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The many faces of responsibility: Acceptability of the global pulp and paper industry in various societies

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Academic dissertation

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ABSTRACT

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Business enterprises have always had to consider responsibility issues in their relations with the surrounding society, but the content of this responsibility has altered, as it inevitably reflects changes in the societal situation and debate with place and time. This thesis analyses the concept of responsibility within the Nordic-based pulp and paper industry empirically by quantitative and qualitative methods, employing the acceptability of operations as an indicator. The data were gathered at four mills of the case company located in four countries: China, Finland, Germany and Portugal, by interviewing internal and external stakeholders.

The interview material provided a number of definitions of the acceptability of operations. The main elements of acceptability for the Chinese were loyalty, distribution of welfare and cultural diversity, while the Finnish stakeholders emphasised profitability, sustainability and communication, the Germans socioeconomics, the solid waste problem and global forest operations and the Portuguese case showed the importance of technical competitiveness, quality of the products and land use.

The results showed that legal obligations set the minimum level of acceptable operations, but a wider notion of responsibility is needed, because local legislation is commonly inadequate. It is reasonable to adjust responsible operations according to local circumstances. The empirical study nevertheless indicated that global corporate responsibility is not only the sum of local issues arising in the various places of operation, as some responsibility elements are formed directly at the global level.

Acceptability of operations indicated comprehensive responsibility in business. Thus the findings were integrated into a holistic responsibility model, which diverges from earlier definitions in considering both the internal and external responsibility of the organisation. This model supports the view that corporate governance and corporate responsibility will be combined in the future to form a comprehensive, responsible management approach. At its best, the model combines the objective of ethical business practices with efficient allocation of resources both in companies and in society at large.

Keywords: analytic hierarchy process, business ethics, corporate responsibility, cross-cultural comparison, qualitative analysis, stakeholder.

PREFACE

I started this project in the late 1990's with the aim of deepening my theoretical and methodological skills for analysing the forest sector in my work as a forestry consultant. The doctoral dissertation served perfectly for this purpose, but the project also offered me much more than simply professional skills. I have recently noticed that when considering the global pulp and paper industry in various societies I have also been summing up my experiences as a student, forestry consultant and researcher over the last twenty years, when I lived, worked and travelled in a variety of interesting countries in Africa, Asia, Australasia, Europe and Latin America. These experiences have inevitably added a special spice to this work.

In the early phase of the project I was unable to identify any appropriate research group which I could have joined. Several times in recent years I have doubted my capacity to carry out this kind cross-scientific research without a professional reference group, until I realised that I had the most inspiring cross-scientific practical group of all, composed of the totality of private people and representatives of various organisations with whom I have considered these issues. First of all I wish to express my great gratitude to Professor Timo Pukkala and Dr. Minna Halme, who have had time to talk with me on the dissertation whenever needed. Their constructive comments helped me out of dead-end situations, but they were always open comments, in that they were wise enough to leave me space to build up the dissertation in my own way.

The example of my long-term superior from the beginning of my professional career, Dr. Markku Simula, encouraged me to seize this academic challenge after a practical career of ten years, proving that the combination of academic and practical approaches can be not only a fruitful approach but with many issues a necessary one. Professor Emeritus Päiviö Riihinen gave the first reassuring comments on my research theme, as a consequence of which the consultancy paper started to develop towards an academic dissertation. Critical and colourful discussions with the researcher Jakob Donner-Amnell helped me to position my research as a social phenomenon. The preliminary examiners, Professor Peter Dobers and Professor Juha Laurila, provided valuable comments that sharpened the argument in the dissertation, and I also had numerous inspiring conversations on this theme with professors and researchers at the Finnish Forest Research Institute, Helsinki School of Economics, Lappeenranta University of Technology, University of Helsinki, University of Joensuu and Åbo Akademi, with members of the Corporate Social Responsibility research circle and with other colleagues and friends. I extend my warmest thanks to all of them.

I wish to thank the following people and organisations for the technical and financial support that formed an essential basis for this work. The independent and challenging fieldwork carried out in China by my former colleague, Ms. Wei Li, enlarged the international perspective to a global one. Professor Osmo Kolehmainen provided important support in the statistical analysis. Ms. Renate Kühl, Ms. Ana Celia Sousa Dias, Ms. Tiia Pelkonen and Ms. Riikka-Liina Turkki patiently transcribed the English, Finnish, German and Portuguese interview tapes. The help of Mr. Malcolm Hicks with the language editing and Dr. Katri Luostarinen with the technical issues were essential to the completion of the dissertation. I could not have worked as a full-time researcher without the financial support provided by the Academy of Finland, the Foundation for Economic Education (Liikesivistysrahasto), the Graduate School in Forest Sciences and Stora Enso Oyj.

