature suggesting that financial benefits incentivise SRI practices (Harmes, 2011). Peiris and Evans (2010) suggested that there are higher earnings expectations for stocks with high ESG rating.

7.1.7 Constraints inhibiting RI to incorporate climate change

There are constraints that inhibit RI to incorporate climate change, these include the contradictions in investment research on the impact of RI on investment returns; cost of climate change screening; short-termism and fiduciary duties; lack of peer pressure; delayed local legislation; and the delayed global deal on climate change. The findings sustain the argument that empirical analysis has not been conclusive on the relationship between SRI and investment returns (Peiris & Evans, 2010). These constraints prevent the implementation of SRI (Jansson et al., 2011; Richardson, 2011; Vakhidova, 2012).

7.1.8 Necessary conditions to consciously consider climate change in short-term investment decisions

The necessary conditions to consciously consider climate change in short-term investment analysis include a compelling investment thesis based on returns or costs, investor pressure and industry cooperation. These reinforce the literature on the requirements for unanimity among beneficiaries (Richardson, 2011) and evidence required on the positive relationship between SRI and investment returns (Peiris & Evans, 2010).

7.2 Academic Contribution of the Research Findings

The research findings have contributed to academic literature on the need for research that was recommended by Harmes (2011). The overall argument asserted by Harmes (2011) regarding the business case for climate change was that carbon disclosure is unlikely to create real financial incentives for promoting climate change mitigation through share price performance. Harmes (2011) recommended future research to assess existing evidence to confirm or repudiate his analysis and that the assessment should show whether institutional investors incorporate climate risks in their investment decision-making. It is suggested from these findings that this sample of South African institutional investors do not incorporate climate risks in their investment decision-making.

The argument by Harmes (2011) and Pattberg (2012) is also validated that institutional investors do not effectively use climate change information disclosed through the CDP in SA in this case. The findings have also validated the activities involved in the investment process when implementing SRI strategies, but literature on how to implement value-adding SRI strategies in the investment process is relatively scarce to date (de Graaf & Slager, 2009).

The research findings have contributed to academic literature in trying to understand the underlying motives of institutional investors to practice SRI for climate change; the need for research on the subject was recommended by many researchers, such as Harmes (2011), Vakhidova (2012), Capelle-Blancard and Monjon (2012), and Pattberg (2012).

7.3 Managerial Implications of the Research Findings

The research findings imply that institutional investors have under-delivered on driving positive change towards ESG performance, especially climate change. This is an opportunity for taking leadership and capturing the first-mover advantage on promoting SRI to incorporate climate change. This could be accomplished by being open about the journey of considering climate change in the investment process, by sharing challenges faced by institutions, so that investors can make informed buying decisions or even assist in addressing these challenges. The attitude of responses towards climate change was of concern from the research findings, so there is an opportunity for educating employees, investors and society on the importance of driving ESG performance.

The strategic selection of stocks or assets using ESG scoring does not do justice to E&S issues. Governance has been acknowledged as an important issue that attracts attention and it has clear guidelines from the King III report and other JSE listing requirements. The E&S issues are ignored or are over-shadowed by governance when institutional investors make assessments, and so they pay little attention to them. The recommendation is to unbundle ESG issues during scoring and allocate weightings relative to materiality on investment returns. This is an opportunity to identify and engage on relevant issues with potential investee companies.

7.4 Recommendations for Future Research

The research findings of this qualitative exploratory enquiry are not conclusive. There are opportunities for future research to provide more evidence on the research findings. The results suggested that there are a few institutional investors that have started considering climate risks in their long-term investment analysis. A quantitative study can be conducted for future research to determine the number of climate-focused portfolios in the SA asset management industry, and also determine the size or value of these portfolios compared with the overall size of portfolios in the industry. It would also be of interest to determine what is considered a minimum investment period for climate-focused portfolios.

Global insurance companies have formed ClimateWise to govern climate change for insurance companies. Only one South African insurance company is a member of this organisation. Future research should explore or try to understand why other South African insurance companies have not yet joined this network. A qualitative enquiry is recommended to explore the motives, incentives and constraints for participation in ClimateWise or similar organisations. The research findings indicated that climate change is one of the many material business risks to be considered by institutional investors. It would be insightful to determine where climate change ranks on the priority risk for the top 20 South African asset managers as ranked by value of assets under management. This could be accomplished by a quantitative study by conducting a survey on a stakeholder materiality matrix of all material business risks, including climate change.

