

Biodiversity Reporting in China: An Exploratory Study

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Attestation of Authorship

I, Sisi An, hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains neither material previously published or written by another person nor material which to a substantial extent has been accepted for the qualification of any other degree or diploma of a university or other institution of higher learning, except where due acknowledgements and references are made in the acknowledgements and reference section.

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Abstract

This research investigated the practice of biodiversity disclosure in the most recent Corporate Social Responsibility (CSR) reports of Chinese top listed 50 companies on the Shanghai Stock Exchange (SSE). A search of company websites and databases found 44 CSR reports from 2013 or 2014 produced in either English or Chinese from the SSE top 50 companies. Reports were produced by companies from a range of industries. Biodiversity disclosures within this sample of reports were identified first via a keyword search and then by thoroughly reading each of the reports. A total of 102 individual disclosures were identified. Five research questions were addressed in this study. First, identification of how many companies disclose biodiversity information from the SSE50 was undertaken. It was found that 23 out of 44 reporting companies disclose biodiversity information. Second, the characteristics of the companies that report biodiversity information was examined. In relation to industry representation of biodiversity reporting companies, both financial and manufacturing industries were the most represented whilst lower number of biodiversity reporters occurred in companies from the construction, agriculture, mining and transportation industries. Third, the content/type of biodiversity information reported by the SSE50 companies was analysed. This was undertaken by categorizing the disclosures by content. In relation to the content of disclosures, disclosures on habitat protection, especially tree planting, were the most common, totalling 68 disclosures. The remaining disclosures were related to species conservation, which refers to domestic animals and wildlife. Fourth, the potential influences of the Global Reporting

Initiative (GRI) on the reporting of biodiversity information by Chinese SSE50 companies was considered. To answer this question disclosures were analysed via the GRI guidelines to identify the apparent influence of this international framework. It was found that the GRI guidelines have a high level of influence on biodiversity disclosure of the Chinese SSE50 companies with 95% (97 out of 102) of the disclosures relating directly to one of the GRI biodiversity indicators. Lastly, the difference in the amount and content of biodiversity disclosure between English and Chinese language reporters was examined. It was found that the English language biodiversity disclosure surpasses those in the Chinese language in both the amount and content perspective, which could indicate that there is more demand for biodiversity disclosures from English language stakeholders than from stakeholders in the Chinese context. This study provides an examination of biodiversity reporting within Chinese companies, something that is currently lacking in the extant literature. Given the exploratory nature of the study and the range of findings, the dissertation concludes with areas for future research which could extend this research and lead to a greater understanding of biodiversity reporting in the Chinese context.

Chapter 1: Introduction

The purpose of this research is to explore the practice of biodiversity disclosure in the most recent Corporate Social Responsibility (CSR)¹ reports of Chinese top listed 50 companies on the Shanghai Stock Exchange (SSE). It was undertaken by searching company websites and databases for CSR reports produced by the SSE top 50. Forty-four CSR reports from 2013 or 2014 published in either English or Chinese were found. Those reports were prepared by companies from a range of different industries. A keyword search and then a thorough read of each of the reports was undertaken to identify biodiversity disclosures within this sample of reports. Five research questions were addressed in this research to analyse the practice of biodiversity disclosure in the sample reports. This chapter outlines the motivation, process and findings of this study.

Specifically, this chapter introduces the study and background of biodiversity disclosure in the contemporary Chinese sustainability environment. It also presents the main objectives of this research. The remainder of this chapter is organised as follows. First, background to the issue of biodiversity is introduced as well as the motivation for this research presented. Second, the five research questions addressed in this research are presented. Third, the structure for this dissertation is provided.

¹ I predominately use the term 'Corporate Social Responsibility (CSR)' in this research because this is the common usage in the Chinese context. However, elsewhere, such as in the review of the literature, I may refer to the 'triple bottom line', 'sustainable development' or 'sustainability' interchangeably since this is how they are used in the literature.

1.1 Background and Motivation for the Research

There is an increasing recognition and appreciation of the influence of humans on the environment which has resulted in a questioning of traditional economic, ethical and accounting assumptions (Jones, 2010). This questioning is evident through a series of global discussions and recognition of issues such as climate change and biodiversity loss (and the relationship between the two). According to Gitay, Suárez, Dokken and Watson (2002), rapid climate change has impacted on species' ability to adapt and so results in biodiversity loss, which has negative consequences for human well-being.

The erosion of biodiversity is increasingly being recognised as one of the most serious current threats to human life (Jones and Solomon, 2013). Consequently companies have been under more pressure from stakeholders to decrease their influence on biodiversity and biodiversity protection issues have progressively become a crucial strategic subject for them (Houdet, Pavageau, Trommether and Weber, 2009). Notably it is an emerging area of research interest which considers such things as the levels of biodiversity disclosures or endeavours to explain managerial motivations for such disclosure behaviours (Siddiqui, 2013). It is also witnessed that a variety of researchers, United Nations practitioners, government guidelines and related parties have shown the imperative to perform biodiversity protection behaviours (Mansi, Pandey and Stringer, 2014).

While both developed and developing countries are likely to benefit from drawing

attention to this form of biodiversity accounting, it could be argued that developing economies are more susceptible to the results of biodiversity loss and in particular global climate change and its effects on biodiversity. Despite this, however, efforts to pay attention to biodiversity accounting and reporting in the context of developing economies have been few (Siddiqui, 2013; Mansi et al, 2014).

Motivated by the issue of biodiversity loss, this research aims to obtain a better understanding of the extant practice of biodiversity disclosure in Chinese SSE50 CSR reports. As is well known, China has transformed itself from an enfeebled nation in dire need of economic prosperity into a prosperous economic giant in the past three decades (Gray and Du, 2013). Such transition has inevitably brought social and environmental concerns. Furthermore, China has its unique governmental mechanism, which is characterized by hierarchy and secrecy (Ding, 2002). The combination of provincial and central government administration results in a complicated system (Guo, 2005). Alongside these trends, CSR reporting within the Chinese context has grown and is receiving increased attention (Gray and Du, 2013). It is this that provides the context for this study.

1.2 Research Questions

In light of the current situation of biodiversity loss (discussed further below), there is an urgent need for organisations to behave in an environmentally responsible way to protect biodiversity while ensuring economic prosperity (Jones, 2014). It is an

important issue for China which has a rich diversity of species and has increasingly gained attention by business and stakeholders' awareness (Liu, 2003). It includes the problems of air pollution, deforestation, climate change, and excessively overgrazed rangelands, which are expected to threaten biodiversity (Zheng and Cao, 2015). According to Siddiqui (2013) and Mansi et al (2014), developing economies are more susceptible to the results of biodiversity loss. Therefore, studying biodiversity reporting in China and the attitude of Chinese organisations towards biodiversity and biodiversity loss is the primary motivation for this paper.

Although the CSR reporting activities of Chinese companies are gaining more attention in the literature, the disclosure of biodiversity information is under-researched and there seems to be no related academic research which comprehensively examines biodiversity reporting in the Chinese context. As such, a range of questions in relation to biodiversity reporting in China remain unanswered. This research project undertakes an exploration into biodiversity reporting in Chinese SSE50 companies and is underpinned by the following research questions:

- RQ1. Within the context of growing levels of CSR reporting in China, how many companies from the SSE50 disclose biodiversity information?
- RQ2. What are the characteristics (e.g. industry, language, audited, GRI) of Chinese SSE50 companies that report biodiversity information?
- RQ3. What biodiversity information is reported by Chinese SSE50 companies?

- RQ4. What influence does the GRI appear to have on the reporting of biodiversity information by Chinese SSE50 companies?
- RQ5. What, if any, is the difference in amount and content of biodiversity disclosures between companies that report in the English language and those that report in the Chinese language?

1.3 Structure of the Dissertation

The rest of this dissertation is organised as follows. The next chapter reviews the literature and background of CSR reporting both globally and within the Chinese context where this research is located. Discussion of relevant literature, including biodiversity loss and the Global Reporting Initiative (GRI) guidelines that are a key focus in this research, is included. Chapter Three presents the method adopted in this study. Data collection and data analysis are the main parts of this chapter. Chapter Four presents the findings and discussion of the proposed research questions. The dissertation concludes with a short chapter which outlines the main points of the research and outlines areas for future research.

Chapter 2: Literature Review

2.1 Introduction

The objective of this chapter is twofold. First, it draws on the background and status quo of CSR reporting both worldwide and in China. Second, because the core of this research is biodiversity reporting, an overview of the literature in this area (both internationally and in China) is provided. Specifically, the chapter is organised as follows. In section 2.2, CSR reporting in relation to the global context is provided. In section 2.3 CSR reporting in the Chinese context is reviewed. This is followed, in section 2.4, with a discussion of biodiversity reporting – this includes the definition of biodiversity, biodiversity loss, GRI guidance on biodiversity and biodiversity disclosures. Here both the international context is considered along with a review of the very limited research on biodiversity reporting in the Chinese context.

2.2 CSR Reporting Worldwide

In recent years the attention towards the CSR behaviour of organisations has increased. This may be the result of an increase of environmental incidents and high profile business scandals such as the Deep-Water Horizon oil spill disaster in the Gulf of Mexico (Samkin, Schneider and Tappin, 2014), deforestation of the Amazon and other tropical rainforests (Jones, 2010) and Enron and Walmart whose reputations were tarnished as the result of such scandals (Stuart, 2006). All these issues arguably indicate that CSR reporting has become an imperative vehicle with the purpose of seeking sustainable development, and ought to be more than just a pro forma tool adopted by

an organisation to gain public prestige. Accordingly, organisations are nowadays experiencing a shift from traditional annual reporting patterns with an emphasis primarily on financial and past information to new models of reporting, some of which utilize the triple bottom line method to disclose corporate social responsibility data (Bonsón and Bednárová, 2014). Specifically, businesses have made efforts on reporting not only financial performance but also non-financial information due to growing pressure from both internal and external stakeholders. Triple bottom line reporting, also commonly referred to as CSR reporting, contains non-financial indicators. CSR reporting is an important business practice in respect of business and sustainability matters. In addition, CSR reporting is also crucial in the sense that it is reporting the ethical and social efforts implemented by individuals and companies (Rodolfo, 2012). Thus, it should be wholly committed to various stakeholders, not only shareholders (Rodolfo, 2012). In other words, CSR reporting serves as an effective instrument to communicate both the external and internal perceptions which play a significant role in building the relationship between the business and stakeholders (Bonsón and Bednárová, 2014). Consequently, CSR reporting has become the theme of increased attention of contemporary business and research.

At present, one of the most common ways of producing CSR reports is to follow the GRI guidelines. GRI is a not-for-profit organisation that was established in 1997 by a number of companies and organisations including the Coalition for Environmentally Responsible Economies (CERES). The GRI commits itself to providing a comprehensive framework to boost the development of economic, environmental and

social sustainability reporting for any business or governmental or Non-Governmental Organisations (NGO) (Hedberg and Malmborg, 2003). The GRI produces and puts forward a set of indicators which a company can use when reporting on sustainability. In accordance with GRI guidelines, CSR reports produced by the business is likely to make continuous improvements from economic, environmental and social perspectives. In summary, the GRI framework provides business with a robust and comprehensive structure for their CSR reporting.

For most countries however, CSR reporting is still a voluntary practice for companies. It is evident from those that do produce such reports that many businesses do want to demonstrate a positive image to the public to verify credibility and therefore enhance confidence with external stakeholders through issuing CSR reports. Furthermore, it is likely that the dramatic growth of reports in recent years results from greater prospects in the market and businesses may also be reluctant to fall behind those who have already released reports (Boiral, 2013).

It is witnessed that there has been an increasing global rising trend in CSR reporting (Noronha et al, 2013). Among the G250 enterprises, 45% of companies reporting in 2002 had changed from environment, health and safety (EHS) reporting to 52% sustainability reporting in 2005 (KPMG, 2002 and KPMG, 2005). This trend appears to be similar in the evaluation or assurance process which appears to be getting more systematic and evidence-oriented. In terms of the statistics published by KPMG 2008 reporting, 40% of the G250 enterprises produced assurance in a formal style (KPMG,

2008), which was 10% greater than those that undertook the practice in 2005 (KPMG, 2005). According to the latest KPMG International Survey of Corporate Responsibility Reporting (2013), the issuing of CSR reports is now a predominantly mainstream global business practice. Their report indicates that 93% of G250 companies prepared CSR reports in 2013, remaining relatively stable compared with those in 2011 (KPMG, 2013). In fact, CSR reporting is increasingly being regulated into a mandatory practice in some European countries, like the UK, Sweden, Denmark and Germany (UK Companies Act 2006; Oxfam Hong Kong, 2010).

Apart from the developed economy, there is a clear trend for developing countries to promote CSR disclosures (Siddiqui, 2013). Stock exchanges effectively take an important role in promoting CSR reporting and other initiatives due to such platforms having political and economic prominence in the light of such things as climate change, carbon emissions, food safety and poverty decline (Amaladoss and Manohar, 2011). For instance, the Malaysian stock exchange rules that listed companies are to issue an environmental report at least once a year (Noronha, Tou, Cynthia and Guan, 2013). In Korea, the Korean stock exchange has developed the Korean SRI index since 2009. This kind of index was made to evaluate the companies' environment, society and management (Noronha et al., 2013). Given the context of this study is China, CSR reporting in China is now discussed.

2.3 CSR Reporting in China

China forms the context for this research and therefore it is important to outline CSR reporting in the Chinese context. In the past three decades China has transformed itself from an enfeebled nation in dire need of economic prosperity into a prosperous economic giant (Gray and Du, 2013). Moreover, the Chinese economy has yet to hit its peak. Such speedy transition has inevitably brought social and environmental concerns. China has undergone the quickest increase in the number of middle-class individuals in history; at the same time, moving millions out of poverty (Flavin and Gardner, 2006). In the aspect of governmental mechanism, China is characterized by hierarchy and secrecy (Ding, 2002). The combination of provincial and central government administration has resulted in a complicated system with various requirements (Guo, 2005). Alongside these trends CSR reporting within the Chinese context has received increasing attention – yet it is still an area which is under-researched.

CSR reporting in China is significantly different from how it was ten years ago. According to Gray and Du (2013), the GRI official website contained only three Chinese companies in 2002 and 2005. The amount of CSR reports increased to 53 in 2009 but then dropped again to 49 in 2010 (Gray and Du, 2013). These numbers suggest that the number of companies who were conducting CSR reporting in the early 2000's was a very small proportion of Chinese organisations. It is important to note however that the figures presented by Gray and Du relate to GRI reports, that is the reports produced “in accordance” with GRI guidelines and therefore following an accepted (but

not mandatory) process. Notwithstanding, Guo (2005) illuminated that approximately one third of listed corporations prepared environmental related information in their annual reports in 2003, a sixth of large corporations said they had a stand-alone CSR report in 2004, and about half stated that they produced environmental related information on their websites in the same year. Generally speaking, the number of CSR reports on the official CSR website could be considered as low ten years ago. However, from this slow beginning the overall levels of CSR reporting in China have increased and is continuing to grow.

Chinese CSR reporting experienced a steady rise from 2004 to 2009, but a relatively small proportion of those comply with any guidelines (Gray and Du, 2013). Furthermore, according to the research findings of Gray and Du (2013), although all the top 10 firms issued CSR reports, the proportion of those fell dramatically (to 18%) in smaller sized companies (Top 500) That is to say, in terms of large Chinese companies, the Chinese government has shown great effort and pressure to encourage business to pay attention to social responsibility and take account of environmental issues more seriously. However, this may be somewhat superficial since it has a small impact on overall Chinese business practice.

To date, not only does the growth of CSR reporting keep an upward trend in the figures in Chinese companies, but a gap is narrowing between leading and lagging industry sectors (KPMG, 2014). This situation is also reported by a Chinese CSR report website

(Golden Bee, 2014). They report that Chinese sustainability reporting following GRI guidelines has maintained an annual increase of 20% over recent years (Golden Bee, 2013). Moreover, there are 47.6% CSR reports that accord with multiple standards in 2014 (CSR report, 2014). Statistics issued in 2012 show that the Chinese site issued 1705 CSR reports from across industries, which was a 70% increase from the figure recorded in 2011 (CSR report, 2014). And in 2013, the figure of sustainability reporting had reached 1874, which is a year-on-year growth of 10% (CSR report, 2014). As of 2013, 40% of the Shanghai stock market listed companies issued the social responsibility report, which included 305 mandatory disclosure companies and 74 voluntary disclosure companies (CSR report, 2014). Some industries have taken great steps over the previous few years. The real estate information technology services and transportation industries now have some of the higher levels of CSR reporting, whereas five years ago, their CSR reporting adoption was at a lower level (CSR report, 2014).