This project could have resulted in a totally different kind of dissertation without the interest of a small number of people in Stora Enso Oyj in various issues related to the operations of a global company in addition to financial ones. Mr. Timo Heikka and Mr. Lars Salovius were talking about the acceptability of operations in the late 1990's, as a consequence of which I produced a consultancy paper that proved to mark the beginnings of this academic dissertation. The representatives of the case mills, Ms. Renate Balzer, Mr. Pedro Lencart, Mr. António Manuel Pinho, Ms. Marjaana Luttinen and Ms. Yang Yun helped with the practical arrangements during the fieldwork. In addition to the interviews with the stakeholders, several discussions with representatives of the company during and after the fieldwork helped to clarify my picture of the conditions and challenges existing in the pulp and paper industry in these different operating environments. My warmest thanks go to all of these people.

My greatest thanks and love go to my immediate circle and family. Ms. Hannele Tuovinen's stable and patient work as our children's nurse and arbiter in their games provided me with a wonderful opportunity to be near to my children and do the most interesting kind of work simultaneously in a lively environment.

My parents, Sirkka and Esko Kosonen, have supported this work in many ways in addition to their ever-willing help and support with child care. Their endless love, belief in my capacity to do whatever I have decided to do throughout my life and example in questioning common truths created the pre-conditions necessary for the success of this work. Our most interesting discussions, ranging from current private forest ownership to relationships between paper mills and sawmills with the small, surrounding societies in Eastern Finland in the 1940's – 1970's gave me the historical perspective for my research theme.

The birth of our children during this research project, Hilla and Otso in 2002 and Sisu in 2004, has been the most revolutionary experience in my life. Diving into the world of children has on the one hand helped me to escape from my academic thoughts, which is necessary in innovative work, and keep my personal values clear, and on the other hand given me a new, very personal perspective on two essential concepts, responsibility and the efficient allocation of resources. My beloved husband and colleague Ari has supported me throughout this project, but most of all he has shared with me the lifelong responsibility for our children and the challenge of allocating our limited mental and physical resources. In addition, his career in the pulp and paper industry has provided me with a box seat from which to follow at first hand the recent, concrete changes in the industry's operating environment, which has strengthened the foundation of this dissertation.

Many thanks to you all!

Imatra, June 2006

Mirja Mikkilä

LIST OF ORIGINAL ARTICLES

In addition to this summary, the dissertation includes the following separate articles, which are referred to by Roman numerals in the text as follows:

I Mikkilä, M. 2002. Acceptability of operations as an indicator of corporate social performance. Business Ethics: A European Review. Vol. 12(1): 78-87. http://www.blackwell-synergy.com/toc/beer/12/1.

II Mikkilä, M. Kolehmainen, O. Pukkala, T. 2005. Multi-attribute assessment of acceptability of operations in the pulp and paper industries. Forest Policy and Economics. Vol. 7: 227-243. doi:10.1016/S1389-9341(03)00062-5.

III Mikkilä, M. 2005. Observing corporate social performance empirically through the acceptability concept: a global study. Corporate Social Responsibility and Environmental Management. Vol. 12: 183-196. doi:10.1002/csr.084.

IV Mikkilä, M. 2005. Corporate responsibility in various cultural settings: an empirical study of the pulp and paper industry. Conference Proceedings, Business Strategy and Environment 2005 Conference, Leeds, UK, September 4-6, 2005. http://www.bseconference.org/bse2005/proceedings/mikkilaemirja.html.

V Mikkilä, M. Critical questions about corporate social responsibility and performance: research and practise in various cultural settings. Manuscript.

Articles I, II and III are reprinted here with permission.

Mirja Mikkilä was responsible for gathering the data, interpreting the results and writing the paper in the case of Article II.

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1 INTRODUCTION

The public have been preoccupied with the ethics of economic activities ever since the market economy began to emerge more than 750 years ago (de George 1987, Vogel 1991), and business enterprises have always had to consider responsibility issues in their relations with the surrounding society, although the content of that responsibility has altered, as it inevitably reflects changes in the societal situation and debate with time and place. The economic responsibility of businesses has been emphasised since the beginning of industrialisation in the late 19th century. Economic development in Europe was based to a great extent on low labour costs and abundant natural resources in addition to the new technologies available. The labour movement started to criticise the poor working conditions at the beginning of the 20th century, raising various social issues, but the focus returned to economic responsibility during the rebuilding era in post-war Europe. The public became aware of global environmental limitations in the 1960's, partly as a consequence of Rachel Carson's well-known novel "Silent Spring" in 1962. This started the era of environmental responsibility in social debate. Recently, the debate has returned to social issues, especially corporate social responsibility, as a consequence of the shift in the focus of business and expansion to the new, emerging market areas.