7.5 Conclusion

The incorporation of climate change into institutional investors' investment decision-making is referred to as SRI for climate change in most academic literature. The research findings indicated that institutional investors have full control of the portfolios they manage, which puts them in favourable position for driving SRI for climate change. The state of responsible investment in SA including SRI for climate change is gaining momentum because there are high levels of awareness to the materiality of ESG issues and climate change risks, but it is still under-developed. The business case for climate change would need to be driven by business sustainability, investment performance, and corporate citizenship.

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Appendices

Appendix 1: Top 20 SA asset managers ranked by AUM

- Old Mutual Investment Group
- Coronation Fund Managers
- Sanlam Investment Managers
- Investec Asset Management
- Allan Gray Limited
- Stanlib Asset Management
- Investment Solutions
- Momentum Asset Managers
- Momentum Manager of Mangers
- Prudential Portfolio Managers
- Futuregrowth Asset Management
- Prescient Investment Management
- Foord Asset Management
- Sanlam Multi-Manager International
- Taquanta Asset Managers
- Abax Investments
- Dibanisa Fund Managers
- Kagiso Asset Management
- Symmetry Multi-Manager
- Pan-African Asset Management

Appendix 2: Interview Guide

Interview Guide (date, place)

1. Introduction

Personal Introduction: Mthokozisi Moonlight Sithole, working for a coal mining company in South Africa. I am conducting academic research as part of my MBA degree requirements through GIBS.

Thank the interviewee for making time to participate.

Indicate the purpose of the study: The purpose of this study is to get insights on the motives of South African institutional investors in making decisions to, or not to incorporate climate change in their short-term investments. This involves exploring: the role and participation of the institution in responsible investing for climate change mitigation; incentives and constraints for promoting climate change mitigation; the integration of climate change screening in the investment process; and the participants' personal incentives that would make them consider climate change in their short-term investment analysis and decisions in the future.

Emphasise that the research is not only from the sustainability person's perspective, but also more importantly from the investment decision-maker's perspective.

Research process: Highlight the research methodology that is being followed to collect and analyse data. Indicate which possible companies will be participating in the study, and how the researcher intends to use results.

Interview process: Outline the structure of the interview. Indicate the participant's own views that are important. If requested, provide a copy of the interview guideline to the interviewee.

Interview consent: Discuss the contents of the informed consent form, and ask the interviewee to sign the form.

2. Interviewee background

Open the discussion by asking the interviewee to introduce (her) himself and the company, and highlight his/her: job title and designation; years of service in this designation; and area of focus in the company.

3. Research Questions

3.1 Research Question 1 – Does your organisation consider environmental, social, and governance (ESG) issues when you make short-term investment decisions?

(a) *Probe:* Is climate change risks and opportunities part of these ESG issues considered for short-term investments?

(c) *Probe:* How much do you understand about climate change and its impact on the environmental and economic systems? And where do you acquire climate change information relevant to you?

(b) *Probe:* Is your organisation subscribing to any responsible investment initiatives?

3.2 Research Question 2 – What methods does your organisation use to incorporate climate change risks and opportunities (or ESG issues) in the investment process? When and how is climate change (or ESG) screening done in this process?

(a) *Probe:* When and how is asset allocation performed in the process? ESG scoring?

(b) *Probe:* How do you balance your clients mandate and your internal investment philosophy when you execute risk management and investment objectives?

(c) *Probe:* How does your organisation monitor climate change (or ESG) practices of your investee companies or assets?

3.3 Research Question 3 – What are your organisation’s motives for deciding to (or not to) incorporate climate change (or ESG) in its short-term investments? (incentives and constraints)?

(a) *Probe*: What is the extent of investment performance in the decision? - Can you estimate your historical losses (gains)?

(b) *Probe*: What is the extent of social considerations and ethical values in the decision? -

(c) *Probe*: What do you consider as current material issues for your organisation and its stakeholders?