Not only on a number basis, but also the quality of CSR reporting has been regulated by Chinese government. Tracing the history of Chinese domestic guidelines, GRI has a broad influence on them. In 2000, GRI released the first version of the guidelines, which is the first global framework for extensive sustainability reporting (GRI, 2015). In 2002, the second generation of the guidelines, was published (GRI, 2015). In 2006, the G3 guidelines were launched with purpose of enabling companies to be flexibly adopted to report their performance in major sustainability areas (GRI, 2015). In the late of 2006, Shenzhen Stock Exchange released “Social Responsibility Guidance” to encourage

listed companies to prepare CSR reports according to GRI guidelines (Wang and Yang, 2012). In January 2008, the State-owned Assets Supervision and Administration Commission (SASAC) issued a “Guidance of the Central Enterprises to perform Social Responsibility” (Wang and Yang, 2012). After that, in May 2008, Shanghai Stock Exchange issued “the Guidelines on Listed Companies' Environmental Information Disclosure” and which designed to fulfil social responsibilities, address interests of stakeholders, and devote themselves to enhancing sustainable economic and social development (World-exchanges, 2009). Moreover, according to CSRreport (2014), all the CSR reporting of SSE50 have to comply with “the Guidelines on Listed Companies' Environmental Information Disclosure” Apparently, Chinese CSR reporting has entered into a mature period (GoldenBee, 2013).

2.4 Biodiversity Reporting

The issuing of CSR reports is an important signal for the public to understand and evaluate where the companies concentrate attention, what they are doing, and how they can improve their action in the long run (Ball and Bebbington, 2008; Bebbington et al., 2008). As mentioned before, climate change, a significant problem for the ecosystem, has gained global awareness and is the most critical universal environmental threat to biodiversity (Liempd and Busch, 2013).

Specifically, there is evidence that climate change could influence biodiversity with climate change likely to become one of the most significant drivers of biodiversity loss

by the end of the century (Millennium Ecosystem Assessment, 2015). In fact, climate change has already led to species having to adapt either through shifting habitat, changing life cycles, or the development of new physical traits. Conserving of marine ecosystems and restoring of degraded ecosystems is essential for the overall objectives of both the developed countries and developing countries because ecosystems play a key role in the global carbon cycle and adjust to climate change (Convention on Biological Diversity, 2015).

The United States and the European Union, alongside NGOs have lead large corporations to increasingly pay attention to the planning and behaviours for protecting biodiversity (Liempd and Busch, 2013). Thus, it is necessary to be aware of what companies do to preserve and manage biodiversity and this information should potentially be disclosed in their CSR report. The rest of this section is structured as follows. The next sub-section gives the definition of biodiversity, then introduces the situation of biodiversity loss. Third, GRI guidelines regarding the subject of biodiversity are provided. This is followed by a discussion of biodiversity reporting worldwide and biodiversity reporting in China.

2.4.1 Definition of Biodiversity

There are a number of definitions of biodiversity. One of the broad definitions proposed by Waldman and Shevah (2000, p. 299) is “the variety among living organisms, their habitats and their biological ecosystems, comprising of the ecological and evolutionary

processes in the natural environment”. Normally, biodiversity contains genetic diversity and species diversity, as well as the interactions between species and ecosystems (EEA, 2010). It is noteworthy that biodiversity has a significant impact on both anthropocentric and ecocentric philosophical perspectives. From the anthropocentric perspective, biodiversity is fundamental for the well-being of the planet and especially for humankind that survives within it (Jones and Solomon, 2013). Biodiversity directly benefits human beings in that it enhances the quantity and quality of food and water. Biodiversity may also benefit the advancement of medicine by preserving species of animal and plant life forms that may have medicinal value (Jones and Solomon, 2013). Biodiversity can also indirectly benefit humans by providing natural pollination rather than artificial pollination and by providing a conduit for climate balance (Jones and Solomon, 2013). From the ecocentric perspective biodiversity has an essential intrinsic value that transcends the concerns of humankind (Jones and Solomon, 2013). The ecocentric perspective recognises that biodiversity is beneficial in its own right from a moral and ethical viewpoint, which is different from its value to people.

2.4.2 Biodiversity Loss

Humankind has started to realise that biodiversity can benefit them by contributing towards human survival and quality of life (Jones, 1996). Human activities comprising the industrial revolution, population explosion, the excessive boom of a global economy, deforestation, mining and poaching have resulted in environmental and ecosystem degradation leading to species and biodiversity loss (Machlis, 1992; Jones and Solomon,

2013; Diaz, Fargione, Chapin, and Tillman, 2006). The corrosion of the world's biodiversity is universally recognised as one of the greatest present threats to the planet (Rose, 2000). Our planet is currently undergoing a mass extinction of species, which is unexpectedly more severe than those of earlier periods (Jones and Solomon, 2013). Different from the past, current mass biodiversity extinctions are more likely to be mainly man-made (Jones and Solomon, 2013).

In fact, it is an immense challenge for humans to protect the species that are already recorded. Further, scientists are constantly detecting new species at an average rate of 18,000 new plants and animals per year (IISE, 2012). Moreover, 176,311 new living species were discovered between 2000 and 2009, and 24,869 new animal fossil species were observed during that period (IISE, 2012). The point here is that people should not just only protect the species that are already known, but also those that are not known yet. As discussed above, erosion is a problem confronting the world's biodiversity with the rate of biodiversity loss potentially being beyond the rate of new species' detection (Wilson, 1992; Raven, 1997; He and Hubbell, 2011; Wheeler, Knapp, Stevenson, Stevenson, Blum, Boom, Borisy, Buizer and Carvalho, 2012). Consequently, the responsibility for humans as causing and stimulating this trend of biodiversity loss is becoming increasingly imperative.

Based on the self-evident importance of biodiversity from both anthropocentric and non-anthropocentric aspects and the current situation in terms of biodiversity loss, there

is an urgent need for all organisations and individuals to behave in an environmentally responsible way in order to protect biodiversity while ensuring economic prosperity. Accounting for biodiversity is an emerging and crucial part of organisational management and legitimacy (Jones, 2014). Ideally, such accounting will raise awareness of the role that humans play in biodiversity erosion (Jones and Solomon, 2013). The principle function of biodiversity accountants is to collect, organise and report pertinent environmental and biological data, which makes them specifically valuable in the process of balancing biodiversity against economic prosperity.

Biodiversity accounting and biodiversity reporting is an emerging area of study receiving increased attention. The rising interest in the area of accounting and reporting for biodiversity is reflected in a recent special issue of the Accounting, Auditing & Accountability Journal (AAAJ) (Jones and Solomon, 2013), a highly ranked international accounting journal dedicated to the topic. The editors of this special issue stipulated that accounting as a discipline has a significant influence on biodiversity, thus it ought to exercise that influence responsibly. The contributions in this special issue, as well as other literature which analyses biodiversity reporting, is discussed in the latter part of the chapter.

2.4.3 GRI Guidelines

As mentioned above, GRI has become the most universal guideline for corporations to disclose sustainability issues. For China, according to GoldenBee (2013), the GRI

guidelines have become the main reference basis for helping Chinese companies to produce CSR reports. The GRI produces and puts forward a set of relatively comprehensive indicators. G4 is the latest GRI sustainability reporting guideline that GRI has published. As with earlier iterations of the guidelines, G4 includes guidance on specific issues and challenges relating to biodiversity, which could help organisations to understand its relationship to, their behaviour towards, and operations surrounding biodiversity. Furthermore, the guidelines contain four performance indicators relating to biodiversity. These four biodiversity indicators are listed under the environmental category of GRI (G4, 2013). These indicators are intended to assist organisations in identifying, documenting, monitoring and managing biodiversity information. The indicators also assist in biodiversity reporting by providing a framework under which biodiversity reporting can take place (Calvert, 2007).

Table 1. GRI Biodiversity indicators

G3	G4
EN11: Operational sites owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity value outside protected areas.	EN11: Operational sites owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity value outside protected areas.
EN12: Description of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	EN12: Description of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.
EN13: Habitats protected or restored.	EN13: Habitats protected or restored.
EN14: Strategies, current actions and future plans for managing impacts on biodiversity.	EN14: Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.
EN15: Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	

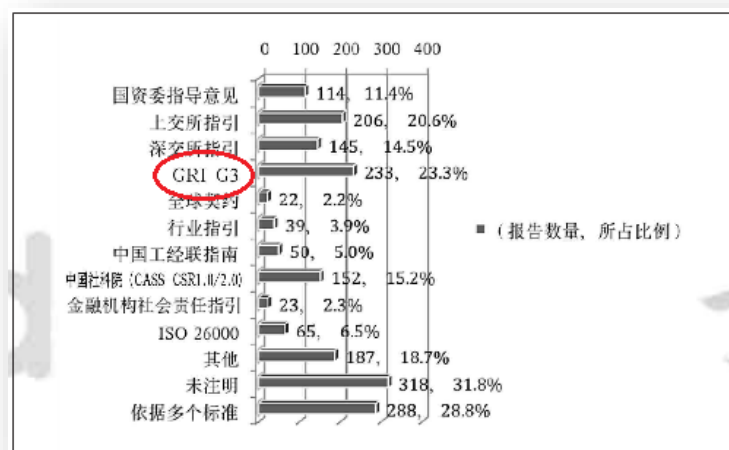
Table 1 lists the biodiversity indicators for both G3 and G4. The indicators of two generations are similar except G3 has an additional indicator, EN14, which is about the biodiversity strategies of the company. These indicators have been designed by GRI to direct corporations on the identification and reporting of biodiversity issues (GRI, 2007). Each indicator has a further interpretation, which aims to offer an overview of biodiversity issues encountered in the context of reporting. Reading the biodiversity indicators may help organisations to better structure their biodiversity reporting by understanding the wider context of, and relationship between, their activities and biodiversity (GRI, 2007).

The GRI makes up part of the context for this study which analyses biodiversity reporting in China. G4 was released in May 2013 and it seems the timeframe between its release and the reports collected for this study is not long enough to allow the business to report using G4. As such, it was found in this study that G3 is more commonly used than G4 in 2013 and 2014 CSR reports. For comprehensively investigating the disclosure practices of biodiversity, G3 is utilized in this study. That is to say, five biodiversity indicators are utilised as a basis for conducting the research.

The potential influences of GRI on the reporting of biodiversity information by Chinese SSE50 companies is discussed in the rest of this chapter. Before that, the overall level of using GRI to prepare Chinese CSR reporting is necessary to be introduced here.

Despite most of the Chinese CSR reports complying with more standards to report sustainability issues, the level of using of GRI guidance constantly remains a leading trend compared to other guidance (CSR report, 2014). This is identified by a series of longitudinal statistics for the period from 2012 to 2014, undertaken by Golden Bee. Golden Bee is an institution which promotes Chinese enterprise social responsibility and sustainable development (Golden Bee, 2015).

Figure 1. Application of Guidelines and Standards in 2012 (Golden Bee, 2012, p7)



Golden Bee annually produces statistics about “Research on Corporate Social Responsibility Reporting in China”. These statistics have been produced from 2009 to 2014. They show the overall picture of the development of Chinese CSR reporting. Figure 1 above and Figures 2 and 3 below are extracted from the research and illustrate the changing proportion of application of guidelines and standards from 2012 to 2014. From Figure 1, in 2012 it can be seen that GRI was the most adopted

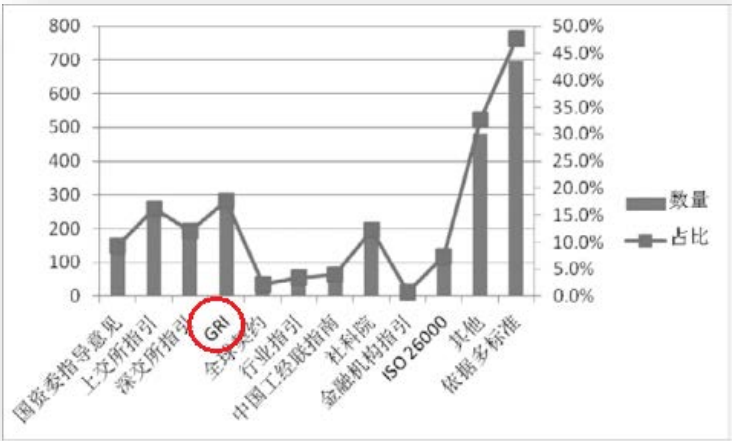
guideline for Chinese CSR reporting, which accounted for 23.3% of the whole population except for those reports that use multiple bases for the preparation.

Figure 2. Application of Guidelines and Standards in 2013 (Golden Bee, 2013, p10)



From Figure 2, in 2013 the usage of GRI guidelines remained stable at 21.3%, which ranks after state-owned assets supervision and guidance, multiple bases of preparation and unidentified guidelines.

Figure 3. Application of Guidelines and Standards in 2014 (Golden Bee, 2014, p11)



According to Figure 3, in 2014 the adoption of GRI guidelines was back to a leading position without consideration of reports that use multiple bases for the preparation and unidentified guidelines.

Figure 4. Reference Standards of Chinese 2012 CSR reports (Global Conference, 2013)



In addition, from the survey of the Global Conference in 2012 (Figure 4), the number of companies adopting GRI guidelines to prepare CSR reports is much greater than those using other references (Global Conference, 2013). Even in the early stages, 77% of the G250 organisations declared to have adopted the GRI guidelines in 2008 (KPMG, 2008). Overall, as can be seen from the figures, except for those reports that use multiple bases for the preparation of CSR reports and unidentified guidelines, following GRI guidance is the predominant way of producing CSR reporting in China.

The pervasive use of the mainstream GRI guidelines has the purpose of making the CSR reports more relevant and reliable since the appraisal procedure is quite systematic and evidential, whilst the same applies to biodiversity disclosure. For example, first, the GRI format requires completeness for a CSR report. Environmental disclosures (Noronha et al., 2013), such as biodiversity, the information should cover the material areas and indicators enough to mirror the crucial biodiversity influences. Second, GRI contains guidance on particular issues pertaining to biodiversity reporting. The cooperation of two documents of the Reporting Principles and Implementation Manual can assist companies to better understand issues related to biodiversity and the relationship to their behaviours and operations (Samkin et al., 2014). The attention of companies can therefore be directed to needed areas which could aid companies to become more capable of being sustainable and contribute to the issue of biodiversity.

2.4.4 Biodiversity Reporting Worldwide

The disclosure of biodiversity related information is an emerging practice within organisations (Jones, 1996). In the past, corporations treated biodiversity as a “free” entity. Nevertheless, it is cumulatively acknowledged that there is actually nothing “free” in the natural environment (Jones and Solomon, 2013) and there is a growing appreciation of biodiversity by business and governments, culminating in the current consensus that biodiversity is vital for businesses’ financial success and for human well-being (Jones, 2014).

The literature reviewed in this section relates to the necessity of biodiversity reporting within the organisation, the existing global situation of biodiversity reporting and what problems companies encounter in relation to biodiversity reporting.

By taking measures to steward biodiversity, businesses can strengthen their social legitimization to the public. Samkin et al. (2014) found that the number of biodiversity disclosures by Department of Conservation (DoC) had significantly increased since 2000 due to New Zealand's overall biodiversity strategy. Rimmel and Jonall (2013), in their study of the Swedish biopharmaceutical company AstraZeneca, found that the company's report painted a detailed picture of the company's impacts on biodiversity and provided unequivocal examples of activities that the company had undertaken to reduce or eliminate those impacts. They identified the company's reporting as the gold standard of biodiversity reporting. Tregidga (2013) used an existing framework to problematize the biodiversity reporting of one New Zealand Company, Solid Energy. She showed how Solid Energy accounted for species. She questioned whether biodiversity offsetting and reporting for biodiversity was truly a way in which species and habitat destruction could be justified rather than being a technology to introduce greater accountability.

However, despite the increased attention and slowly increasing practice of biodiversity reporting, the practice of and research into disclosure in relation to biodiversity is low

(Jones, 1996, 2003; Jones and Matthews, 2000; Houdet, 2008; Houdet et al., 2009; Garbsch et al., 2010). According to a review by Pricewaterhouse Coopers (PwC) in 2010 cited in TEEB (2010), in terms of quantity, only 18 out of 100 largest companies in the world has made reference to either biodiversity or ecosystems in their annual reports in 2008 – indicating that biodiversity reporting had not entered into traditional reporting formats. In relation to sustainability reporting, 89 of those 100 companies produced a stand-alone sustainability report, but even then reference to biodiversity was low with only 24 of the reports presenting the actions taken to reduce the negative influence on biodiversity and only nine firms believing that the impact of biodiversity has on firms is an essential factor of sustainability (TEEB, 2010).

In terms of quality of disclosures, most of the companies experienced a content-repeat problem. That is, they disclosed identical information on their biodiversity disclosure, websites and annual reports (Rimmel and Jonall, 2013). Furthermore, Reliance's sustainability report claims that their manufacturing divisions are located either in declared industrial development areas or environmentally non-sensitive areas to manage biodiversity, but they only briefly mention that they have pipelines over protected areas (Mansi et al., 2014). Therefore they seem to have an impact here, but they provide no details and repeat information of the location. According to the authors, they do not disclose the important influences of their operations on biodiversity, but state some general comments. Again, this information is disclosed on their website as well (Mansi et al, 2014). Furthermore, the biodiversity impact information that

companies presented has the tendency to be vague in nature and lacking the detail necessary to disseminate meaningful information on an organisation's impact on biodiversity (Rimmel and Jonall, 2013). For example, according to Mansi et al. (2014), the India Company BHEL's CSR reporting has a separate section for biodiversity (more than half of a page) that merely includes limited disclosure (one paragraph and four pictures). Moreover, this company does not describe the important impacts of their activities on biodiversity, but gives a little information on protecting habitats. Besides this, GAIL, a natural gas organisation, does have a sustainability report which refers to biodiversity, and there is over half a page on biodiversity in the report. It mentions the environmental initiatives that include planting a green belt around their operations. However, none of their operations are close to protected areas and the environmental initiatives have lower impact on ecology and environment (Mansi et al. 2014). These views expressed by the authors are also supported by TEEB (2010) whose study revealed that most companies who disclosed their impacts on biodiversity merely described vague objectives and used qualitative data other than performance based measurement. They note the biodiversity information is briefly mentioned in the CSR report and just pictures with tree planting are provided to demonstrate that they conduct biodiversity protection events.