Within this framework, I became interested in responsibility issues in the pulp and paper industries in the late 1990's. At that time the acceptability of operations was employed in one of the world's largest pulp and paper companies, the Nordic-based Stora Enso, when describing social responsibility and related issues. I started this work as an employee of Stora Enso, in the form of a consultancy project "Acceptability of international operations in the pulp and paper industry" in four operating environments, China, Finland, Germany and Portugal, carried out for the company in 1999-2001. I agreed with the representatives of the company at an early stage in the project that I would write a doctoral thesis on this subject, and that the basic material and the methods must be adequate for this purpose, too. Thus it was natural for me as a forestry professional and an employee of Stora Enso to continue the work by studying responsibility issues within the global pulp and paper industry, viewed through the acceptability concept and employing various methodologies. The focus is on the years 1999-2005, but as our history is an unbroken, chain of overlapping events, it was frequently necessary to go further back in time in order to form a comprehensive view of the acceptability and responsibility phenomena.

1.1 The changing operating environment of the pulp and paper industry

The profound change in the operating environment has led to increasing interest being shown towards responsibility issues among industries. This development can be explained through four phenomena that have taken place in business and in societies in general during the last ten to fifteen years: 1) changes in values, 2) building of company images, 3) preparations for future regulations and standards, and 4) globalisation of corporations, societies and politics.

Although values are fairly permanent in nature (Allardt 1983), changes do occur because of alterations in social, cultural, demographic, economic and technological factors (Karppinen 1998). Changing values will lead to different expectations of the role that business should perform in relation to the ecological environment or the needs and

aspirations of stakeholders in addition to economic performance (Andrews 2003). Business managers' values change, too, and the choice of behaviour that is ethically "right" is in any case problematic, as there is no model that defines how to behave in different operating environments. This problem has arisen especially in the natural resource-based industries such as pulp and paper, as their dependence on natural resources binds them intensively and comprehensively to the local societies wherever they operate. The sincerity of their desire to do "right" is nevertheless reflected in their willingness to behave in an ethically acceptable manner and to carry their share of a wider responsibility than merely the economic one.

It would be idealistic to believe that company decisions could be directed only by the will to behave in a morally correct manner. It is clear that responsibility issues are also made use of in business for image-building purposes. A good reputation can have a positive impact on a company's financial performance, although it is true that image-building and communication can improve the reputation of a company in a manner that deviates from the corresponding practices, as Kuisma (2004) concluded when studying the environmental performance of large pulp and paper companies.

Companies have recognised recently how standards and regulations develop and set new requirements for their operations, alongside clients' demands. For example, the large financial scandals involving Enron and Worldcom led to reforms of accounting regulations in the USA. The US Congress agreed to the reforms, together with changes to the NYSE Listing Rules on the establishment of the Sarbannes Oxley Act of 2002, more formally the Accounting Industry Reform Act, 2002 (Mallin 2004). This regulation requires all companies listed in the USA to provide a specific set of statements mainly on economic, but also on social and environmental policies and principles (Sarbannes-Oxley… 2005). Many companies have listed the required issues in their codes of conduct or ethical codes recently, in order to fulfil the requirements of the act. It is likely that the status of responsibility issues will change in a similar way in the future. Economies are increasing exponentially world wide, and simultaneously the last non-renewable energy sources have been identified and even renewable natural resources are becoming scarce (Meadows et al. 2005). This will lead in the worst case to social or environmental hazards that force governments and companies to re-programme their operations.

The fourth reason for the increasing interest in responsibility in business is the rapidly changing, globalising environment in which industries are operating. David Held, a researcher into global democracy, defines globalisation as the expansion and acceleration of especially economic, but also ecological, political and cultural connections (Sihvola 2004). Globalisation is not a new phenomenon in the history of humankind, but the current wave is exceptionally large, deep and fast (Schwab 2006). Thus, globalisation has brought a number of new stakeholders into the business sphere, introduced many new phenomena and increased the political power of corporations, challenging them to consider their responsibilities in a new light.

The world's largest pulp and paper companies have met the above challenges when expanding their operations extensively outside the home continent since the 1990's, thus raising responsibility issues to the status of an acute issue. The increasing role of responsibility seems to be more crucial within the Nordic-based pulp and paper industry than within other large pulp and paper producers in Asia and North America, for three reasons: 1) the degree of globalisation of the companies, 2) the location of their markets, and 3) interaction with the surrounding societies.

Although the pulp and paper industry can be considered a globalising sector rather than a truly globalised one (Siitonen 2003), the raw material basis, forests, makes the industry a globally important, interesting and sensitive sector, since forests cover about 30% of the world's land area (Global Forest Resources … 2005). In forest peripheries around the world, globalisation has been defined by complex interactions of industrial and resource dynamics driven by the imperatives of flexibility, neoliberalism, environmentalism and aboriginalism (Hayter 2004). Thus, millions of people interact frequently with the forests and are directly or indirectly dependent on them, having various opinions on the management, utilisation and conservation of this natural resource.