3.4 Research Question 4 – On a personal level, what are necessary conditions that would make you consider (or continue) promoting climate change mitigation in your future analysis of short-term investments?

(a) *Probe*: Do you consciously (not) incorporate climate risks and opportunities in your investment decisions at the moment?

(b) *Probe*: How would local climate risks influence your decision?

(c) *Probe*: How would business incentives such as climate change policy, and implementation of carbon tax systems influence your decisions? Or influence on investment process?

4. Interview Closure

Questions:

Ask if the interviewee would like to add anything else relevant to this research.

Ask if the interviewee would like to ask any questions regarding this research.

Closing comments:

Enquire if the interviewee can be contacted further for clarification on items related to this interview discussion.

Thank the interviewee for the time and contribution to this study. Do this personally and follow up with email.

Informed Consent Letter

I am conducting research on the incorporation of climate change in institutional investors' short-term investment decision-making, and am seeking insights on the motives of institutions to make such decisions. Our interview is expected to last less than an hour, and will help me understand:

- If your company considers climate change in short-term investment decisions, including the role it plays in responsible investing (if applicable).
- Your company's incentives and constraints in incorporating climate change risks and opportunities in short-term investments.
- The methods used by your company to integrate climate change in your investment process.
- Your personal incentives that would make you consider or continue incorporating climate change in your short-term investment analysis and decisions.

Your participation is voluntary and you can withdraw at any time without penalty. Our interview will be audio recorded, and I assure you that all data will be kept confidential. If you have any concerns regarding this research, please contact my research supervisor or me. Our details are provided below.

Researcher: Mthokozisi Sithole
Email: moon.sithole@vodamail.co.za
Telephone: 076 243 4507

Research supervisor: Donald Gibson
Email: donald.gibson@erm.com
Telephone: 082 782 9455

Signature of participant: _____ Date: _____

Signature of researcher: _____ Date: _____

Appendix 3: Codebook

Codes: Code Book

Number of Codes: 165, commented: 165

Code Info		Comment
BEE compliance risk	■	Q3
CDP information	■	Q1
ESG costs	■	Q3
ESG custodian	■	Q1
ESG in the investment process	■	Q1
ESG investment research	■	Q3
ESG ranking	■	Q2
ESG verification	■	Q3, Q4
SRI fund	■	Q2
Technology risk	■	Q3
access to information	■	Q4
accountability to asset owners and clients	■	Q1, Q3
allocation of assets	■	Q2
annual reports information	■	Q1
asset classes	■	Q2
asset managers	■	Q3

awareness of long-term returns	■	Q2
awareness to material issues	■	Q1, Q3
black male	■	Q1
bottom up investment approach	■	Q2
building design	■	Q2
business sustainability	■	Q3
capitalism	■	Q4
carbon tax	■	Q2, Q3, Q4
choosing location	■	Q2

client's expectations	■	Q2, Q3
client's involvement	■	Q2
client's mandate	■	Q2
client's mandate restrictions	■	Q2
client's portfolio requests	■	Q2, Q4
client's return objectives	■	Q2
clients	■	Q2
climate change awareness	■	Q1
climate change costs	■	Q3, Q4
climate change effects	■	Q3, Q4

climate change in the investment process	■	Q1, Q3
climate change incidents	■	Q3, Q4
climate change research	■	Q3, Q4
climate change screening	■	Q2
climate change uncertainty	■	Q3
climate damage	■	Q2, Q3
coal mining portfolio	■	Q2
collapse of African Bank	■	Q3
combination of mandates	■	Q2
commodity prices	■	Q2, Q3
company rating	■	Q2
company research	■	Q1, Q2
company's mandate	■	Q2, Q3
competition	■	Q3
competitive returns for customers	■	Q3
conflict of interest	■	Q3
consciousness to E&S issues	■	Q3, Q4
consideration by big companies	■	Q4
corporate image	■	Q3
cost of fixing the environment	■	Q3