2.4.5 Biodiversity Reporting in China

China has a treasure of biodiversity capital, wildlife, flora, fauna, natural habitats, rare and endangered species and biological assets (Zheng and Cao, 2015). It includes

abundant ecosystem types, beyond 30000 species of vascular plants and 340 species of terrestrial vertebrates, and which are greater than 10% of the worlds in both kinds of species (Liu, 2003). These contain many archaic and unusual evolutionary lines, like big pandas and ginkgoes (Axelrod, Shehbaz and Raven, 1998). China's biodiversity has experienced an increase in the tension and extent of human activities (Liu, 2003). Currently the forest cover has suffered from clearing and now covers only 16.5% of the original area (Liu, 2003). The rangelands are excessively overgrazed (Zheng and Cao, 2015). Moreover the wetlands have atrophied dramatically; invasive species are also a severe problem. In addition, poaching of plants and wildlife animals is still a common situation even though the government has regulations to forbid it (Liu, 2003). In addition, air and water pollution are among the most severe in the world. Last but not the least, the World Conservation Union Red List states China is among the countries with the most threatened birds and mammals (IUCN, 2002).

Biodiversity conservation has increasingly gained attention in China by business and stakeholders' awareness in terms of making them agree with and participate in conservation actions, but it has not been very effective until now (Liu, 2003). There is literature which has explored CSR practices in China, but little (if any) academic attention relating to how organisations are managing or reporting on biodiversity in China. The latest and rare non-academic report, but one relatively authorized study that analysed the status quo of biodiversity disclosure in 2013 in China, claimed that 21% of 100 chosen Chinese companies mention biodiversity although in different forms

(CSR report, 2013). Only 11% of them disclosed the biodiversity strategy and merely 8% of them deem biodiversity as a responsibility issue (CSR report, 2013). Specifically, biodiversity strategy refers to ensuring business decision-making and foresight on biodiversity conservation, which could help to detect business opportunities in biodiversity conservation whilst protecting biodiversity. It is important to note that within the 11% of reports that disclosed biodiversity strategies most of the companies did not include a biodiversity strategy into the corporate strategy, but merely and simply mentioned it in the content of environmental protection (CSR report, 2013). Furthermore, although there were 21% of CSR reports that mentioned biodiversity in different ways, only 8% treated biodiversity as one of the important social responsibility issues of companies (CSR report, 2013). Therefore, it is clear that the knowledge and understanding of Chinese corporations of the issue of biodiversity is relatively superficial.

There are certain studies regarding biodiversity reporting practices in both developed and developing countries (Siddiqui, 2013; Rimmel and Jonall, 2013; Cuckston, 2013), but they are scant in China – even in Chinese. With regards to theoretical developments, the biodiversity reporting practice in Chinese companies may suffer from some difficulties, like lack of pressure of stakeholders (e.g. government and community), shortage of biodiversity knowledge, or no realization of the significance and benefits of biodiversity to the business. Consequently, this English language research aims to be the pioneer to provide an overview, whilst bridging the gap, and presents a picture of

biodiversity reporting practices across the top SSE50 organisations in China. In closing, biodiversity reporting in China is at a very preliminary phase and more empirical research in this area is needed.

2.5 Summary

This chapter has drawn on the background and existing practice of CSR reporting both worldwide and in China, the context of this study. Then, because the key issue of this research is the practice of biodiversity reporting, an overview of literature on international and Chinese biodiversity disclosures was given. Here, the very limited research on biodiversity reporting in the Chinese context was noted. The shortage of existing literature regarding biodiversity reporting, especially in China, identifies that it is not just important, but necessary, to research this area,. Accordingly, the literature introduced in this session is used to develop the research questions. These were presented in the previous chapter and will be returned to in the following chapter. Along with these research questions, the next chapter will outline data collection, data analysis and the corresponding research design.

Chapter 3: Research Method

3.1 Introduction

This chapter introduces and explains the research method used in this research. It is achieved by introducing data identification, data collection and data analysis. Data identification includes the reason why SSE50 was chosen as the research target for this study and identifies the collection of the CSR reporting for each company. Then data collection introduces how the biodiversity related information from the reports are extracted in order to address the research questions. Finally, data analysis outlines how the data was analysed to answer the key areas of this study and is organised according to each of the research questions.

3.2 Data Identification

The 50 listed enterprises were drawn from an index of the Shanghai Stock Exchange (SSE), namely SSE50. The attention is on Chinese listed companies because they are expected to have a higher quality of CSR reporting than other companies due to the listed enterprises in China being reigned under rigorous regulation for public interest and the behaviours of those top companies regarding sustainability issues to some extent are likely to reflect trends in the contemporary Chinese environment (Li, et al., 2008). In addition, focusing on the SSE attributes to SSE releasing a Notice on Strengthening Listed Companies' Assumption of Social Responsibility (Shanghai CSR Notice) and the Guidelines on Listed Companies' Environmental Information Disclosure (Shanghai Environmental Disclosure Guidelines) in 2008 (Levine, 2008).

This means the listed companies on the SSE have more responsibilities than other Chinese companies to exercise socially related obligations, including dealing with interests of stakeholders and encouraging sustainable economic and social development. Apart from that, a particular factor for choosing large companies is because the number of English language disclosures are likely to be greater than those in smaller companies in the Chinese context. However, it is important to note that language is not the main reason for selecting the SSE50 and both Chinese and English language reports from the SSE50 are included to provide a good representation from this group of companies.

All 50 companies across all industries on the SSE50 are included. In effect, although it includes many different industries, theoretically all the sectors should have a moral responsibility to report preservation and conservation of biodiversity information. This is because according to the given biodiversity information in the earlier section, the biodiversity is under threat by increasingly severe climate change and it is known that there is an interactive relationship between biodiversity and organisations, more and more stakeholders of different industries have agreed to participate in conservation actions (Liu, 2003). All in all, SSE50 companies of their industries are selected to address reporting practices and therefore constitute the sample for this research. These companies are listed in Table 2 below.

For the companies listed in the sample each company's website, if they had one, was searched for CSR reports. The CSR reports from reporting organisations were gathered

directly from their official websites. For those companies who do not have the CSR reports on their official website, I used google search to find and download their reports. In order to ensure the data used in this research was the most recent, CSR reports in 2014 were preferred. If a company did not have a 2014 report, or the 2014 report had not yet been released, the 2013 report was selected. Companies that did not have CSR reports in either 2013 or 2014 were excluded from this research. This search resulted in 44 CSR reports for either 2014 or 2013 being located. Eleven were for 2014, the remaining being 2013 reports. The reporting practices of the SSE50 companies, including the language of the reports, industry, title and pages of the reports are outlined in Table 2 below.

English language reports were prioritized given this research is being presented in English. However, reports produced in Chinese were not excluded so a more general picture of biodiversity reporting by the SSE50 companies could be ascertained. The inclusion of both English and Chinese reports also allowed for the comparing and contrasting in relation to the difference in amount and type of disclosure between English and Chinese language reports/reporters. Another reason for using the two language CSR reports as sample is, limiting the study to companies that report in English might lead to a biased sample. In particular, CSR reporting in the English language of Chinese business is very likely to be for foreign listed organisations, who may have a greater interest in reporting on biodiversity than local companies. All in all, nine English language reports were found *vis-à-vis* 35 Chinese language reports.

One of the interests of this research is to evaluate the influence of GRI on biodiversity reporting in Chinese SSE companies. As such, whether the reports followed the GRI guidelines was recognised with the purpose of underpinning the reporting reliance for investigating the disclosure practices and GRI impacts. The “GRI report” column in Table 2 lists the adoption status of GRI for each company and which generation they used as a framework to produce sustainability reporting. G4 guidelines are the most recent ones and were launched in May 2013, so for those corporations that have published 2014 CSR reports most adopted GRI G4. In turn, G3 was pervasively used for the reporting in 2013. Thus, the GRI G3 and G4, as outlined in the literature review, were both accepted for this research and the existence of five indicators on biodiversity in total is therefore analysed as a classification basis.

Table 2. List of SSE50 companies on Shanghai Stock Exchange (SSE)

No	Company name	Industry on SSE	Report Year	CSR Report Title	Report Language	Total Pages	GRI report
1	Shanghai Pudong Development Bank Co., Ltd.	Financial	2014	SPD BANK CSR Report	Chinese	68	Y (G4)
2	China Minsheng Bank	Financial	2013	CSR Report	English	43	Y (G4)
3	Citic Securities Co., Ltd.	Financial	2014	CSR Report	Chinese	11	N
4	China United Network Communications Ltd.	IT services	2014	Information Technology Services CSR Report	Chinese	41	Y (G4)

5	Sinolink Securities Co., Ltd.	Financial	2014	CSR Report	Chinese	20	Y (G3)
6	Shanghai Fosun Pharmaceutical Group Co., Ltd.	Manufacture	2013	CSR Report	English	120	Y (G3)
7	China Avic Electronics Co., Ltd.	Manufacture	2013	CSR Report	Chinese	6	N
8	Kweichow Moutai Co., Ltd.	Manufacture	N/A	N/A	N/A	N/A	N/A
9	Qingdao Haier Co., Ltd.	Manufacture	2013	CSR Report	Chinese	63	Y (G3)
10	Haitong Securities Co., Ltd.	Financial	2013	CSR Report	Chinese	18	N
11	Daqin Railway Co., Ltd.	Transportation	2013	CSR Report	Chinese	7	N
12	Industrial Bank Co., Ltd.	Financial	2013	Sustainability Report	English	69	Y
13	China Cnr Co., Ltd.	Manufacture	2013	CSR Report	Chinese	43	Y (G4)
14	Industrial and Commercial Bank of China Ltd.	Financial	2013	CSR Report	English	41	Y (G3)
15	China State Construction Engineering Co., Ltd.	Construction	2013	Sustainability Report	English	58	Y (G4)
16	China Everbright Bank Co., Ltd.	Financial	2013	CSR Report	Chinese	92	Y (G4)
17	China Shipbuilding Industry Co., Ltd.	Manufacture	2013	CSR Report	Chinese	41	Y (G3)
18	Inner Mongolia BaoTou Steel Union Co., Ltd.	Manufacture	N/A	N/A	N/A	N/A	N/A
19	Shanghai International Port Group Co., Ltd.	Transportation	2013	Sustainable development report	Chinese	108	Y (G3)
20	China Merchants Bank Co., Ltd.	Financial	2014	CSR Report	Chinese	116	Y (G4)
21	Tbea Co., Ltd.	Manufacture	2013	CSR Report	Chinese	32	N
22	China Northern Rare Earth Group	Manufacture	2013	CSR Report	Chinese	28	N

	High-Tech Co., Ltd.						
23	Guanghui Energy Co., Ltd.	Mining	2013	CSR Report	Chinese	27	N
24	Nari Technology Co., Ltd.	IT services	2013	CSR Report	Chinese	42	Y (G3)
25	Anhui Conch Cement Co., Ltd.	Manufacture	2014	CSR Report	Chinese	29	N
26	San'An Optoelectronics Co., Ltd.	Manufacture	N/A	N/A	N/A	N/A	N/A
27	Inner Mongolia Yili Industrial Group Co., Ltd.	Manufacture	N/A	N/A	N/A	N/A	N/A
28	China Shenhua Energy Co., Ltd.	Mining	2014	CSR Report	Chinese	118	Y (G4)
29	Bank of Beijing Co., Ltd.	Financial	2013	CSR Report	Chinese	25	N
30	Ping An Insurance Group Co., Ltd.	Financial	2014	CSR Report	Chinese	99	Y (G3)
31	China Pacific Insurance Group Co., Ltd.	Financial	2013	CSR Report	Chinese	83	Y (G3)
32	Huatai Securities Co., Ltd.	Financial	2014	CSR Report	Chinese	22	N
33	PetroChina Co., Ltd.	Mining	2013	Sustainability Report	English	36	Y (G4)
34	China Citic Bank Co., Ltd.	Financial	2013	CSR Report	English	68	Y (G3)
35	Hua Xia Bank Co., Ltd.	Financial	2013	CSR Report	Chinese	50	Y (G4)
36	China Petroleum and Chemical Corporation	Mining	2013	Sustainability development report	Chinese	42	Y
37	Poly Real Estate Group Co., Ltd.	Real Estate	2014	CSR Report	Chinese	39	N
38	Saic Motor Co., Ltd.	Manufacture	2013	CSR Report	Chinese	73	N
39	China Cssc Holdings Ltd.	Manufacture	2013	CSR Report	English	45	N

40	Guangzhou Baiyunshan Pharmaceutical Holdings Co., Ltd.	Manufacture	2014	CSR Report	Chinese	49	Y (G4)
41	Kangmei Pharmaceutical Co., Ltd.	Manufacture	2013	CSR Report	Chinese	37	N
42	BesTV New Media Co., Ltd.	IT services	N/A	N/A	N/A	N/A	N/A
43	Shanghai Oriental Pearl Group Co., Ltd.	Environment and public facilities	N/A	N/A	N/A	N/A	N/A
44	China Merchants Securities Co., Ltd.	Financial	2013	CSR Report	Chinese	42	Y (G3)
45	China Hainan Rubber Industry Group Co., Ltd.	Agriculture	2013	CSR Report	Chinese	28	N
46	Agricultural Bank of China Ltd.	Financial	2013	CSR Report	Chinese	93	Y (G4)
47	Bank of Communications Co., Ltd.	Financial	2013	CSR Report	English	41	Y
48	China Life Insurance Co., Ltd.	Financial	2013	CSR Report	Chinese	58	Y (G3)
49	Csr Co., Ltd.	Manufacture	2013	CSR Report	Chinese	74	Y (G3)
50	Founder Securities Co., Ltd.	Financial	2013	CSR Report	Chinese	21	N

3.3 Data Collection

In order to address the research questions general biodiversity related information from the reports needed to be extracted. The first step in this process was to undertake a key word search. This assisted in the identification of information. It is important to mention that in order to ensure no relevant information was missing, all the reports were closely read after finishing the key terms search for any additional information this keyword

search may have missed. By doing so, any new found biodiversity-related words were added in the previous key word list. After that, the further keyword searches were run again. Finally, a series of biodiversity-related words, such as biodiversity, biological, species, animal, fish/fishery, plant, ecological and wetland, were searched in both languages (see Table 3). It is necessary to note that every searched keyword has its equivalent meaning in either Chinese or in English. Accordingly, the general biodiversity-related information was first extracted from each of the CSR reports and then saved into two word documents according to English and Chinese language. The passages or the sentences on biodiversity collected from both English and Chinese CSR reports represented the equivalent of 43 pages (12 of which were for English). A total of 194 disclosures were identified.

Table 3. Key word list

No.	English	Chinese
1	Biodiversity	生物多样性
2	Biological	生物
3	Species	物种
4	Animal	动物
5	Fish/Fishery	鱼/渔
6	Plant	植物/种植
7	Ecological	生态
8	Wetland	湿地

In order to conduct the research, it was necessary to determine what constitutes a biodiversity disclosure and therefore what disclosures are included (and excluded) in the study. For this study, a disclosure equals each time a company makes a disclosure

about biodiversity. The following criteria were designed to assist in the process of identifying what are biodiversity disclosures as understood in this study and were used to consider any disclosure. To be included in the biodiversity disclosures analysed in this study the disclosure had to meet one or more of these three criteria.

The three criteria for biodiversity disclosure presented below was developed for the purposes of this research. The criteria were developed by reading biodiversity accounting literature, biodiversity disclosure guidance in the GRI, and reading biodiversity disclosures in the reports. While the literature and GRI guidance was useful to begin to develop the criteria, the process was iterative as I moved back and forth between the criteria and the biodiversity disclosures from the reports. This ensured that a broad definition of biodiversity disclosures, which included, but also went beyond, the GRI criteria.

For the purpose of this study, a biodiversity disclosure is counted when:

1. The disclosure identifies or discusses the impact (positive or negative) of the organisation on biodiversity (e.g., activities related to supporting biodiversity or activities which produce biodiversity loss).
2. The disclosure identifies or discusses the impact (positive or negative) of biodiversity on the organisation.

3. The disclosure identifies or discusses future plans and strategies for managing the influence of the organisation on biodiversity or the effects of biodiversity on the organisation.

This initial keyword and reading search resulted in 43 pages of disclosures (this was made up of 194 disclosures). Disclosures were then read and either confirmed or removed depending on whether or not they met the above criteria.

Given the above criteria, some eligible biodiversity disclosures on CSR reporting that comply with and were therefore included in this study are:

“Around 2000, Mr. Yao (a stakeholder of Minsheng Bank who owns the island) found that the fishing resources were decreasing continuously, it became harder and harder to fish in coastal waters, and some domestic animals of fish also became rarer. *The Fuzhou Branch of Minsheng Bank is quite interested in such project and invest the first loan of RMB40 million with a term of two years.*” (China Minsheng Bank 2013, p. 22)

“Forests are important carbon sink of the nature, a climate stabilizer and a shelter for biodiversity.” (Petro China 2013, pp. 33)

“Future project, we [China State Construction Engineering Corporation] make investigations of the ecological environment and conditions of animals and plants in advance and draw protection plans accordingly. We also enhance employees’ awareness on ecological protection, and label rare animals and plants in the construction areas.” (China State Construction Engineering Corporation 2013, p. 49)

To make it easier to understand, some examples which were excluded from the study as they did not meet the criteria are as follows.