The globalisation of the forest sector accelerated in the early 1990's, but so far the expansion has mainly taken place in the traditional operating areas, as the share of the developing countries in pulp and paper production has only increased marginally since the 1980's. Increasing paper consumption and the diminishing barriers to trade, in addition to investments, have supported growth in the pulp and paper companies, strengthened their position on the market and helped them benefit from economies of scale (Donner-Amnell et al. 2004). Regardless of this development, the industry remains highly fragmented, with the top ten companies representing only 25% of global production (Global forest and paper… 2005, Pulp and paper capacities… 2005). In other words, there are thousands of local and regional actors in the sector, an indicator of low globalisation. Only four of the world's ten largest companies, North American International Paper and Kimberley-Clark, the Finnish Stora Enso and UPM can be regarded as global companies in that they have significant production on more than two continents (Table 1). The remaining six have expanded mainly within their home continents, having a marginal share in production on any other continent so far. In addition, the Nordic companies export the majority of their production, so that the Finnish pulp and paper industry exported 90% of its production in 2005 and around 50% of its production capacity was located outside the country (Finnish Forest Industries Federation 2006), whereas the Asian and North American companies produce mainly for their own continental markets.

Table 1. The world's largest board and paper producers in 2004.

COMPANY	HOME COUNTRY	LOCATION OF PRODUCTION /MARKET	NET SALES US$ MILLIONS	RETURN ON CAP. EMPLOYED, ROCE %
International Paper	USA	Global	$ 25,548	3.9
Georgia-Pacific Corp.	USA	North America	$ 20,170	5.2
Weyerhaeuser	USA	North America	$ 19,656	5.0
Stora Enso	Finland	Global	$ 15,417	6.3
Kimberly-Clark	USA	Global	$ 15,083	14.2
Svenska Cellulosa	Sweden	Europe	$ 12,245	4.6
UPM	Finland	Global	$ 12,213	6.8
Oji Paper	Japan	Asia	$ 11,030	3.0
Nippon Paper Group, Inc.	Japan	Asia	$ 10,917	2.4
Metsäliitto	Finland	Europe	$ 10,639	0.4

Sources: Finnish Forest Industries Federation 2006, Global forest and paper… 2005, Siitonen 2003, Web-sites of the listed companies.

In addition to the economic reasons, the operating environment of the Nordic pulp and paper industry has become complicated through the increasing external pressure on it. The operations of the larger pulp and paper companies in Europe and North America have been criticised constantly since the 1970's (Halme 1997, Hayter 2004, Hellström 2001, Uimonen 1998) and the public debate in the 1990's extended to the relationships between development aid, forestry know-how and the promotion of exports (Lehtinen 2004). The recent criticism of the large Nordic-based companies, however, has generally been stronger than that of the Asian and North American ones, except for criticism of those operating in British Columbia in Canada. Sandberg et al. (2004) analysed that the criticism towards the Nordic industry was driven by German clients and consumers, thus, raising the discussion to the international level, while the criticism in Canada remained as a national debate stimulated mainly by national groups. This could be recognised well in Finland in the 1990's when the Finnish industry did not react on the criticism very much before its clients started to question its forest operations. This became a strong signal to the industry that a bad reputation can influence its profits if it does not learn to communicate with its stakeholders and develop its operations. Regardless of the criticism, the industry emphasises mainly the importance of shareholders, as a consequence of the importing of the quartile economy from North America into Finnish business in the 1990's.

The above differences explain why the Nordic companies can be considered more international or global than other large pulp and paper producers, and why their operating environment is more challenging. It is thus the expansion outside the home continent and globalisation of the criticism that has raised responsibility issues as topic of debate in the Nordic countries recently and has increased the number of stakeholders involved with the pulp and paper industry, while no such pressure exists within the Asian and North American-based companies, or at least the pressure remains at a reasonable level.

1.2 Purpose of the research

The discussion relating to interaction between business and society is relatively well established (Welford 1997). Many businesses have adopted concepts such as business ethics, corporate social responsibility and stakeholder thinking as a part of their corporate language, at least. Companies apply environmental and social auditing and certification systems co-ordinated by environmental and corporate social responsibility (CSR) managers. Industry paints a picture of activity and concern and points to what it sees as considerable achievement in quite a short space of time. As a consequence of their rapid adoption, the content of these concepts has remained relatively loose at the practical level. This is likely to have quite different impacts on business and society.

The purpose of this work is to study the above phenomenon by assessing the development of responsibility issues within one branch, the pulp and paper industry, and by comparing the corporate responsibility of a Nordic-based, globally operating company, Stora Enso, with its external and internal stakeholders' understanding of responsibility issues through the concept of acceptability of operations. In order to reach this goal, it is necessary first to study what kinds of operations stakeholders consider acceptable. After this the study aims to clarify the relationship between the concepts of acceptability of operations and corporate responsibility and assesses the importance of various elements for the industry and its stakeholders. Finally, the major challenges facing responsible industrial operations can be discussed.