credibility of management	■	Q2
dedicated ESG team	■	Q1
deflation	■	Q3
delivery on performance	■	Q3, Q4
designation	■	Q1
direct effect on markets	■	Q3
economic growth and performance	■	Q2, Q3
economic issues	■	Q2, Q3
effect on fund performance	■	Q4
effect on profitability	■	Q3, Q4
effect on share price	■	Q2
effect on the job	■	Q4
energy saving equipment	■	Q4
energy saving measurement	■	Q2, Q3
energy savings	■	Q2, Q3
energy sources	■	Q2
energy supply for power stations	■	Q2
engagement with investee companies	■	Q2
environmental friendliness	■	Q2

ethical values	■	Q3, Q4
experience	■	Q1
false security comfort	■	Q3
financial and non-financial goals	■	Q3
financial benefits	■	Q3
financial markets vs economy risk	■	Q3
geo-political issues	■	Q2
governance	■	Q2
government intervention	■	Q3, Q4
green buildings custodian	■	Q1
green initiatives	■	Q1

green points	■	Q3
green premium	■	Q1, Q3
herding	■	Q3
immediate impact	■	Q3
indian male	■	Q1
industry cooperation	■	Q3
industry regulation/legislation	■	Q3, Q4
industry themes	■	Q2

institutional investor powers	■	Q3
intrinsic valuation	■	Q2
investment attractiveness	■	Q3
investment botiques	■	Q2
investment performance	■	Q3, Q4
investment period	■	Q2, Q3
investment return	■	Q3, Q4
investor pressure	■	Q3, Q4
legislation costs	■	Q3
liquity	■	Q3
long-term investments	■	Q1, Q3
making money for clients	■	Q3, Q4
management of individual shares	■	Q1, Q2
media information	■	Q1
micro lending risk	■	Q3
monitoring ESG practices	■	Q2
municipal authorities risk	■	Q3
non-financial issues	■	Q2
numbers game	■	Q3
participation	■	Q1
pension funds	■	Q2, Q3
performance of assets	■	Q3

picking of funds and securities	■	Q2
portfolio track record	■	Q2
positive change	■	Q3
potential client	■	Q2, Q4
potential return assessment	■	Q2
private clients' involvement	■	Q2
productivity	■	Q3
profitability	■	Q2, Q3
project finance	■	Q2
proper wake up call	■	Q4
property division	■	Q2
quality of the company	■	Q2
reduction of income	■	Q4
reputation and credibility	■	Q3
research reports	■	Q1
responsible citizenship	■	Q3
responsible investing	■	Q1, Q3 Q1
revenue and profit generation	■	Q3
role in responsible investing	■	Q1

scientific reports	■	Q1
scientific evidence	■	Q4
secondary factors	■	Q2
share earnings expectations	■	Q2
short-termism	■	Q3
sideline reading	■	Q1
signatory to UNPRI	■	Q1, Q3
signatory to a code	■	Q3
social development	■	Q2
social involvement (CSI)	■	Q3

social responsibility	■	Q3, Q4
social sponsorships	■	Q3
social teams	■	Q3
societal (client base) risk	■	Q3
socio-economic benefits	■	Q3
source of information	■	Q1
stock selection	■	Q2
stockbroker reports	■	Q1
structural integrity of buildings	■	Q4

subscription costs	■	Q3
sustainability reporting	■	Q2, Q3
team of analysts	■	Q2
tenants occupancy risk	■	Q3
time for climate change screening	■	Q2
top down investemnt approach	■	Q2
types of clients	■	Q3
unemployment rate	■	Q3
valuations of markets	■	Q2
white male	■	Q1
winning business	■	Q3
working conditions for employees	■	Q3

Appendix 4: List of code groups and their members



Families: List of Code Families and their Members

Code Family	Codes
Q1- Climate change knowledge	<ul style="list-style-type: none"> ● climate change in the investment process ● climate change awareness
Q1- ESG/climate change consideration	<ul style="list-style-type: none"> ● management of individual shares ● company research ● green initiatives ● accountability to asset owners and clients ● dedicated ESG team ● long-term investments ● green premium ● responsible investing ● ESG custodian ● climate change in the investment process ● awareness to material issues ● making money for clients ● ESG in the investment process ● green buildings custodian
Q1- Participant Demographics	<ul style="list-style-type: none"> ● designation ● black male ● white male ● indian male ● experience
Q1- RI codes and guidelines	<ul style="list-style-type: none"> ● role in responsible investing ● participation ● signatory to UNPRI ● signatory to a code