“To improve the financial payment environment and implement preferential agricultural (animal husbandry) policies in rural pasturing areas, Hohhot Branch carried out the POS Rural Electricity Payment Project which covered over 700,000 square kilometers of 8 prefecture-level

cities and 38 banners and counties, providing rural electricity charging service to some 6.8 million people.” (Industrial Bank 2013, p. 42)

“Guangdong Branch conducted the activity of “planting trees together and caring the nature.” (Industrial and Commercial Bank of China 2013, p. 44)

“Reclamation and afforestation; Ecological construction; The construction of green ecological blueprint” (China Shenhua Energy 2014, p. 68)

A large number of disclosures were general and not related to the criteria as stated above, therefore the initial 43 pages of disclosure were reduced to 11 pages. This was made up of about five pages in English and six pages in Chinese. There were 102 disclosures in total, 60 versus 42 for Chinese and English language respectively. These 102 disclosures were then analysed as outlined below and made up the disclosures included in this study (refer to the Appendix, p. 100).

During the whole investigating process, some difficulties were inevitably encountered and then solved as much as possible. For example, there were six companies' CSR reports that published in picture version rather than in PDF form. This made it impossible to do a keyword search on these documents. Fortunately, the use of the professional software Adobe Acrobat Pro facilitated the conversion of these files and therefore a keyword search then became possible.

3.4 Data Analysis

This section outlines the process of data analysis undertaken in this study. The section is organised according to each of the research questions. Specifically this section

narrates how the research goes about answering each of proposed research questions – that is, how the above data was analysed to address the key areas of this study.

3.4.1 Research Question 1

Research question one considers how many companies on the SSE50 disclose biodiversity information within the context of growing levels of CSR reporting in China. To answer this question, I went through my company list and ticked the companies that had one or more eligible biodiversity disclosures. A table of this information was prepared (included in Chapter 4, Research Findings) and marked Yes or No to record the disclosure information. Therefore, it is clear to identify how many companies from the Chinese SSE50 produced biodiversity disclosures in line with the design criteria of this study.

3.4.2 Research Question 2

Research question two identifies the characteristics, such as industry, language, whether GRI was followed of Chinese SSE50 companies that report biodiversity information. The table that obtained from answering research question one is the basis for recognising the features of the eligible companies. In particular, I kept that table handy, then removed the companies that did not disclose biodiversity information. After that, I had only companies that disclosed related information, and next identified a set of characteristics, such as what industry they belong to, what was the CSR report title, whether or not they used the English or Chinese language, how many pages was the

report, and whether or not they followed the GRI guidelines. It is necessary to note that the industry was decided by using the classification given by the SSE. The reason why I selected this set of characteristics is because each characteristic has a strong connection for addressing the proposed research questions. Thus, I went through each of the CSR reports and noted the corresponding characteristics that I had identified. In order to pave the way for the following analysis, the order of the businesses has been rearranged according to language. Similarly, a table will be given to explain the research findings in the next chapter (see Table 5).

3.4.3 Research Question 3

Research question three identifies the content of biodiversity information reported by Chinese SSE50 companies. The 11 pages of biodiversity disclosure (102 disclosures in both English and Chinese) were used to analyse what biodiversity information was reported by Chinese SSE50 companies. In order to identify what biodiversity information is reported by the Chinese SSE50 companies who report, I went back to the 102 disclosures and coded them step by step and finally put them into particular themes. Specifically, I worked out what were they disclosing, labelled each extract first and then looked at the labels. After that I changed them to identify similar labels, such as tree planting, plant protection, overexploitation prevention, wetland restoration, problems caused by environmental pollution, resistance to environmental pollution, species conservation of domestic animals and species conservation of non-domestic animals. Then I put the similar labels together and named a subtheme. The various

subthemes were established then, tree plantation, activities of habitats protection, identification of environmental pollution, species conservation of domestic animals and species conservation of non-domestic animals. It is necessary to point out that the non-domestic animals here refer to wildlife. So, I named it wildlife (non-domestic animals) in my findings. Moreover, it is worth noting that the names of some subthemes are the same as the labels. This is because the amount of the disclosure is enough to give it a separate subtheme. Last, I gave relevant subthemes an overall theme with the purpose of more clearly understanding the contents of the biodiversity disclosure. For example, the subthemes of tree plantation, activities of habitats protection and identification of environmental pollution are related more to habitats protection, and domestic animals and wildlife (non-domestic animals) are obviously talking about species. Therefore, two themes were finally generated, habitats protection and species conservation.

Because this research question is about the nature of biodiversity information reported by Chinese SSE50, each theme contains both English and Chinese language reports. By theming this information, I not only identified the most disclosed themes, but also what I perceived to be the characteristics of biodiversity disclosure of Chinese SSE50. After the coding process, I generated three figures (appearing as Figures 1, 2 and 3 in the following chapter) to help illustrate the research findings. According to Miles and Huberman (1984), graphic demonstration can present greater visualised images to explain information. It is crucial to provide a holistic picture and explicit findings to an audience. Therefore, along with figures, it was evident that the content and propensity

of biodiversity disclosure in the CSR reports of SSE50 then emerged.

3.4.4 Research Question 4

Research question four evaluates the potential influence of GRI on the reporting of biodiversity by Chinese SSE50 companies. Essentially, the coding process in this question required me to understand GRI indicators very well and cautiously conduct the classification work. As mentioned before, GRI guidelines are the most common way to produce sustainability reports internationally and the guidelines were indeed used by 28 out of 44 published reports. While this indicates the influence of the GRI on the reports included in this study it was seen as useful to consider the influence of the GRI on biodiversity disclosures by both those that report using the GRI framework and those that do not. Before explaining the method by which this influence was identified, it is necessary to note that the extracted 102 disclosures were not all from GRI-adopted reports, so there were some disclosures left after coding. That is to say, this research question is interested in the influence of GRI within the whole data set, not just those that produced reports using the guidelines.

In order to see how many disclosures appeared to be related to the GRI and how many were not, I coded each of 102 biodiversity disclosures into GRI indicators. Specifically, first the GRI biodiversity indicators were listed and the guidance for each indicator considered. As mentioned before, there were five performance indicators on biodiversity in G3 utilized as coders for each disclosure. It is useful to have the

description here so as to help to ascertain the relevance of my findings.

EN11 suggests business to disclose information on specific location and size of land possessed in either protected areas or areas having rich biodiversity. EN12 asks companies to make descriptions of important influences of behaviours, products and services habitats protected and restored. EN13 requires companies to report habitats protected or restored. EN14 relates to the strategies that businesses adopted to manage the impact on biodiversity conservation. EN15 connects to the number of IUCN Red List species and national protection list species.

All the 102 disclosures were therefore allocated into two corresponding files. One file contained the information that is compliant with GRI indicators on biodiversity matter, the other one saved the rest of the information. It is worth noting that the number of GRI related disclosures was found by counting the number of GRI irrelevant disclosures since each disclosure may correspond to more than one biodiversity indicator. That is to say, the number of GRI related disclosures was obtained by using the total of biodiversity disclosures (102) less the number of GRI irrelevant disclosures. Finally, the GRI indicators used for the biodiversity reporting were identified and essentially, the proportion by GRI adoption on biodiversity issues of Chinese SSE50 CSR reporting emerged as far as possible.

By doing so, the influence GRI guidelines have on Chinese Top 50 companies' CSR

reporting was identified which formed the result of this research question in keeping with the objectives. The findings from this analysis are presented in section 4.5 in the following chapter.

3.4.5 Research Question 5

The Chinese and English version CSR reports were examined to see whether there were differences in amount and content of disclosure amongst the collected biodiversity information. Although the total number of English and Chinese CSR reports differed (nine for English versus 35 for Chinese), there was not much difference after screening the biodiversity criteria, about five pages in English and six pages in Chinese. I identified the total number of disclosures per reporting company. The more specific data will be shown in the final chapter, like how many disclosures from how many firms among those 102 biodiversity disclosures.

In addition, given the result of research question four where a very high number of reports used the GRI indicators as a basis to report biodiversity information the GRI seems worthy of selection as a standard to consider the difference between the two languages. By doing so, the number of biodiversity disclosures between English and Chinese is able to be counted. Moreover, the detailed GRI indicators are expected to capture the difference in content of biodiversity disclosure that English and Chinese language reports intended to declare to the public.

Particularly, the result of this research question will be presented in the form of a chart (see Figure 8, p. 78). After comparing the usage of GRI indicators, the different levels of disclosure of the two languages emerged. Consequently, it is not only to clearly identify the different number of disclosures for each language, but also to recognise the difference in content between the two languages through the comparison chart.

3.5 Summary

This chapter has introduced the overall research design, including data collection and data analysis. It starts from the important data identification and biodiversity criteria being made, then is followed by the plan for recording data on the basis of each research question. According to the nature of the questions, corresponding schemes for content collected are created. Thus, after analysing such data, the next section offers the findings and discussion with regard to the practices of biodiversity disclosure among Chinese SSE50 reporters.

Chapter 4: Research Findings and Discussion

4.1 Introduction

This chapter provides both detailed findings and discussion of biodiversity disclosures through CSR reporting in Chinese listed companies on the SSE in either 2014 or 2013. As stated in the previous chapter, some measurements, such as biodiversity criteria, biodiversity themes and characteristics of companies, were used to evaluate the level of Chinese biodiversity disclosure. This section consists of seven subsections. After this introduction the following five subsections present the research findings for the research questions. Specifically, the first finding gives the number of Chinese companies on the SSE50 that disclose biodiversity information. The next subsection identifies the general features for all companies that produce biodiversity information. This is followed by the findings of what biodiversity information is reported by SSE50. The results for the fourth research question considers the impacts of the GRI framework on biodiversity disclosures of Chinese CSR reports. The discussion about the difference in amount and content of disclosure between English and Chinese language reports will be provided in the penultimate subsection. Finally, a summary of the chapter will be presented.

4.2 Number of Companies which Disclose Biodiversity Information

In this section, I address and discuss the first research question of this research, namely, an analysis of how many companies from the SSE50 report biodiversity information in their CSR reports.

Table 4. Companies who disclose biodiversity

No.	Company name	Number of disclosures
1	China Minsheng Bank	7
2	Shanghai Fosun Pharmaceutical Group Co., Ltd.	6
3	Industrial Bank Co., Ltd.	6
4	Industrial and Commercial Bank of China Ltd.	6
5	China State Construction Engineering Co., Ltd.	4
6	PetroChina Co., Ltd.	10
7	China Citic Bank Co., Ltd.	3
8	Qingdao Haier Co., Ltd.	1
9	Shanghai International Port Group Co., Ltd.	3
10	China Merchants Bank Co., Ltd.	1
11	Tbea Co., Ltd.	1
12	China Northern Rare Earth Group High-Tech Co., Ltd.	2
13	Anhui Conch Cement Co., Ltd.	4
14	China Shenhua Energy Co., Ltd.	17
15	Bank of Beijing Co., Ltd.	1
16	China Pacific Insurance Group Co., Ltd.	2
17	Shanghai Pudong Development Bank Co., Ltd.	3
18	Citic Securities Co., Ltd.	4
19	Hua Xia Bank Co., Ltd.	1
20	China Petroleum and Chemical Corporation	8
21	Guangzhou Baiyunshan Pharmaceutical Holdings Co., Ltd.	1
22	China Hainan Rubber Industry Group Co., Ltd.	3
23	Agricultural Bank of China Ltd.	8
	Total number of biodiversity disclosures	102

As stated in last chapter, 11 pages of biodiversity disclosures were collected, so a total of 102 biodiversity disclosures in CSR reporting of Chinese SSE50 companies were identified. This assisted me to identify which companies had produced biodiversity disclosures. Specifically, I identified which reports contained biodiversity information and counted the total number of disclosures per reporting company, which is related to the answer of how many companies disclosed biodiversity information. More than that,

the results show the companies which disclosed the most biodiversity and those that disclosed the least, which could indicate different things when recognising the different levels of biodiversity information disclosed by different companies. These results are presented in Table 4.

The results shown in Table 4 reveal that out of the 44 Chinese companies on the SSE50 that produced CSR reports in the period of my sample, only 23 companies disclosed biodiversity information. That is to say, just half of the reports companies (52%)² produced biodiversity disclosure. Among them, the company who had the most biodiversity disclosures is the China Shenhua Energy Company, which had 17 biodiversity disclosures. This is followed by the Petro China Company with 10 biodiversity disclosures. It is important to note that they are both from the mining sector. After that, there are three companies who had around eight disclosures each. For the rest of the companies (18), three or four disclosures of biodiversity information is the mainstream (seven out of 18), occupying the largest proportion. Equivalently, there are six out of 18 companies that only have one disclosure on their CSR reports and most of them are from the financial industry.

Generally speaking, this is a disappointing result since overall only 23 of out of 44 (52%) companies produced biodiversity information in their CSR reports and as such recognise biodiversity as an issue. However, according to the prior studies mentioned

² Percentages reported in this chapter are rounded up to the nearest percent

before, only 21% of 100 selected Chinese businesses mentioned biodiversity, only 11% of them disclosed biodiversity strategy, merely 8% of them treated biodiversity as a responsibility issue prior to 2013 (CSR report, 2013). Accordingly, to some extent it suggests that there appears to be an increase in the reporting of biodiversity information in the Chinese SSE50. Nevertheless, although the disclosure of biodiversity information appears to have an increasing trend in the past two years, the performance of reporting biodiversity related information, of biodiversity information contained companies, is still just on a moderate level due to there being 23 out of the 44 companies who reported. However, it should be noted that those companies that do not produce a standalone CSR report could report their biodiversity disclosure elsewhere, such as in their annual report or website. Despite this, 52% of companies reporting biodiversity disclosure is not an encouraging result. It is hard to say the underlying reason based on this study but this is discussed further in the following chapter where avenues for future research are considered.

4.3 Characteristics of Biodiversity Disclosing Companies

In this section, I provide the result and discussion of research question two, namely, the characteristics of Chinese SSE50 companies that report biodiversity information.

I analysed the characteristics of listed companies that have eligible biodiversity disclosure in their CSR reporting to see the industry distribution, title of CSR report, report language, report pages, whether or not the report had been audited and whether

or not the reporting company used the GRI guidelines as a framework to produce their reports.

The detailed information can be seen in Table 5 and the research findings will be developed, in turn, according to these aspects.

Table 5. Characteristics of biodiversity disclosed company

No.	Company name	Industry on SSE	Report Language	Total Pages	Audited	GRI report
1	China Minsheng Bank	Financial	English	43	Y (PWC)	Y (G4)
2	Shanghai Fosun Pharmaceutical Group Co., Ltd.	Manufacture	English	120	Y	Y (G3)
3	Industrial Bank Co., Ltd.	Financial	English	69	N	Y
4	Industrial and Commercial Bank of China Ltd.	Financial	English	41	Y (KPMG)	Y (G3)
5	China State Construction Engineering Co., Ltd.	Construction	English	58	Y	Y (G4)
6	PetroChina Co., Ltd.	Mining	English	36	N	Y (G4)
7	China Citic Bank Co., Ltd.	Financial	English	68	Y (KPMG)	Y (G3)
8	Qingdao Haier Co., Ltd.	Manufacture	Chinese	63	Y (Shan Dong He Xin)	Y (G3)
9	Shanghai International Port Group Co., Ltd.	Transportation	Chinese	108	Y	Y (G3)
10	China Merchants Bank Co., Ltd.	Financial	Chinese	116	Y	Y (G4)
11	TBEA Co., Ltd.	Manufacture	Chinese	32	N	N
12	China Northern Rare Earth Group High-Tech Co., Ltd	Manufacture	Chinese	28	N	N
13	Anhui Conch Cement Co., Ltd.	Manufacture	Chinese	29	N	N
14	China Shenhua Energy Co.,	Mining	Chinese	118	Y	Y

	Ltd.				(Deloitte)	(G4)
15	Bank of Beijing Co., Ltd.	Financial	Chinese	25	N	N
16	China Pacific Insurance Group Co., Ltd.	Financial	Chinese	83	Y	Y (G3)
17	Shanghai Pudong Development Bank Co., Ltd.	Financial	Chinese	68	Y (PWC)	Y (G4)
18	Citic Securities Co., Ltd.	Financial	Chinese	11	N	N
19	Hua Xia Bank Co., Ltd.	Financial	Chinese	50	Y (Deloitte)	Y (G4)
20	China Petroleum and Chemical Corporation	Mining	Chinese	42	Y	Y
21	Guangzhou Baiyunshan Pharmaceutical Holdings Co., Ltd.	Manufacture	Chinese	49	N	Y (G4)
22	China Hainan Rubber Industry Group Co., Ltd.	Agriculture	Chinese	28	N	N
23	Agricultural Bank of China Ltd.	Financial	Chinese	93	Y (PWC)	Y (G4)

The following analysis is organised according to the characteristics listed in Table 5 to identify the features of each biodiversity reporting company. In order to guarantee the reliability of the information, all the characteristics are found in their CSR reports and the classification of the industry, as mentioned in the previous chapter, was decided by using the classification given by the SSE.