1.3 Structure of the research

This thesis is composed of a summary and five separate papers. The six chapters of the summary review the practical and theoretical background, the research environment, the methodologies applied and the major findings and implications based on the separate papers.

Chapter 1 provides a background to the problem, describing the changing operating environment of the global pulp and paper industry, and thus justifying the work and raising relevant questions to be answered.

Theoretical bases applicable to this kind of problem is presented in the first part of Chapter 2, which then outlines an overview of the conceptual framework and its blurred nature, discussing the acceptability of operations, responsibility and business ethics in an industrial context. The final part of the chapter reviews relevant previous studies and formulates the questions to be answered in the research on the basis of the review of the literature.

Chapter 3 is concerned with the material gathered here, describing the stakeholders interviewed and analysing the changing operating environment of the pulp and paper industry further from the perspective of the case company and mills.

Chapter 4 begins by outlining the research design and analytical framework, after which it goes through the three methodologies employed: the Analytic Hierarchy Process (AHP), qualitative analysis and triangulation of the results based on quantitative and qualitative

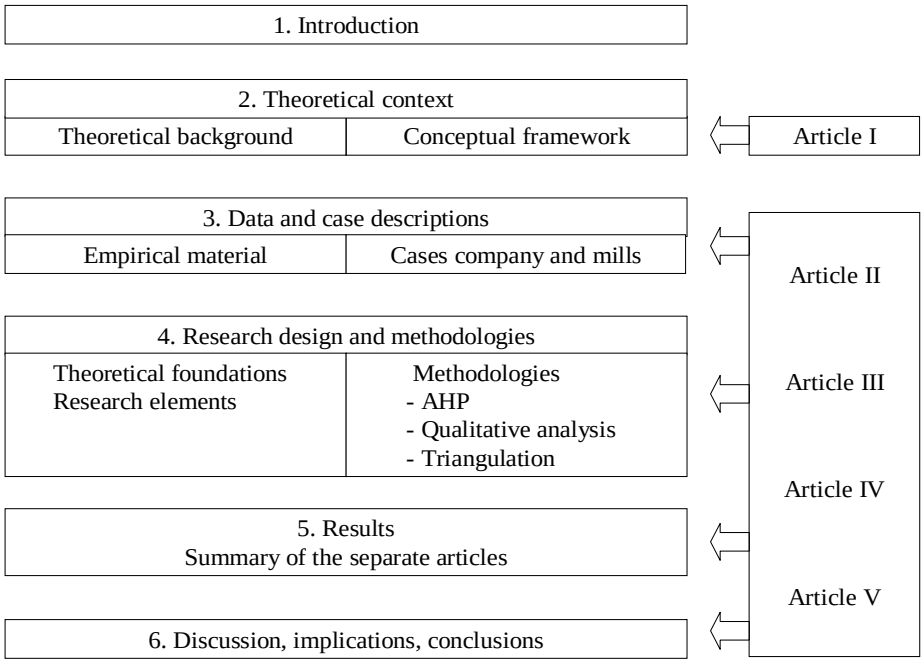

Figure 1. Structure of the thesis.

analyses. Finally, the soundness of the research project is assessed by presenting the scheme for determining its reliability and validity.

Chapter 5 presents the research setting and outlines the major findings and conclusions of the five papers, which in effect contribute the theoretical, analytical and discussion parts of the thesis, as outlined in Figure 1.

Finally, Chapter 6 summarises the results, discusses the applicability of the theoretical and methodological approaches adopted and extracts theoretical and practical implications from the synthesis of the results and the discussion.

2 THEORETICAL AND CONCEPTUAL CONTEXT

Several theories can be applicable to studying a company's relationship with its operating environments. A theory is good if it can provide a perspective for understanding, investigating and exploring the problem and the questions posed (Lindfelt 2004). Thus the theoretical background can affect the results by determining the position of the research.

My theoretical choice was empirically driven rather than the result of a comparison of several theoretical options. I became interested in the stakeholder perspective at an early stage, because it must be said that it is only recently that the Finnish forest sector has learned to communicate with its interest groups. Decisions related to forestry and the forest, and pulp and paper industry have commonly been justified by referring to the high level of technical expertise shown by professionals throughout the history of active forestry and wood processing in Finland, i.e. since the late 19th century. The consideration of interest groups increased within forestry and the pulp and paper industry in the 1990's, when international environmental non-governmental organisations interested clients of the large Nordic companies in the environmental issues affecting pulp and paper production. Simultaneously the quartile economy spread to Europe from North America, bringing the unique role of shareholders into the scope of industrial decisions. The above paradox of recognising the relevance of stakeholders but emphasising shareholders that entered the expanding Finnish pulp and paper industry in the late 1990's pushed this research towards the stakeholder approach. In addition, I found it relevant to review the literature on corporate social responsibility and business ethics in order to outline a theoretical context for the empirical phenomenon.