Q1- Sources of ESG and climate change information

- research reports
- CDP information
- media information
- stockbroker reports
- source of information
- sideline reading
- annual reports information
- scientific reports

Q2- ESG scoring and screening

- governance
- energy supply for power stations
- coal mining portfolio
- climate change screening
- ESG ranking
- climate damage
- intrinsic valuation
- quality of the company
- time for climate change screening
- SRI fund

Q2- Monitoring RI practices

- monitoring ESG practices
- engagement with investee companies

Q2- Portfolio construction mandate

- client's return objectives
- clients
- building design
- portfolio track record
- private clients' involvement
- client's expectations
- company's mandate
- client's involvement
- combination of mandates
- investment period
- client's mandate
- client's portfolio requests
- awareness of long-term returns
- potential client
- pension funds
- client's mandate restrictions

Q2- Stock/Asset allocation

- allocation of assets

Q2- Stock/Asset selection

- environmental friendliness
- industry themes
- property division
- project finance
- economic growth and performance
- management of individual shares
- asset classes
- economic issues

- stock selection
- choosing location
- carbon tax
- share earnings expectations
- credibility of management
- valuations of markets
- potential return assessment
- social development
- top down investemnt approach
- energy saving measurement
- energy sources
- geo-political issues
- picking of funds and securities
- team of analysts
- effect on share price
- secondary factors
- company research
- profitability
- sustainability reporting
- commodity prices
- company rating
- bottom up investment approach
- energy savings
- investment botiques
- non-financial issues

Q3- Business material issues

- unemployment rate
- Technology risk
- economic growth and performance
- tenants occupancy risk
- economic issues
- societal (client base) risk
- deflation
- awareness to material issues
- micro lending risk
- municipal authorities risk
- collapse of African Bank
- financial markets vs economy risk
- BEE compliance risk

Q3- RI constraints

- liquidity
- financial and non-financial goals
- investment return
- subscription costs
- green premium
- short-termism
- conflict of interest
- climate change research
- false security comfort
- ESG verification
- investment period
- ESG costs
- climate change uncertainty
- signatory to UNPRI

Q3- RI incentives

- accountability to asset owners and clients
 - effect on profitability
 - investor pressure
 - responsible investing
 - industry regulation/legislation
 - commodity prices
 - climate change effects
 - cost of fixing the environment
 - ESG investment research
 - green points
 - long-term investments
 - productivity
 - competition
 - institutional investor powers
 - signatory to a code
 - climate change incidents
 - energy saving measurement
 - sustainability reporting
 - investment attractiveness
 - financial benefits
 - legislation costs
 - direct effect on markets
 - industry cooperation
 - immediate impact
 - carbon tax
-
- government intervention
 - herding
 - energy savings

Q3- RI motives

- socio-economic benefits
- winning business
- positive change
- client's expectations
- investment performance
- ethical values
- climate damage
- responsible citizenship
- performance of assets
- social responsibility
- business sustainability
- reputation and credibility
- revenue and profit generation
- competitive returns for customers
- corporate image
- making money for clients
- social teams
- numbers game
- social involvement (CSI)
- profitability
- delivery on performance
- social sponsorships
- working conditions for employees
- consciousness to E&S issues
- climate change in the investment process

Q3- Type of institutional investor

- asset managers
- pension funds
- types of clients

Q4- Conclusive research

- scientific evidence
- climate change research
- access to information

Q4- Consciousness of decision

- capitalism
- ethical values
- reduction of income

- investment performance
- delivery on performance
- effect on the job
- consideration by big companies
- consciousness to E&S issues
- effect on fund performance
- investor pressure
- social responsibility
- effect on profitability
- energy saving equipment
- client's portfolio requests
- potential client
- ESG verification

Q4- Exposure to climate risks

- climate change costs
- structural integrity of buildings
- proper wake up call
- climate change effects
- climate change incidents
- company's mandate

Q4- Policy and regulations

- climate change costs
- carbon tax
- industry regulation/legislation
- government intervention