Industries on the SSE

Through the industry distribution it can be seen that the largest number of reporters of biodiversity information are from the financial sector, with 11 out of 23 (48%) companies disclosing biodiversity information in the period of 2014 or 2013. It is worth mentioning that 11 out of 20 (55%) financial services companies on the list of SSE50

produced biodiversity information. That is to say, the financial industry would still have the highest number of biodiversity disclosing companies. The second largest group by industry who disclosed biodiversity information is the manufacturing industry with six out of 23 business having eligible disclosure. However, for the rest of the industries, there is nearly an equal number of companies among the construction, agriculture, mining and transportation sectors.

Taken together, I found that both financial and manufacturing industries take the lead generally, whilst the proportion of construction, agriculture, mining and transportation industries remains at a very low level in disclosing biodiversity issues. Nevertheless, it must be pointed out that there are 74% (37 out of 50) of companies that belong to either the financial or manufacturing industries on the SSE Top 50. Therefore, the obvious reason for this phenomenon might be because the level of this distribution is just the distribution of the industries on the SSE50.

Report language

It is exhibited in Table 4 above that seven out 23 companies adopted English to report the biodiversity issue, which accounts for 30% of the total number. It is worth mentioning that only 18% (nine out of 50) of companies in the SSE50 prepared their CSR reporting in English in the period of my sample. However, compared to all kinds of Chinese social responsibility reports released in mainland China in 2013, merely 6.2% of them have English language CSR reporting (Golden Bee, 2013).

Based on this situation, the proportion of CSR reporting produced in English among SSE50 companies is almost three times (18% vs 6.2%) that produced among all kinds of Chinese companies in mainland China in nearly the same year. Furthermore, for these nine English reports on the SSE50, there are seven out of nine companies that identified biodiversity as an issue in their reports, which leads the percentage and accounts for 78% of all the English reports. It is also found that the financial industry appears to more likely to produce English language CSR reporting than other industries. The difference in biodiversity reporting in relation to language is explored further below in section 4.6.

Report auditing and report length by pages

As presented in Table 4, it was found that 61% (14 out of 23) of the CSR reports included in this study have an assurance statement by a third party professional agency. This indicates that over the half of CSR reports have been audited and this kind of opinion is expressed in light of the veracity of text, data, graphs and statements of the reports (Auditing and Assurance Standards Board, 2014). Thus, there appears to be a high level of assurance amongst those reports in my research. However, the assured CSR reports among all the Chinese companies only accounted for 7.6% in 2013, which saw a 1.9% growth over 2012 (Golden Bee, 2013). This implies that with the acceleration of the process of globalization, more and more shareholders among top listed companies treat corporate social responsibility as a substantive commitment,

rather than a symbolic matter. That is to say, in recent years there has been an increasing number of businesses endeavouring to achieve green management through different ways. They believe that a sustainable stance is not able to be faked, especially when the companies operate in an environmentally sensitive industry. Therefore, carrying out symbolic measurements might be more dangerous for the companies themselves (Berrone, Gelabert and Fosfuri, 2009).

In addition, the average pages of the audited report are 77 pages, compared to only 34 pages on average for non-audited reports. It is perhaps farfetched to say the audited CSR reports have higher report quality than non-audited reports, but to some extent it is possible to conclude that assured CSR reports disclose more, and potentially across a greater number of topics/indicators and information than reports that are not assured.

On the contrary, by reviewing the CSR reports that have not been audited, two circumstances have been observed. First, the management of these business declared that the financial information in their CSR report was in line with the audited financial annual report, but they did not mention the quality of non-financial information of the CSR report. Second, all the un-audited reports stated that their CSR reports were agreed by the company's board of directors and all directors.

Whether or not GRI

As also presented in Table 4 is that 74% (17 out of 23) of businesses adopted GRI

guidelines as a reference to prepare their CSR reports. As mentioned in the literature, all the CSR reporting of the SSE50 have to comply with “the Guidelines on Listed Companies' Environmental Information Disclosure”, which is released by the Shanghai Stock Exchange (CSR report, 2014). It contains a set of detailed guidelines about how companies report their sustainability information. Thus, companies do not necessarily need to prepare their reports using other guidelines. This is exactly how non-audited CSR reports work toward a basis of compilation. And just because the domestic compulsory guidelines are enough for companies to follow to disclose their sustainability information, companies who also choose other formats to follow could be perceived to be under the influence the selected format has on them. Therefore, this answer could contribute to the research question four (Section 4.5).

It was found that the percentage of audited reports that used the GRI framework to produce CSR reports reached 100%. Put another way, of the 14 audited reports mentioned in last section of this chapter, all adopted GRI guidelines without exception. It is particularly gratifying that the adoption rate of GRI among all the SSE50 still remains at a level of more than half, more specifically 64%. Moreover, according to Golden Bee (2013), and as discussed in the literature chapter of this research, the GRI guidelines have become the main reference basis for helping Chinese companies to produce CSR reports. To sum up, the pervasive use of the GRI framework as a disclosed guide may suggest that the indicators in G3 or G4 are able to comprehensively and systematically reflect the companies' corresponding performance and therefore attract

the attention of stakeholders.

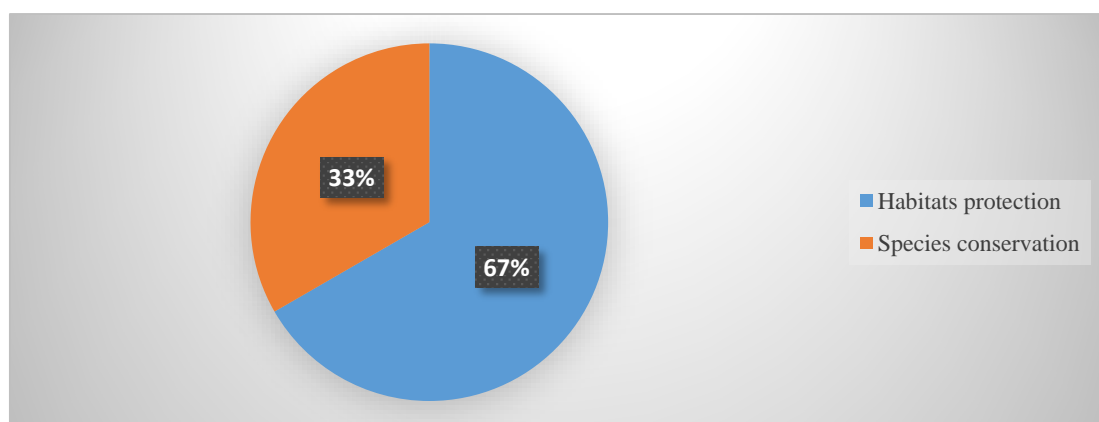
4.4 The Content of Reported Biodiversity Information

In this section, I will address and analyse the third research question, namely, the biodiversity information that is reported by Chinese SSE50 companies.

The analysis of the 102 disclosures in both English and Chinese language CSR reports revealed that the biodiversity reporters tended to reflect the primary subjects associated with the following items of the spectacle.

- Habitats protection: Tree planting, Activities of habitats protection (except for tree planting), Identification of environmental pollution (in relation to its impact on biodiversity)
- Species conservation: Domestic animals, Wildlife (non-domesticated animals)

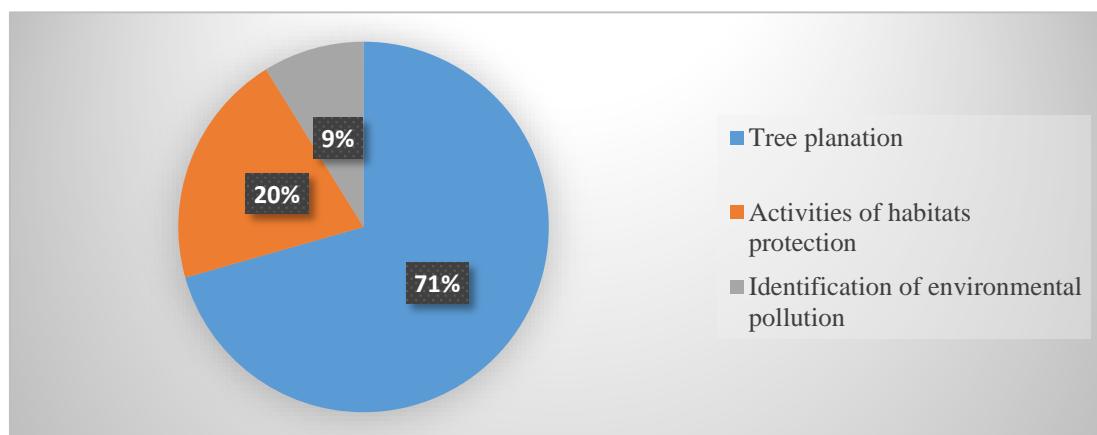
Figure 5. Content of biodiversity disclosures



As discussed in the previous chapter, in order to work out what biodiversity information is produced by the eligible companies, I coded 102 disclosures into particular themes. As a result, the disclosures can be divided into two major themes (regardless of English and Chinese language reports), protecting habitats and species conservation (see Figure 5). Under each theme, it is found that there are 68 biodiversity disclosures that pertain to habitats protection and 34 disclosures that talk about species conservation. According to the pie chart, nearly 67% (68 out of 102) biodiversity disclosures describe habitats protection information, which is about twice (33%) as many as species conservation information.

In order to investigate what biodiversity information is reported by Chinese SSE50 companies, there are also some subthemes under each main theme which will be presented in the following parts.

Figure 6. Content of biodiversity disclosures – Habitat protection



The theme of habitat protection includes three subthemes, tree plantation, activities of

habitat protection and identification of environmental pollution (all further explained below). Although the tree planting could be included in the habitats protection, a large proportion of tree planting disclosures led to the decision to keep it separate so that it could be analysed separately. As is shown in Figure 6, 71% of disclosures described tree plantation information on the CSR reporting. Those are involved in the disclosure of afforestation activities, green coverage area, development of green belt and the progress they made compared to the previous years. It is also worth noting that 57% (13 out of 23) of companies released the tree planting information on their CSR reports. A typical example is shown below.

“Petro China values the protection of biodiversity. Since 2008, Petro China employees who have actively participated in voluntary tree planting have totalled 3 million person-times, planting a total of 20 million trees, with an increase of over 4,000 hectares in green areas” (Petro China, 2013, pp. 32).

For the other two aspects, habitat protection activities and environmental pollution information account for 20% and 9% respectively. First, activities of habitat protection, as its name implies, consists of activities that companies undertook to preserve habitats, such as prevention of excessive deforestation, wetland restoration, the management of mining and landscape restoration. This information comes from 39% (nine out of 23) of firms. Importantly, these disclosures are presented in the way of specific projects, which normally contain the information of the location, the specific protection measures companies took, how much the company invested and the results they achieved. For example:

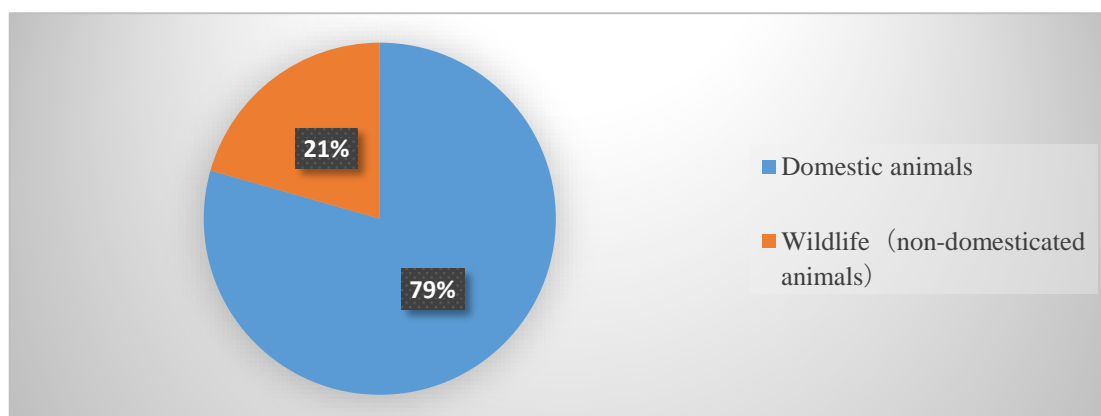
“The national wetland protection project supported by Shaanxi Branch. Shaanxi Branch conducted an equity trust business for RMB300 million that strongly supported the development and improvement of the national wetland protection project in Chanba, Xian, significantly improved local natural environment, and drove the building of ecological civilization” (Industrial and Commercial Bank, 2013, pp. 40).

Second, the remaining 9% of disclosures recognise the influence of environmental pollution on habitats. The importance of all this pollution related information is in relation to its impact on biodiversity. For example, some of it relates the companies’ business operations to emissions of sewage, solid waste and noise. The others relate to the achievements the companies made by controlling certain environmental pollution. Moreover, these disclosures are extracted from six (26%) companies’ CSR reports and most of them belong to the mining and manufacturing industries. An example is listed below.

“Wastewater excluding that used for oilfield reinjection was physically, chemically and biochemically treated before being treated through artificial wetlands, improving the local ecological environment of the desert and enriching biodiversity” (Petro China, 2013, pp. 32).

In summary, all the habitats protection disclosures were related to the design and provision of shelter for animals in a way of preserving plants and landscape, thereby promoting biodiversity conservation.

Figure 7. Content of biodiversity disclosure – Species conservation



The rest of the biodiversity disclosure in companies' CSR reports is developed with respect to species conservation. From a bird's eye view, all this species information could be classified into two categories according to the habitat of the species, say domestic animals and wildlife (non-domesticated animals). The reason for such a distinction is because many nations and NGOs have increasingly paid attention to and been dedicated to wildlife conservation. Moreover, numerous independent non-profit companies also promote many wildlife conservation causes (Geist, Mahoney and Organ, 2001). Figure 7 depicts the percentage of disclosure of domestic animals and wildlife (non-domesticated animals). Domestic animals include three kinds of classification: (1) commensals, adapted to a human beings, like dogs and cats; (2) prey animals used for food, like cows and sheep; and (3) targeted animals for draft and non-food resources, like horses and donkeys (Simmons et al., 2001). Wildlife is defined as the non-domesticated animal species that grow or live wild in a place without being involved with humans (Usher, 1986). From the pie chart, it can be clearly seen that domestic animals take up 79% of species conservation information, in comparison to 21% of

wildlife disclosure.

First, domestic animals related passages come from nine companies, which hold 39% (nine out of 23) of biodiversity disclosing companies. Furthermore, most of the disclosure provides narratives about what measures the company adopted and how much money or time the company devoted to the protection of animals. The other disclosures recognise the current difficulties the species involved, such as facing biodiversity loss. An example is shown below.

“The zoo suffered huge losses as the buildings and cages were destroyed and animals had to be transferred to other places.” (Petro China, 2013, pp. 59).

The above quotation refers to Petro China-provided support, and voluntary services to a zoo to help it resume operations and preserve local natural and cultural heritage.

Second, the disclosure of wildlife accounts for 21% of species conservation disclosures, but it merely accounts for 7% (seven out of 102) of all biodiversity disclosure. In addition, these seven disclosures only come from four companies (17%) and three of four companies are in the financial sector. Thus, the biodiversity information primarily relates to investment in measures to set up wildlife channels to thereby protect animals and minimize the negative impact of projects on wildlife and therefore to preserve the original ecology. For example:

“Minsheng bank helps Yao to build fish ponds nearby and on Yangyu Island, beginning the culture of wild large yellow croakers. In 2009, Yao registered Mingdao Company and made

a further attempt of building incubator to revive wild large yellow croakers.” (CHINA MINSHENG BANK, pp. 22)

4.5 The Potential Influence of GRI on the Reporting of Biodiversity Information

This section will identify and explain the fourth research question, namely, the potential influences of GRI on the reporting of biodiversity information by Chinese SSE50 companies.

In order to detect the potential influences of the GRI on biodiversity information of the SSE50 companies' CSR reports, the biodiversity indicators of GRI are necessary to be shown again to analyse the connection between international guidelines and disclosed information by the Chinese companies in this research.

G3-EN11: Operational sites owned, leased, managed in, or adjacent to protected areas and areas of high biodiversity value outside protected areas.

G3-EN12: Description of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.

G3-EN13: Habitats protected or restored.

G3-EN14: Strategies, current actions and future plans for managing impacts on biodiversity.

G3-EN15: Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.

As stated earlier, within biodiversity reporting companies, there were 74% (17 out of 23) which adopted GRI guidelines to prepare their CSR reports, and similarly within the whole data set, the GRI used reports still account for more than half, 64% (28 out

of 44). The coding result of the biodiversity disclosure shows that there are 95% (97 out of 102) of disclosures that are consistent with the GRI indicators and there are only five disclosures that are irrelevant to the GRI indicators. Taken together, the results reveal that 74% of biodiversity related reports declared that they refer to GRI to report sustainability information and in effect 95% disclosed biodiversity information associated with GRI. An inference to be drawn from this situation is, although only 64% of companies claimed that their CSR reports are GRI formatted, in fact the GRI formatted CSR reports on SSE50 may have the possibility to be greater than 64%. This is because the format of GRI and Chinese domestic guidelines may have overlaps. Some typical examples are shown below.