Stakeholder theory will be presented in the next chapter, where its applicability to the problem will be discussed. The latter part of the chapter outlines the conceptual framework, including the concepts of acceptability of operations, responsibility and business ethics. Finally, relevant previous conceptual studies of responsibility and business ethics and sectoral studies on the pulp and paper industry are reviewed in order to position this work within its field of research.

2.1 Stakeholder theory

Stakeholder theory can be defined as a social theory of the firm (Näsi 1995), or a theory of organisational management and ethics (Phillips 2003). According to some opinions, a theory of the firm based on the stakeholder approach could even replace the theory based on profit maximisation (Lovio 2004). Näsi (1995) traced the main impulses for this back to the 1930's-1950's. Then called a new theory of the firm, this approach enjoyed an essential role in university management teaching in Nordic countries from the 1960's up to the early 1980's. The popularity of the approach arose elsewhere, through Freeman's (1984) often cited work "Strategic Management. A Stakeholder Approach". Nowadays the stakeholder approach is a common way of treating issues concerned with broader social responsibilities in business (Donner-Amnell 2004, Winjberg 2000, Wood 1991).

One of the broadest and most frequently referred to definitions of a stakeholder is the statement by Freeman (1984) that a stakeholder is any group or individual who can affect or be affected by the achievement of a corporation's purposes. Stakeholder relationships based on this are traditionally described with a stakeholder map in which the company is in the centre and is shown as having an individual relationship with each stakeholder. Mitchell et al. (1997) specified this with their proposal for a theory of stakeholder salience, defined as the degree to which priority is given to competing stakeholder claims. The stakeholders and their claims are classified in terms of legitimacy, power and urgency. In addition, Phillips and Reichart (2000) proposed that the voice of nature can be heard through legal concepts.

Many authors, including Argandoña (1998), Clarkson (1995), Donaldson and Preston (1995), Goodpaster (1991), Jones (1995), Kaler (2002), Mitchell et al. (1997), Phillips and Reichart (2000), Starik (1995) and Takala and Pallab (2000), have criticised stakeholder theory on account of its incomplete theoretical status and resulting loose content, and also for its lack of criteria for identifying stakeholders, including the status of the natural environment as a stakeholder. Donaldson and Preston (1995) and Mitchell et al. (1997) expanded Freeman's (1984) work by clarifying the theoretical status of the stakeholder approach and providing a system for stakeholder identification. Donaldson and Preston (1995) divided stakeholder theory into descriptive, normative and instrumental parts, and Freeman (1999) concluded that the division is rooted in a philosophy of science, in that descriptive stakeholder theory describes corporate characteristics and forms of behaviour, in other words it explains how the world really is. The normative theory prescribes how the world should be, and thus the function of a corporation, including the identification of moral issues for operation and management. The instrumental theory links means and ends by identifying the connections between stakeholder management and the achievement of traditional corporate objectives such as profitability and expansion.

Lovio (2004) summarised the past development of stakeholder theory in terms of three tendencies. The first one proposes that a company, or its managers, should bear responsibility for the equal consideration of claims made by stakeholders. This should be proportioned with the inputs made by various stakeholders and importance of issues determined by them. The second option is based on the opinion that a company can do well in the long term only by taking its stakeholders' claims into consideration. The third approach is to think that companies simply interact, intensively or extensively, with various interest groups because they do not operate in vacuum. In other words, the basis is that the operations of a company can be described and explained best by studying its interaction with various stakeholders, which is closest to the approach adopted here.

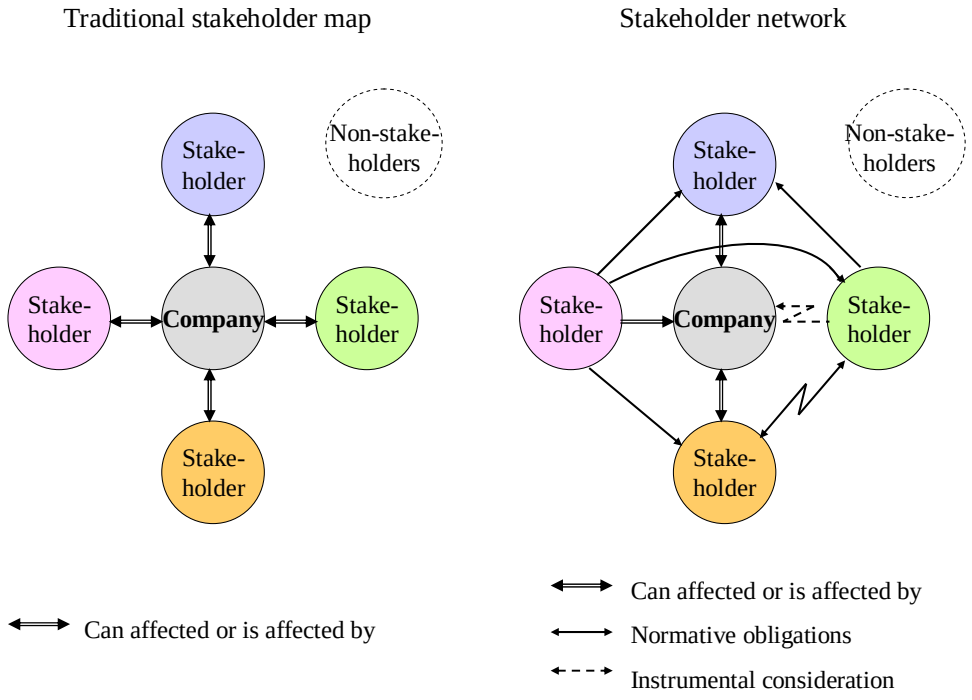

Figure 2. Traditional stakeholder map vs. stakeholder network.

Phillips (2003) recognised that the traditional stakeholder map is inadequate for describing an empirical business environment. He elaborated the idea of legitimacy in stakeholder theory in terms of normative and derivative legitimacy. These concepts reflect the intuition that some stakeholders merit more consideration in managerial decision-making than others, but the theory would be incomplete if it failed to account for stakeholders who might have a significant effect on the organisation and the achievement of its goal. Phillips' ideas of legitimacy in terms of normative and derivative legitimacy in stakeholder theory implies that the company has various direct and indirect relationships with its stakeholders and that the stakeholders also have direct contacts of their own, some of them being conflicting ones. Phillips' findings can be applied within the pulp and paper industry, or more generally within natural resource-based industries, by describing the above relationships with a stakeholder network (Figure 2) rather than a map, in that, in addition to the affection relationship, a company has a moral obligation towards its normative stakeholders, a stakeholder fairness obligation. Derivative legitimate stakeholders are those groups whose actions and claims must be accounted for by managers due to their potential effects upon the normative groups. The stakeholder network aims at describing the complexity of the operating environment of a global company, showing the real problem of making the "right" decisions in a global operating environment.

Donaldson and Preston (1995) emphasised that business enterprises that are considering a strategy of corporate social responsibility have to identify the object of their responsible actions. Their stakeholders are commonly considered to represent objects. It was thus

reasonable to hypothesise that the various stakeholders in an industry could provide a relatively diversified understanding of business responsibility in that industry through the acceptability of operations. Regardless of this diverse discussion on stakeholder theory, its focus on organisational management, ethics and relationships between stakeholders provides a promising theoretical basis for the present work.

2.2 Conceptual framework

The past ten years have shown the success of the economy and triumphal march of multinational enterprises. Simultaneously, other stories describe companies on the slippery slope and burn-outs. In addition, there are new reports of financial malpractices and white-collar crimes (Niiniluoto 2005). It is therefore no wonder that business ethics and corporate social responsibility have sprung up as popular topics of debate and research. To keep up with this and to retain the trust of the most important stakeholders, their customers and shareholders, companies have launched declarations of values, ethical codes and corporate responsibility principles and programmes thick and fast. The debate and activities are lively, but the content of the terminology used often remains blurred for many people, whether they represent themselves, a political affiliation, business or research. Because of this confusion, it is necessary to clarify the terminology in the present framework.

A theory means a set of propositions which define certain concepts and their interconnections (Näsi 1995). The interconnections between the concepts of "acceptability of operations", corporate responsibility and ethics in business were defined here through stakeholder theory.

2.2.1 Acceptability of operations

The concept of "acceptability of operations" arose in the Finnish pulp and paper industry in the late 1990's as a consequence of the active environmental debate surrounding the industry during that and previous decades. The representatives of the industry employed the concept when assessing future challenges related to the interaction of the industry with the society (T. Heikka, Vice President, Corporation Strategy and Investments, L. Salovius, Vice President, Environment, Stora Enso, personal communication, 18 March, 1998). The acceptability concept is still used in practice nowadays when referring to societal relationships in forestry and various industries. The problem with this concept from the research perspective was that it was not used in the academic debate. Despite its popularity in a business context, it hardly raised any theoretical polemic related to responsibility in business or business ethics, and consequently no previous references were found to it as a concept.