“In 2013, a project was started to restore the marine environment and fishery resources of the subsea pipeline project for the Second West-East Gas Pipeline” (Petro China, 2013, pp. 31). -- In line with G3-EN13

The above disclosure is extracted from the CSR report of the Petro China Company Limited (2013), which English language report claims that it is prepared by using the GRI as a guideline. Therefore, the disclosure of biodiversity related information should fulfil the requirement of GRI indicators.

“海螺所有的水泥工厂，在设计在建设时，就特别注重与周边生态环境的协调和相融，尽可能保持周边地区原始风貌不变，并在厂区、矿区及道路两侧实施美化绿化，建设花园式工厂，各子公司厂区绿化面积占可绿化面积的 90% 以上” (Anhui Conch Cement, 2014, pp. 12). -- In line with G4-EN11

Translation: “...The Company kept the original ecological resources remain the same as far as possible, and the green coverage of the factory area reached 90%” (Anhui Conch Cement,

2014, pp. 12). -- In line with G4-EN11

The above translated statement comes from the report of Anhui Conch Cement Company Limited, which Chinese language report has no declaration of using GRI as a framework to produce their CSR report. However, its effective biodiversity disclosure is in accordance with GRI guidelines.

It is not possible to see whether the reports have simply followed GRI or to judge whether the reports comply with GRI. This is because the reports may go along with GRI guidelines even though they do not declare they are GRI adopted reports. Put another way, to some extent, it suggests that the GRI guidelines have implied influences on the reporting of biodiversity information of Chinese SSE50 companies.

For one thing, as mentioned in the research question two findings, 100% of biodiversity disclosed companies need to report information in accordance with “the Guidelines on Listed Companies' Environmental Information Disclosure”. However, only 74% of them claimed to have followed voluntary GRI guidelines to report biodiversity issues. Furthermore, in fact, as much as 95% of information relates to the GRI indicators. That is to say, the actual percentage of GRI adoption for Chinese CSR reporting is far beyond the declared level of usage. This may indicate that the GRI has a broader influence beyond just those that state their use of it.

To understand whether the GRI has a broader influence beyond just those that state their

use of it, tracing their history would be the effective practice. In 2000, GRI released the first version of the guidelines (G1), which is the first global framework for extensive sustainability reporting (GRI, 2015). In 2002, the second generation of the guidelines, (G2), was published (GRI, 2015). In 2006, the G3 guidelines were launched with the purpose of enabling companies to flexibly adapt to reporting their performance in major sustainability areas (GRI, 2015). In late 2006, the Shenzhen Stock Exchange released “Social Responsibility Guidance” to encourage listed companies to prepare CSR reports according to GRI guidelines (Wang and Yang, 2012). In January 2008, the State-owned Assets Supervision and Administration Commission (SASAC) issued a “Guidance of the Central Enterprises to perform Social Responsibility” (Wang and Yang, 2012). After that, in May 2008, the Shanghai Stock Exchange issued the “Guidelines on Listed Companies' Environmental Information Disclosure” which was designed to fulfil social responsibilities, address interests of stakeholders, and devote themselves to enhancing sustainable economic and social development (World-exchanges, 2009).

Accordingly, from the time sequence, it can be seen that the Chinese representative social responsibility guidance follows the pace of GRI guidelines. But more than that, Wang and Yang (2012) explicitly pointed out that the GRI guidelines are the key fundamental principle for the preparation of Chinese social responsibility guidelines. Moreover, many CSR reports of China's state-owned enterprises and multinational companies in China are produced referring to the GRI Guidelines. Apparently, Chinese

guidelines must have some similarities with GRI guidelines. That is to say, Chinese guidelines are influenced by GRI guidelines. Furthermore, as mentioned in the earlier chapter, the level of using of GRI guidance to produce Chinese CSR reports constantly remained a leading trend compared to both domestic and international guidance. Consequently, it can be understandable why there is 95% information of biodiversity disclosed companies' CSR reports in line with GRI indicators but only 74% of which claimed to use the GRI format.

In summary, the existing result of influence of GRI on the reporting of biodiversity information is under-researched, but now it is obvious that GRI guidelines have much influence on biodiversity disclosure of Chinese SSE50 companies from the above investigation. More essentially, the formation of local sustainability guidance on the basis of GRI guidelines enhances the influence from the source on accounting for biodiversity of Chinese CSR reporting.

4.6 The Difference in Amount and Content of Biodiversity Disclosure in English and Chinese

In this section, I will discuss the fifth research question, the difference in amount and content of biodiversity disclosure between English and Chinese language reports.

The results of this research question are explored based on the earlier GRI coding results, which are expected to make it possible to identify the difference in content of

biodiversity disclosure over English and Chinese language reports. This is because the GRI indicators were widely used in Chinese CSR reports of SSE50.

Figure 8. The Amount of Biodiversity Disclosure between English and Chinese Language CSR

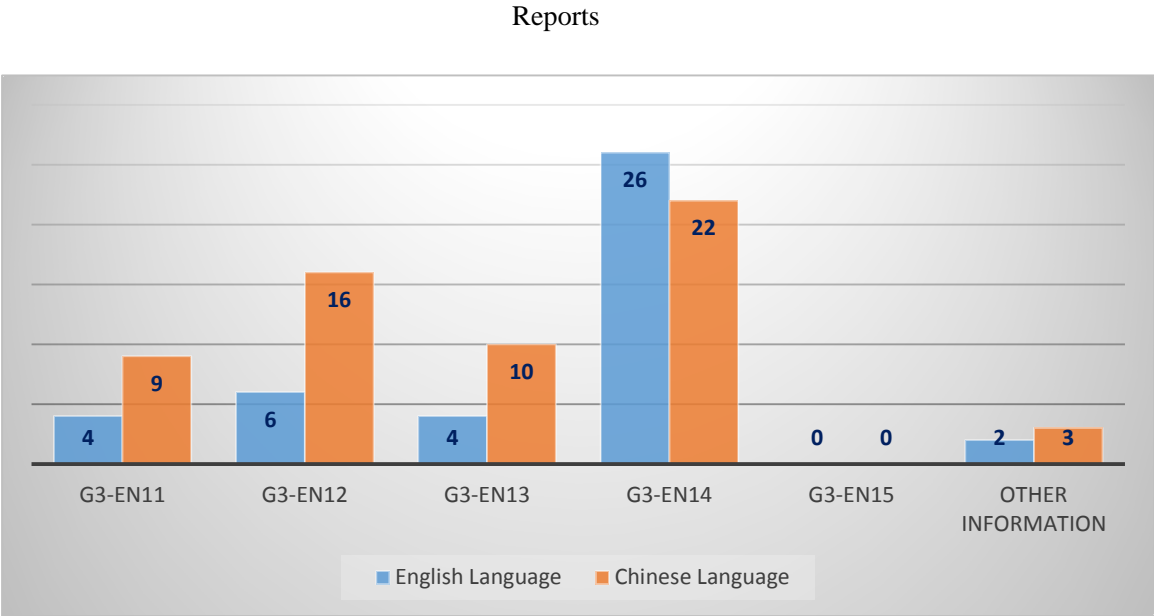


Figure 9 shows the position in amount and content of biodiversity disclosure between English and Chinese language reports among the 23 biodiversity disclosed companies over the periods either 2013 or 2014. The following paragraph will give the analysis from the point of view of amount and content respectively.

From an amount perspective, on the whole, the total number of Chinese language biodiversity disclosures is slightly larger than that of English language ones, 60 versus 42 (however, as discussed below the figures look different when the number of reporters in each language are taken into account). Specifically, first, for indicators of G3 EN11, EN12 and EN13, the amount of Chinese language disclosure basically is two times as

much as English language. The average number of English disclosures is five and that of Chinese disclosures is 12. Second, as can be seen from the chart, it happened that G3 EN15 has no disclosures in both Chinese and English language. One thing to note is that G3-EN15 is not disclosed by any company, yet G4-EN14 is. The result indicates that the companies and their stakeholders do not pay attention to the IUCN Red List species and national conservation species list, and the habitats influenced by operations. Although some biodiversity disclosures mentioned wildlife species, no disclosure mentions the “IUCN Red List” or “national conservation species”. Third, for indicator G3 EN14, at first glance, there is not a great deal of difference between English and Chinese language disclosure, but from the perspective of the whole number of disclosures within all indicators, the G3 EN14 shows a fourfold increase in the number of English language compared to G3 EN11, EN12 and EN13, and hold around twice the number of Chinese language compared to G3 EN11, EN12 and EN13. Furthermore, the number of English biodiversity disclosures surpasses Chinese biodiversity disclosures by 18% for the first and only time in G3 EN14. For the information that is irrelevant to GRI indicators, the situation reaches a bottom at only two and three disclosures in English and Chinese language.

The distribution of the amount of biodiversity disclosures between English and Chinese language reports may indicate something in the aspect of content preference. As is shown in Figure 8, the number of disclosures in two languages both witnesses a sharp rise in G3 EN14 indicator and peaks at 26 and 22 in English and Chinese language

respectively. There is no doubt that reports of two languages are more inclined to report present strategies, actions and future plans for directing influences on biodiversity.

Although there is not much difference in terms of number of biodiversity disclosure, it is important to be aware of the proportion of English and Chinese language CSR reports. Measured by the number of CSR reports, among 44 reports, only nine companies (20%) have English language reports. And among these nine English language reports, there are seven companies (78%) that have the biodiversity information. However, in the rest of the 35 Chinese language CSR reports, only 16 companies (46%) disclosed biodiversity related information, which is down 32% from the English language reports.

Measured by the number of biodiversity disclosures 42 are in English and 60 in Chinese (7:10). Under the condition that English disclosure is less than 30% of Chinese disclosure, there is still 18% English disclosure more than Chinese disclosure in G3 EN 14, and this is most likely to illustrate that compared to only Chinese using companies, the companies who have English language CSR reports would be happier to have report users see their biodiversity strategies. Essentially, these report users may possibly pertain to foreign listed companies.

Notwithstanding, the proportion of biodiversity disclosures between English and Chinese language reports remains steady in terms of G3 EN11, EN12 and EN13. That is to say, the treatment of disclosure of habitats protected, significant impact of activities

on biodiversity in protected areas and many kinds of areas which have biodiversity is the same between English and Chinese reports. Similarly, the attitude toward G3 EN 15 can better show the consistency in English and Chinese language reports. That is the reports of their companies did not state any species in both IUCN red list species and national conservation list species. It may imply that the Chinese management do not think that the IUCN red list species and national conservation list species are valued for stakeholders, no matter whether in domestic or foreign listed companies.

In, addition, from the result of research question one, in general, the amount of biodiversity disclosure of companies who produced English language reports appear more than the amount in companies who only have Chinese language reports.

To sum up, findings revealed that English language CSR reports disclosed more biodiversity information than those of Chinese language. This could indicate that the companies who have the English language CSR reports would like to have report users see their biodiversity strategies more.

4.7 Summary

This chapter provides both detailed results and discussion of biodiversity disclosures for each research question according which analysed CSR reporting in the Chinese SSE50 in either 2014 or 2013. The next chapter will give the overall conclusion of this research, as well as the potential areas for future research.

Chapter 5: Conclusions and Recommendations for Future Research

5.1 Summary of Findings

In this study 44 CSR reports from 50 Chinese companies listed on the SSE were analysed to investigate the practice of biodiversity disclosure. Reports were produced in either Chinese or English language by companies from a range of industries. Biodiversity disclosures within this sample of reports were identified first via a keyword search and then by undertaking a thorough reading of each of the reports. This study has some considerations for academics and practitioners. Because the study focusses on one rapidly emerging developing country, China, it provides an exploratory one of biodiversity reporting within Chinese companies, something that is currently lacking in the extant literature. Specifically, it contributes to the overall literature on biodiversity reporting – an emerging area which is attracting increased attention. Second, it provides insight into this context – a context which has been under researched this far.

It was found that 23 of out of 44 companies produced biodiversity information in their CSR reports. Although the disclosure of biodiversity information has an increasing trend in either 2013 or 2014, analysed on a simple number count, the performance of reporting biodiversity related information, of biodiversity information contained companies, is still just at a moderate level. Second, in relation to industry representation of biodiversity reporting companies, both financial and manufacturing industries were

the most represented whilst lower number of biodiversity reporters occurred in companies from the construction, agriculture, mining and transportation industries. With respect to language, there are seven out of 23 companies that have chosen to report in English. Further, there are 14 out of 23 CSR reporting that have the assurance statement by the third professional agency. The average pages of the audited report are 77 pages and only 34 pages in average for non-audited reports. In addition, 17 out of 23 business claimed that they adopted GRI guidelines as reference to prepare their CSR reports.

Third, in relation to the content of disclosures, disclosures on habitat protection, especially tree planting, were the most common. The remaining disclosures were related to species conservation, which refers to domestic animals and wildlife. The companies primarily disclose habitat protection and secondly disclose species conservation and among them tree planting and domestic animals protection dominate the majority. However, there is very little reporting on other activities of habitat protection and endangered species conservation. Fourth, it suggests that the GRI guidelines have a high level of influence on biodiversity disclosure of the Chinese SSE50 since the disclosures relating directly to one of the GRI biodiversity indicators. More than that, this study makes it clear that the formation of Chinese local sustainability guidance on the basis of GRI guidelines enhances the influence from the source on accounting for biodiversity of Chinese CSR reporting.

Fifth, that data shows that the English language biodiversity disclosure surpasses those in the Chinese language in both the amount and content perspective, which could indicate that there is more demand for biodiversity disclosures from English language stakeholders and a lack of demand within the Chinese context. How according to the difference in content between two languages, the proportion of biodiversity disclosures primarily remain steady. Especially, in terms of no reporters mention any species relates to IUCN red list species and national conservation list species, Chinese management may do not think that those endangered species are valued for massive stakeholders, no matter whether in domestic or foreign listed companies.

5.2 Contributions and Implications

The study makes several contributions to the biodiversity disclosure literature. First, previous studies in the field of biodiversity reporting have mostly concentrated on developed countries (Rimmel and Jonall, 2014; Liempd and Busch, 2014; Samkin et al., 2014). This study is one of the few biodiversity related studies in a developing country, and, as far as the researcher is aware, is the only academic research on this issue studying the Chinese context. This study therefore contributes to understanding the current practices of Chinese companies in relation to biodiversity reporting. In addition, this exploratory study is developed based on recent CSR reports analysing CSR reports from 44 SSE50 companies in 2013 or 2014. Last but not least, prior research has focused extensively on the analysis of Chinese language use only CSR reporting for biodiversity disclosures. However, with the comparison in both English

and Chinese language to identify the difference in amount and content of biodiversity disclosure, this study contributes to both the understanding of different attitude of companies towards to their stakeholder and the limited academic literature on biodiversity reporting.

This research also has some significant implications. First, the study points out that there are limited biodiversity disclosures in Companies' CSR reports. While it is recognised that some companies do have biodiversity disclosure, the disclosure should be more comprehensive and multifaceted. That is to say, the disclosure is expected to be reported with specific measures, objectives, and even difficulties companies encounter. For achieving this, stakeholders should put more pressure on companies to make sure they understand the importance of protecting biodiversity. Managers should take responsibility for biodiversity reporting also. In addition, companies should be expected to pay attention to the situation of IUCN red list species and national conservation list species and disclose of them in the CSR report. Last but not least, the purpose of CSR reporting is enable business to understand their influences of wide range of environmental issues and to be more aware of the challenges and changes they face. Thus, this research encourages the companies could also disclose some negative information on biodiversity issue, like difficulties and threats companies face when implement the biodiversity conservation.

5.3 Limitations and Avenues for Future Research

There are several limitations of this study and also some avenues for future research.

First, the investigation into the practice of biodiversity disclosure undertaken here is only based on companies' CSR reports, websites and annual reports are excluded. As a consequence, it is recognised that the results of this study may be incomplete in relation to the total amount of biodiversity information disclosed across multiple channels. Future research could utilize various sources of companies' information to address the biodiversity issue and to get a more comprehensive analysis of biodiversity disclosures.

Second, analysing the data only in one year report and in one developing country may present limitations. Future research could be extended by looking at reporting trends across years. In addition, examining the practice of biodiversity disclosure within different national and regulatory contexts could also extend knowledge of the practice of biodiversity reporting.

Third, this study identifies the biodiversity disclosure by using the judgement of the researcher. The effects of this have attempted to be reduced through careful explanation and justification of method, however, it is acknowledged that different individuals may have different judgements to measure the biodiversity information. Future studies could be extended to include multiple coders to reduce subjectivity.

As with the given limitations and suggested future research, there are several theories

which could be considered in evaluating the findings in this study and their analysis.

First, given that the English language CSR reports disclosed more biodiversity information than that of Chinese language, which may indicate that the companies who have the English language CSR reports would like to have report users to see their biodiversity strategies more, future research could apply stakeholder theory to explore the demand for biodiversity information from local Chinese stakeholders and see whether demand does exist or not and the effect that this has on reporting. Whether it is different to stakeholder demand in other contexts could also be explored. According to Hossain, Alam, Islam, and Hecimovic (2015), managers believe they have an active role in influencing CSR report other than being passively implement by stakeholders. Therefore, the results provides information for practitioners and researchers to investigate further whether biodiversity reporting is stakeholder-driven or produced due to organisational or other obligations.

Second, because the companies are producing similar disclosures, it could indicate that the GRI has a broader influence beyond just those that state their use of it. An institutional theory could be applied to further investigate this situation in the future.

Third, the pervasive use of GRI framework as a disclosed guide may suggest that the indicators in G3 or G4 are able to comprehensively and systematically reflect the companies' corresponding performance and therefore attract the attention of

stakeholders. Therefore, the influence of GRI could be analysed further through institutional theory or legitimacy theory.

For example, legitimacy theory could be utilised to analyse biodiversity reporting based on the findings in this research. This is because according to (Deegan, 2010), a social contract exists between the business and the society and thus the business to some extent is under pressure from the public which could push the business to justify and restrict their behaviours. In this study, the pervasive use of GRI guidelines as a disclosed guide to attract the attention of stakeholders may reveal that business endeavour to legitimise their behaviours in line with the norms of the public. The disclosure of biodiversity issues by SSE50 CSR reporters might be the result of international and/or local attitudes to the conservation of biodiversity. For companies who have biodiversity disclosures could be considered to make the disclosures as a vehicle to establish a positive image with the public.

5.4 Final Statement

This research was motivated by the consideration of biodiversity loss and wanting to know more about the practice of biodiversity disclosure by Chinese companies. Through the research I have obtained a better understanding of the extant practice of biodiversity disclosure in Chinese SSE50 CSR reports. Although the growth of CSR reporting continues its upward trend in Chinese companies, the findings in this study of the number and the content of biodiversity disclosures in SSE50 leaves me

disappointed. It appears that the companies analysed have not realised the importance of biodiversity for companies and do not have the impendent desire to protect biodiversity. Notwithstanding, according to the finding of a high level of influence of GRI on biodiversity disclosure of SSE50 as well as an indication that there may be more demand for biodiversity disclosures from English language stakeholders, I think the practice of biodiversity disclosure in CSR reporting under Chinese context will improve with the growing impact of globalisation.

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Appendix A

List of All Biodiversity Disclosures in English and Chinese

English language report:

1. By 2013, the green coverage of the work area reached 62.5%, and the survival rate of the 20 acres of halophytes planted is above 90%. (Petro China, pp. 32)
2. Since 2008, PetroChina has actively participated in voluntary tree planting, leading to an increase of over 4,000 hectares of green areas. (Petro China, pp. 33)
3. Since 2008, PetroChina employees who have actively participated in voluntary tree planting have totaled 3 million person-times. (Petro China, pp. 33)
4. Planting a total of 20 million trees, with an increase of over 4,000 hectares in green areas. (Petro China, pp. 33)
5. Wastewater excluding that used for oilfield reinjection was physically, chemically and biochemically treated before being treated through artificial wetlands, improving the local ecological environment of the desert and enriching biodiversity. (Petro China, pp. 32)
6. While working in environmentally sensitive areas, we strive to minimize the occupation of arable land, maintain good soil and water conservation, take vegetation restoration measures, protect biodiversity, strive to restore the landscape of work areas, and protect the habitats and the ecological environment. (Petro China, pp. 31)
7. In 2013, a project was started to restore the marine environment and fishery resources of the subsea pipeline project for the Second West-East Gas Pipeline. (Petro China, pp. 31)
8. The zoo suffered huge losses as the buildings and cages were destroyed and animals had to be transferred to other places. (Petro China, pp. 59)
9. Through recycling of domestic water in the oilfield and innovative use of mixed water irrigation technology, more than 200,000 cubic meters of irrigation water was saved annually. Through environmental and ecological wetland projects, it protected native wetland plants, and planted adaptable halophytes. (Petro China, pp. 32)
10. The “10,000-mu Ecological Demonstration Forest for Soil & Water Conservation” project was also almost accomplished. In Xinjiang, five sessions of skill training and four sessions of training for administrators and technicians were held in six poverty alleviation counties, with 370 persons being trained in the whole year. (Petro China, pp. 55)
11. FOSUNPHARMA values the protection of biodiversity. None of its offices and manufacturing facilities is located in natural reserves in order not to destroy primitive vegetation. It does not use precious animals in animal studies, either. (Fosun Pharmaceutical, pp. 58)
12. FOSUNPHARMA values the protection of biodiversity. None of its offices and manufacturing facilities is located in natural reserves in order not to destroy

primitive vegetation. It does not use precious animals in animal studies, either. (Fosun Pharmaceutical, pp. 58)

13. It emphasizes the protection of biodiversity and establishes a sound animal laboratory management system to fully guarantee animal benefits. (Fosun Pharmaceutical, pp. 109)
14. Some of the drugs producing members of FOSUNPHARMA, including Yaoyou Pharmaceutical and Chongqing Pharmaceutical Research Institute, conducted animal experiments in 2013. They primarily used mice and rarely used rabbits in animal studies. Carcasses of these animals from the experiments were given to qualified service providers for cremation. These enterprises have a sound animal laboratory management system and technical regulations on the purchase, raising, experiment, and disposition of laboratory animals. Despite the fact that animals are used in experiments, they try their best to make sure that these animals' benefits are taken care of. Their basic needs are satisfied and their pains are reduced to a minimum to fully realise "laboratory animals are healthy and happy while alive and die peacefully." (Fosun Pharmaceutical, pp. 58)
15. Chongqing Pharmaceutical Research Institute is a pharmaceutical research enterprise. During research and development, they need to perform animal experiments. Nevertheless, they have been strictly abiding applicable requirements of the Laboratory Animal Law by reasonably and legitimately using laboratory animals in animal experiments in order to research and develop drugs. Under the premise that it is allowed by drug laws, regulations, and technical criteria, they try their best to remove the pyrogen test and replace it with the endotoxin determination method while establishing product research and development standards in order to minimize the use of rabbits or not to use rabbits at all. (Fosun Pharmaceutical, pp. 58)
16. It emphasizes the protection of biodiversity and establishes a sound animal laboratory management system to fully guarantee animal benefits. (Fosun Pharmaceutical, pp. 109)
17. Around 2000, he found that the fishing resources were decreasing continuously, it became harder and harder to fish in coastal waters, and some common species of fish also became rarer. (China Minsheng Bank, pp. 22)
18. Mr. Yao has begun the business of high seas fishing since 1990s and owned dozens of fishing boats at the prime of his business. (China Minsheng Bank, pp. 22)
19. He came to the Department of Ocean and Fisheries and wanted to collateralize the island. (China Minsheng Bank, pp. 23)
20. Ocean fishery is a risky industry for many banks so they are very discreet to step in, which directly causes the difficulty for customers in this industry to raise fund and develop their business, but, at the same time, leaves a great financial market of ocean fishery. (China Minsheng Bank, pp. 23)
21. According to his years of experience in fishing and wide research, Yao discovered the great prospects of reviving and exploiting the wild stock of large yellow croakers. (China Minsheng Bank, pp. 22)
22. He built fish ponds nearby and on Yangyu Island, beginning the culture of wild

- large yellow croakers. In 2009, Yao registered Mingdao Company and made a further attempt of building incubator to revive wild large yellow croakers. (China Minsheng Bank, pp. 22)
23. For the development of Yangyu Island, I used all the RMB 300 million I'd made before and sold several shops and all the fishing boats, leaving me nothing to buy fry. What I needed most then was funds for fry; without fry this year, I will lose hundreds of millions yuan. (China Minsheng Bank, pp. 22)
 24. Now, the area has been built into a city wetland spot that combines ecological functions, scientific popularization, tourism and leisure, producing positive social and economic effect in maintaining regional ecological balance, building pleasant living environment and driving the development of local economy. (Industrial and Commercial Bank, pp. 23)
 25. Zhejiang Branch has emphasized on supporting environmental protection industries for flood control in the specific part of local rivers, ecological protection and restoration, riverside landscape, water and soil resources protection, environmental protection, energy saving and emission reduction. (Industrial and Commercial Bank, pp. 40)
 26. Xian, significantly improved local natural environment, and drove the building of ecological civilization. (Industrial and Commercial Bank, pp. 40)
 27. In the reporting period, the Head Oce planted around total 3300 trees, and maintained around total 2,100 trees, enhancing the voluntary tree planting awareness among the employees and intensifying employees' sense of responsibility in planting, protecting and taking care of trees. (Industrial and Commercial Bank, pp. 44)
 28. The national wetland protection project supported by Shaanxi Branch. Shaanxi Branch conducted an equity trust business for RMB300 million that strongly supported the development and improvement of the national wetland protection project in Chanba, Xian, significantly improved local natural environment, and drove the building of ecological civilization. (Industrial and Commercial Bank, pp. 40)
 29. The Bank has always made it one of the ways to fulfill its corporate social responsibilities by planting trees and improving ecological environment. (Industrial and Commercial Bank, pp. 44)
 30. Proposing all employees of the Bank to strengthen the protection of wild animals: In 2013, the Bank launched a proposal calling all employees to build the awareness of protecting wild animals, strengthened the education of protecting wild animals to Bank's personnel for exit, and advocated the organisations of all levels and employees to develop and participate in various public activities on building ecological civilization and protecting natural environment, to follow "Equator Bank" concept in daily behavior habits, and to cultivate the conscientiousness of social responsibility and citizen quality. (Industrial Bank, pp. 77)
 31. According to the related project data, there will be emissions of sewage, solid waste, noise and other pollutants in the construction and operation of project, a certain scale of land requisition and demolishing will be involved, and there are animals

- and plants under key production along the railway line. (Industrial Bank, pp. 120)
32. In the affected areas, there is a small quantity of key animals under state level and provincial protection, although the project construction and operation would have a little impact on these animals, it was required to set monitoring and protection facilities in accordance with the relevant national regulations. (Industrial Bank, pp. 120)
 33. Industries covered by Industrial Bank's project financing under the Equators Principles as at December 31, 2012: A Agriculture, forestry, animal husbandry and fishery. (Industrial Bank, pp. 119)
 34. Focusing on the construction of Shandong Peninsula Blue Economic Zone, Jinan Branch increased the credit extension to blue economy-related industries such as marine fishery, marine chemistry industry, marine transportation industry, marine equipment manufacturing industry and energy & mines industry, covering such areas as freight port, sea farming, cargo transport and shipbuilding, which effectively supported the marine economy development of Shandong. (Industrial Bank, pp. 59)
 35. As at the end of December 2013, the Bank accumulatively provided green financing RMB68.56 billion to water resources protection and watershed management projects, involving industrial water saving, sea water desalination, sewage plant construction and upgrading, sewage pipe network, sludge disposal, water governance, comprehensive water environment improvement, recycled water, heavy metal pollution prevention and control, and other fields. (Industrial Bank, pp. 71)
 36. Protect Biodiversity: In the construction process, we make investigations of the ecological environment and conditions of animals and plants in advance and draw protection plans accordingly. We also enhance employees' awareness on ecological protection, and label rare animals and plants in the construction areas. Moreover, we implement measures, such as setting up reserves and wildlife channels and migrating rare animals and plants, to protect animals and plants in order to minimize the impact of our projects on wildlife and to maintain the original ecology of the project to the fullest extent. (China State Construction Engineering Corporation, pp. 49)
 37. Future Ark project, with a total covering area of 9.53 square kilometers and construction area around 8.5 million square meters, is the sub-center of Guiyang which integrates world-class tourist spot, livable city and ecological corridor. (China State Construction Engineering Corporation, pp. 49)
 38. At the initial stage of design, we succeed in our application for the first batch of national ecological demonstration zones. (China State Construction Engineering Corporation, pp. 49)
 39. In the implementation of this project, it is our guiding principle in designing to respect the local culture, promote green design and realise pandas' disease control, and our main concern to incorporate the natural, ecological and residential characteristics of Linpan in Western Sichuan into consideration. (China State Construction Engineering Corporation, pp. 93)

40. The Bank's balance of loans to agriculture, forestry, animal husbandry and fishery recorded RMB 9.7 billion, an increase of 3.057 billion or 46.02% over the previous year. (China Citic Bank, pp. 20)
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42. Balance of loans to agriculture, forestry, husbandry and fishery stood at RMB 9.70 billion, an increase of 46.02%. (China Citic Bank, pp. 5)

Chinese language report:

1. 种植各类乔木花草 5000 多棵，新增绿地 1000 平方。(China Northern Rare Earth, pp. 14)
2. 种植各类乔木花草 5000 多棵，新增绿地 1000 平方。(China Northern Rare Earth, pp. 14)
3. 公司坚持生产经营和环境保护相协调的原则，水泥工厂从设计到建设，都非常注重与周边生态环境的协调统一，尽可能保持周边地区原生态不变，并最大限度的实施美化绿化，厂区绿化面积达 90% 以上。(Anhui Conch Cement, pp. 10)
4. 海螺所有的水泥工厂，在设计与建设时，就特别注重与周边生态环境的协调和相融，尽可能保持周边地区原始风貌不变，并在厂区、矿区及道路两侧实施美化绿化，建设花园式工厂，各子公司厂区绿化面积占可绿化面积的 90% 以上。(Anhui Conch Cement, pp. 12)
5. 公司坚持生产经营和环境保护相协调的原则，水泥工厂从设计到建设，都非常注重与周边生态环境的协调统一，尽可能保持周边地区原生态不变，并最大限度的实施美化绿化，厂区绿化面积达 90% 以上。(Anhui Conch Cement, pp. 10)
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7. 2014 年，朔黃鐵路遵循“擴綠、提檔、造景、疏通、速生、密植”的綠化理念，生態建設投資 4,451 萬元，美化鐵路沿線和周邊環境；神朔鐵路新增綠化面積 2,946m²，其中玫瑰籬 103m²、金葉榆 93m²、檜柏綠籬 105m²、苜蓿 2,645m²；共種植植物 640 株，其中樟子松 92 株、新疆楊 486 株、丁香 62 株。(China Shenhua Energy, pp. 81)
8. 生態建設：水土保持與生態建設資金投入 3.29 (億元)；新增綠化面積 2,507.34 (萬平方米)。(China Shenhua Energy, pp. 97)
9. 準能公司按照 0.45 元/噸煤提取綠化費用，專項用於土地復墾。依托礦區經復墾後形成的土地資源和綠化後形成的植被體系，全力打造綠色、節能、集約、休閒為一體的現代化農業產業鏈。2014 年，投入生態建設資金 2,507.51 萬元，新增綠化面積 110.42 萬平方米，共新增種植樹木 147.96 萬株、地被 44.95 公頃，綠化復墾率達 85% 以上；黑岱溝露天煤礦通過“首批國家級綠色礦山試點單位”驗收，哈爾烏素露天煤礦獲批“第四批國家級綠色礦山試點單位”。(China Shenhua Energy, pp. 81)
10. 鐵路沿線生態建設：公司鐵路業務着力抓好鐵路沿線生物防沙、綠化佈置和養護工作，保護並顯著改善沿線生態。2014 年，朔黃鐵路遵循“擴綠、提檔、造景、疏通、速生、密植”的綠化理念，生態建設投資 4,451 萬元，美化鐵路沿線和周邊環境；神朔鐵路新增綠化面積 2,946m²，其中玫瑰籬 103m²、金葉榆 93m²、檜柏綠籬 105m²、苜蓿 2,645m²；共種植植物 640 株，其中樟子松 92 株、新疆楊 486 株、丁香 62 株。(China Shenhua Energy, pp. 81)
11. 在土地復墾過程中因地制宜，形成不同種類、不同組合類型的生物群落，增

加礦區物種和生態的多樣性，同時發展經濟作物、觀光旅遊等產業，為當地居民增收，實現生態和諧發展。(China Shenhua Energy, pp. 80)

12. 公司鐵路業務着力抓好鐵路沿線生物防沙、綠化佈置和養護工作，保護並顯著改善沿線生態。(China Shenhua Energy, pp. 81)
13. 井工礦區生態建設：公司依據礦區生態承受能力，採用開採前治理、開採中保護、開採後恢復穩定的生態治理模式，通過井上井下互動、大範圍治理、增強區域生態環境功能等措施，着重抓好沉陷區防治、排矸（土）場治理與礦區復墾綠化，有效促進礦區生態環境恢復和改善。2014 年，神東煤炭集團完成採煤沉陷區治理面積 5 平方公里，栽植各類喬灌木 321 萬穴，生態建設工作有序推進；神東補連塔煤礦、哈拉溝煤礦、布爾台煤礦被國土資源部確定為第四批“國家級綠色礦山試點單位”。(China Shenhua Energy, pp. 80)
14. 準能公司按照 0.45 元/噸煤提取綠化費用，專項用於土地復墾。依托礦區經復墾後形成的土地資源和綠化後形成的植被體系，全力打造綠色、節能、集約、休閒為一體的現代化農業產業鏈。2014 年，投入生態建設資金 2,507.51 萬元，新增綠化面積 110.42 萬平方米，共新增種植樹木 147.96 萬株、地被 44.95 公頃，綠化復墾率達 85% 以上；黑岱溝露天煤礦通過“首批國家級綠色礦山試點單位”驗收，哈爾烏素露天煤礦獲批“第四批國家級綠色礦山試點單位”。(China Shenhua Energy, pp. 81)
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葉榆 93m²、檜柏綠籬 105m²、苜蓿 2,645m²；共種植植物 640 株，其中樟子松 92 株、新疆楊 486 株、丁香 62 株。(China Shenhua Energy, pp. 81)

16. 在土地復墾過程中因地制宜，形成不同種類、不同組合類型的生物群落，增加礦區物種和生態的多樣性，同時發展經濟作物、觀光旅遊等產業，為當地居民增收，實現生態和諧發展。(China Shenhua Energy, pp. 80)
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19. 露天礦區生態建設：公司露天礦區採礦作業計劃與復墾計劃同步，採用內排土工藝，最大程度減少土地佔用，保證排土場的地質結構及景觀與周圍未開採地區協調一致。在土地復墾過程中因地制宜，形成不同種類、不同組合類型的生物群落，增加礦區物種和生態的多樣性，同時發展經濟作物、觀光旅遊等產業，為當地居民增收，實現生態和諧發展。(China Shenhua Energy, pp. 80)
20. 準能公司堅持生態環境保護與煤炭生產並重，創新性的將土地復墾與生態農牧業建設融合，實現經濟效益與環境效益的同步提升。準能公司按照 0.45 元/噸煤提取綠化費用，專項用於土地復墾。依托礦區經復墾後形成的土地資源

和綠化後形成的植被體系，全力打造綠色、節能、集約、休閒為一體的現代化農業產業鏈。2014 年，投入生態建設資金 2,507.51 萬元，新增綠化面積 110.42 萬平方米，共新增種植樹木 147.96 萬株、地被 44.95 公頃，綠化復墾率達 85% 以上；黑岱溝露天煤礦通過“首批國家級綠色礦山試點單位”驗收，哈爾烏素露天煤礦獲批“第四批國家級綠色礦山試點單位”。(China Shenhua Energy, pp. 81)

21. 2014 年，朔黃鐵路遵循“擴綠、提檔、造景、疏通、速生、密植”的綠化理念，生態建設投資 4,451 萬元，美化鐵路沿線和周邊環境。(China Shenhua Energy, pp. 81)
22. 鐵路沿線生態建設：公司鐵路業務着力抓好鐵路沿線生物防沙、綠化佈置和養護工作，保護並顯著改善沿線生態。2014 年，朔黃鐵路遵循“擴綠、提檔、造景、疏通、速生、密植”的綠化理念，生態建設投資 4,451 萬元，美化鐵路沿線和周邊環境；神朔鐵路新增綠化面積 2,946m²，其中玫瑰籬 103m²、金葉榆 93m²、檜柏綠籬 105m²、苜蓿 2,645m²；共種植植物 640 株，其中樟子松 92 株、新疆楊 486 株、丁香 62 株。(China Shenhua Energy, pp. 81)
23. 保護當地環境：公司在海外運營時，十分注重保護當地環境，努力減少運營活動對生態環境的影響。澳洲公司致力於實現“綠色礦山”項目在海外的落地生根，在環境影響評價報告(EIS)和有關文件中充分考慮地下水保護、瀕危生態林保護、生態補償、考古遺址的保護和遷移、復墾修復計劃等 27 個因素，最大程度減少對周圍農業土地、用水、社會經濟、居民及生態等帶來的潛在影響。(China Shenhua Energy, pp. 90)
24. 橡膠林是世界上开发热带地区最佳的人工生态系统，橡胶园是可持续发展的热带森林生态系统，是无污染可再生的自然资源，发展天然橡胶符合可持续

发展的要求，海南橡胶拥有橡胶园面积 353 万亩，约占整个海南岛陆地面积的 6.7%。(China Hainan Rubber, pp. 6)

25. 橡胶树重大病虫害综合防控综合效益显著：橡胶树病虫害发生流行是影响橡胶产业可持续发展的制约因素之一。近年来，随着全球气候变暖以及生物多样性的变化，危害橡胶树的病虫害种类越来越多，同时，随着种植材料的引入，外来入侵种也日益增多，并呈现流行势态，危害程度越来越严重。当前，危害橡胶树的常见病虫害主要有橡胶白粉病、炭疽病、根病、六点始叶螨、蚧壳虫、褐皮病等，不常见病虫害如棒孢霉落叶病、老叶炭疽病也呈爆发流行趋势。如对病虫害监控不到位，防治手段和方法不当，海南橡胶每年因病虫害影响造成的干胶损失可高达 2-3 万吨，相当于 4-7 亿元人民币的经济损失。实施橡胶树病虫害综合防控，可减少农药使用量，减少环境污染，保护生物多样性，对海南生态省和国际旅游岛建设具有显著的意义。农业部南亚项目——橡胶树重大病虫害监测预报项目在海南垦区实施 3 年来，取得了显著成绩，农药使用量有了明显下降，橡胶树病虫害防控成本得到明显降低；橡胶树白粉病、炭疽病兼防的新药 16% 百咪鲜酮筛选成功，成为农业部推荐的主推技术之一。公司参与研发的“橡胶重要害虫橡副珠蜡蚧和六点始叶螨的防控基础及关键技术研究”项目获得 2011 年度海南省科技进步一等奖。“橡胶树炭疽病、白粉病化学防治综合技术的推广应用”获 2012 年度海南省科技成果转化二等奖。(China Hainan Rubber, pp. 21)

26. 实施橡胶树病虫害综合防控，可减少农药使用量，减少环境污染，保护生物多样性，对海南生态省和国际旅游岛建设具有显著的意义。(China Hainan Rubber, pp. 21)

27. 公司的业务规模不断发展，进出港船舶数量的增长和船舶的大型化以及装载

有危险品的船舶进出港对于港口附近水域生态带来日益严重的考验。为此，我们在现有码头生产经营过程中加强管理，特别注意保护港口水域环境，加强突发情况的应急演练。对于新建设的码头项目更加注意可行性报告中对港口水域生态的影响和修复工作。公司在码头建造前期对建设项目进行环境影响评价，识别出施工对生物多样性带来的潜在影响，并采取必要的预防捕施。在施工结束后，采取行动权极主动地进行生态补偿与修复，以弥补工程建设过程中给生态环境带来的损失。

28. 为提高上海港船舶污染事故应急防备与应急处置水平，年内，我们根据“防治船舶污染海洋环境管理条例”、“中华人民共和国船舶污染海洋环境应急防备和应急处置管理规定”和“上海海事局防治船舶污染海洋环境能力专项验收实施办法”等法律法规和文件的要求，委托交通运输部水运科学研究院编制了宝山港区、黄浦江港区、外高桥港区和洋山海区四个联防组织船舶污染海洋环境风险评价报告，旨在科学、合理地评价四个联防组织的船舶污染事故风险、防治船舶污染能力和防污应急设备需求。指导所属各作业码头加强应急防备能力建设。2013年11月30日，上海海事局在上海组织召开专家评审会并通过了报告评审。(Shanghai International Port, pp. 84)

29. 公司的业务规模不断发展，进出港船舶数量的增长和船舶的大型化以及装载有危险品的船舶进出港对于港口附近水域生态带来日益严重的考验。为此，我们在现有码头生产经营过程中加强管理，特别注意保护港口水域环境，加强突发情况的应急演练。对于新建设的码头项目更加注意可行性报告中对港口水域生态的影响和修复工作。公司在码头建造前期对建设项目进行环境影响评价，识别出施工对生物多样性带来的潜在影响，并采取必要的预防捕

施。在施工结束后，采取行动权积极主动地进行生态补偿与修复，以弥补工程建设过程中给生态环境带来的损失。(Shanghai International Port, pp. 84)

30. 遏制高耗能高污染产业盲目扩张，利于生态环境可持续发展。(China Merchants, pp. 82)
31. 能源产业主要实施了大气污染控制、水污染控制、噪声控制、生态综合整治，煤场及储煤厂防尘控制。(Tbea, pp. 13)
32. 生态保护：中国石化在生产经营过程中，一贯重视生态保护，尽量避免对生态环境造成伤害，尽量避开生态环境脆弱和敏感地区，尽量避开生态涵养区。油气田企业通过采油污水回用、煤层气排采污水处理和回用、压裂液返排污水处理和回用、钻井泥浆不落地及综合利用、废弃油基泥浆及岩屑处理等技术，尽量避免破坏生态环境。(China Petroleum and Chemical, pp. 40)
33. 中国石化塔河油田地处塔克拉玛干沙漠北缘、塔里木河流域，这里有世界上最大的胡杨林，被誉为“年代最古老、面积最大、保存最完整的原始胡杨林”。西北油田在油田开发建设中十分注重生态保护工作，在井场、井站、道路的选址和施工中，对每一棵胡杨树都采取保护措施，积极践行生态保护理念，保证不破坏当地的一草一木，千方百计保护当地生态环境。(China Petroleum and Chemical, pp. 40)
34. 生态恢复：油气勘探开发、油气运输管线建设等生产经营活动不可避免会对现有生态环境造成一定程度的影响。中国石化十分注意对油气田废弃矿井周围、油气输送管线沿线的生态恢复和复垦复耕，尽量减少生产经营对环境的影响。(China Petroleum and Chemical, pp. 40)
35. 两只黑鹳在塔河油区上空飞过，其中一只幼鹳因体力不支跌落。油田员工对它进行精心呵护和喂养，待黑鹳恢复健康后放归大自然。(China Petroleum and

Chemical, pp. 40)

36. 公司的业务规模不断发展，进出港船舶数量的增长和船舶的大型化以及装载有危险品的船舶进出港对于港口附近水域生态带来日益严重的考验。为此，我们在现有码头生产经营过程中加强管理，特别注意保护港口水域环境，加强突发情况的应急演练。对于新建设的码头项目更加注意可行性报告中对港口水域生态的影响和修复工作。公司在码头建造前期对建设项目进行环境影响评价，识别出施工对生物多样性带来的潜在影响，并采取必要的预防捕施。在施工结束后，采取行动权积极主动地进行生态补偿与修复，以弥补工程建设过程中给生态环境带来的损失。

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32. 生态恢复：油气勘探开发、油气运输管线建设等生产经营活动不可避免会对现有生态环境造成一定程度的影响。中国石化十分注意对油气田废弃矿井周围、油气输送管线沿线的生态恢复和复垦复耕，尽量减少生产经营对环境的影响。(China Petroleum and Chemical, pp. 40)

37. 中国石化河南油田员工在油井压裂施工完成后对临时占用土地及时平整复耕。坚持“不浪费一寸农田，不污染一寸土地”的原则，把保护环境和土地复

耕细化落实到生产各个环节，采取工程施工临时占用土地及时复耕、野外作业铺设塑料薄膜等措施，有效保护和节约土地资源。(China Petroleum and Chemical, pp. 40)

38. 中国石化中原油田文留南部油气田土地复耕率 100%，废水、废液、废渣循环利用和无害化处理率 100%，被国土资源部确定为全国第三批国家级绿色矿山试点单位。(China Petroleum and Chemical, pp. 40)

39. 全年实施了 3 个物探项目，在地区和环境部代表的监督下完成环保审核，在雨林施工中监督服务商在每道工序后都进行土地和植被恢复，保护雨林生态环境，增强了政府、环保组织和社区民众对公司环保责任感的认同，减少了潜在的冲突和停工风险，整个过程中仅接到 1 起环保投诉，为历史最低。(China Petroleum and Chemical, pp. 85)

40. 目前大量中药材资源遭到过度开采，野生资源日益减少，种植产业管理粗放，质量不稳定，拯救和保护中药材已经成为刻不容缓的大事。我们认为应该像保护“稀土”一样保护中药材资源。(Guangzhou Baiyunshan, pp. 17)

41. 2013 年四川“4·20”芦山强烈地震发生后，浦发银行全行员工积极奉献爱心，共筹得善款 871 万元，支持灾后恢复工作。经雅安市委，市政府推荐，最终确定将 871 万元善款捐赠给中国保护大熊猫研究中心雅安碧峰峡基地大熊猫科普教育中心项目建设。

建成后的“上海浦东发展银行大熊猫科普中心”将是一座拥有三层楼，建筑面积 1000 平方米，有宣传展厅，特色 5D 放映厅，声画并茂的向公众展示大熊猫最新动态、科研成果、普及大熊猫保护知识，正确引导舆论导向，为访客创建一个多功能的学习、交流、体验中心。让更多的人参与到保护大熊猫，保护大熊猫生态环境中来。(Shanghai Pudong Development Bank, pp. 119)

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43. 2014 年，浦发银行根据国家海洋经济政策导向，着力重点扶持的区域、领域，结合沿海省份地区特色及地方支持政策，支持海洋渔业及海产品加工，海洋装备制造，以及海洋工程配套建设施工等产业链环节，对渔业生产，渔业加工类客户也给予大力支持，鼓励区域内产业聚集，有一定业务基础的分支机构做出特色。(Shanghai Pudong Development Bank, pp. 66)

44. 该行采用银团贷款的方式支持常熟尚湖环境整治，截至 2013 年底，累计投放信贷 7 亿元，支持湿地修复工程项目，助力常熟市“沙家浜——尚湖”成功获评 5A 级旅游景区。(Agricultural Bank, pp. 79)

45. 围绕海南建设“海洋强省”战略，海南分行多策并举促进远洋捕捞、深海网箱养殖、海产品加工等海洋产业发展，促进当地企业增收，渔民致富。(Agricultural Bank, pp. 88)

46. 但是，农户普遍反映，金鲳鱼养殖成本高，抗风险能力差，无资金建造深海网箱。听取了农户的苦恼，海南分行主动与当地颇具实力的临高思远实业有限公司联系，由其子公司提供担保，为符合条件的 60 户渔民发放贷款 1.8 亿

元，助其发展深海网箱养殖。(Agricultural Bank, pp. 88)

47. 开发和利用海洋，发展海洋经济和海洋事业，对建设海洋强国，具有十分重要的战略意义。本行积极加强海岛网点建设，助力海产渔业稳健发展，推进海洋生态旅游发展。截至 2013 年末，渔业贷款余额 45.19 亿元，渔业服务业贷款余额 0.67 亿元。(Agricultural Bank, pp. 88)
48. 截至 2013 年底，泉州分行已累计向祥渔村发放渔业贷款 39,100 万元，带动了 220 户渔民开展养殖、捕捞。(Agricultural Bank, pp. 89)
49. 该行采用银团贷款的方式支持常熟尚湖环境整治，截至 2013 年底，累计投放信贷 7 亿元，支持湿地修复工程项目，助力常熟市“沙家浜——尚湖”成功获评 5A 级旅游景区。(Agricultural Bank, pp. 79)
50. 新疆和布克赛尔县的气候环境非常适宜种植野生干草植物，甘草亩均收入比传统农作物高 30% 左右，经营效益可观。(Agricultural Bank, pp. 49)
51. 协助发展金银花、有机红米等种植业 2,000 多亩，通过项目带动、产业带动等方式，增强自身“造血功能”。(Agricultural Bank, pp. 49)
52. 2013 年 3 月 23 日，由海尔团委主办的“海尔绿智能，走进大自然植树活动”在王哥庄庙石村植树点举行，来自青岛市各行各业的 300 余名志愿者共种植了 100 余棵树木。(Qingdao Haier, pp. 29)
53. 平原地区百万亩造林工程是由北京市人民政府推出，计划从 2012 年开始，争取利用 5 年左右的时间，使全市新增森林面积 100 万亩。我行积极实施信贷倾斜，利用中标企业银团贷款牵头及代理行的资格，向京林园林发放银团贷款，为提升北京银行生态环境质量、降低 PM2.5 指标做出自己的贡献。(Bank of Beijing, pp. 18)
54. 此外，我们在推广云南野生动物公众责任险等环境友好型产品、管理因气候

- 变化加剧而日益严峻的巨灾风险、投资环境友好型产业等方面也积极行动，不断探索运用保险机制解决环境问题的途径。(China Pacific Insurance, pp. 50)
55. 2013 年，我们继续大力推动环境污染责任险、云南野生动物公众责任险的实施，新开发了森林保险、内蒙古地区自然灾害公众责任保险等环境友好型产品。(China Pacific Insurance, pp. 52)
56. 中信证券(山东)联合青岛中信证券培训中心在诸暨白塔湖湿地举办了“植下一棵树，收获万点绿”植树活动，增强员工环保意识。(Citic Securities, pp. 10)
57. 云南野生动物公众责任险：我们持续关注云南地区由野生动物肇事带来的民生问题和动物保护问题。自 2010 年开展西双版纳亚洲象公众责任险试点工作以来，迄今已承保了保山、丽江、迪庆、普洱、西双版纳 5 个地州、25 个县、区的野生动物公众责任险项目，2013 年赔款金额超过 1,600 万元，有效减少了野生动物肇事对老百姓所造成的经济损失。(Citic Securities, pp. 52)
58. 在内蒙古，我们在库布齐沙漠开展了植树造林活动，共种植树苗 1,000 余棵。(Citic Securities, pp. 55)
59. 案例：促进大熊猫生态环境建设：2014 年 10 月 19 日，在“第七届中国*雅安动物与自然国际电影周”期间，“中信证券捐建中国保护大熊猫研究中心—雅安碧峰峡基地科普教育中心捐赠活动“在四川 雅安碧峰峡举行。(Citic Securities, pp. 55)
60. 3 月 9 日，在全国第 35 个全民义务植树节来临之际，郑州分行以“种植一颗绿树，共建一片蓝天”为主题，邀请 200 余名客户进行植树活动，在位于黄河大堤的“郑州绿源山水生态农业开发有限公司”内建立一片“华夏林”，种植了 100 多棵广玉兰，为绿色城市建设贡献了一份力量。(Hua Xia Bank, pp. 43)