Acceptability is a value-bound issue. It could nevertheless be regarded as a value in this context, as a matter of judgement, entailing a process of the kind that is involved in making judgements and the standards and criteria brought to bear in such a process (Frederick 1995). A value means that choices are governed by dispositions which are 1) learnt from the surroundings, 2) held in common, 3) permanent, and 4) concerned with the stated targets (Allardt 1983). Frederick (1995) found that each person has his or her own personal values, and thus values are capable of expressing mainly a human diversity that is relative in terms of social time and space. Values are rarely used in an attempt to understand business and business behaviour. Values related to business are commonly studied from the

perspective of the corporation, or more precisely, from the perspective of the managers, as their values are reflected in the ethical behaviour of a corporation.

The major limitation on the acceptability concept is its changing nature. As a value, it is fairly permanent in nature, although value changes do occur for various reasons and can operate in different directions. These are often connected with changes in social, cultural, demographic, economic and technological factors (Karppinen 1998), in other words in the operating environment of a corporation. Values also tend to follow new social trends, and thus the acceptability of operations reflects the values of a society at a certain point in time and place.

Because of the practical importance of the acceptability concept I became interested in the relationship between a company and society through the medium of this value-bound issue, although there were no previous examples available.

2.2.2 A blurred concept of responsibility in business

Responsibility is a popular and widely discussed concept describing the diversified environments in which business enterprises operate, including ethical issues. Responsibility in business has been described since the 1970's with various concepts such as corporate social responsibility, corporate responsibility, responsible business and sustainability, and the definitions of these concepts have been diverse (Table 2). Corporate social performance is commonly connected with this set of concepts as well.

Milton Friedman's (1970) classic statement "the business of business is business" is probably one of the oldest and narrowest references to the responsibility of business enterprises. The concept of responsibility has diversified greatly since then. Carroll (1979) launched the multidimensional construct of corporate social performance, which included an element of responsibility. Performance referred to the operations of corporations, and responsibility provided a normative context for these operations and the operating environment. The major elements in corporate social responsibility in the 1980's were the economic, social, ethical and legal dimensions.

The launching of the concept of sustainable development by the Brundland Committee in 1987 and the declaration of sustainable development by the United Nations of Conference on Environment and Development (UNCED) in 1992 boosted a general consciousness of environmental, social and cultural issues (UNCED 1993, World Business Council… 2005), since when corporate social responsibility and related concepts have been connected with sustainable development (Welford 2002, Korhonen 2003), a context in which it has been described as comprising three elements: economic, environmental and social. For example, the programmes of the European Commission concretised corporate social responsibility as a contribution of business to sustainable development (European Commission… 2002). The paradox of this definition was that both the concept and its definition included a social element. Both scholars and business people adopted the concept of "corporate responsibility" in the late 1990's in order to clarify the role of social issues as one dimension of responsibility. Figge and Hahn (2004) concretised the relationship between the above concepts and the concept of sustainability by defining the sustainability of a company as being judged according to its economic, environmental and social performance. This would mean that the concept of sustainability would be equal to that of corporate performance.

Regardless of the blurred and diverse definitions of the content of responsibility in business, both scholars and business people agreed on the necessity and usefulness of a

Table 2. Definitions of responsibility in business.

CONCEPT	DEFINITION	AUTHOR
Social responsibility of business	Profit maximisation	Friedman 1970
Corporate social performance	corporate social responsibility + corporate social responsiveness + social issues	Carroll 1995
	economic responsibility + public responsibility + social responsiveness	Wartick and Cochran 1985
	corporate behaviour + responsibility programmes + policies	Wood 1991
Corporate social responsibility	economic + legal + ethical + discretionary responsibility	Carroll 1979, 1995
	legitimacy + public responsibility + managerial discretion	Wood 1991
	social + environmental responsibility	Broadhurst 2000, DesJardin 1998, Korhonen 2003, Maclagan 1999
	economic + social + environmental responsibility	Talvio and Välimaa 2004, Welford 2002
	economic + social + environmental + cultural responsibility	Halme and Lovio 2004
Corporate responsibility through moral decision making	1) perception, 2) reasoning, 3) co-ordination, 4) implementation	Goodpaster 1983
Responsible business	economic + social + environmental responsibility	Ketola 2005

concept that binds social, environmental and ethical issues to business in addition to economic ones.

2.2.3 Ethics and business

Ethical questions are challenging enough inside one cultural area, but they become more complicated when a company expands outside its home country. To understand the complicated nature of many issues referred to in this study, it is relevant to clarify the meaning of concepts such as moral conception, moral subject, ethics and the theoretical

tendencies of moral relativism and global ethics, although a profound ethical discussion would go beyond the scope of this work.

According to Niiniluoto (2005) and von Wright (1972), morality mean subjective concepts, norms regarding what is good and bad, right and wrong, while ethics refers to philosophical theories on the characteristics of morality. Business ethics is a form of applied ethics that studies what is morally right and wrong as applied to business policies, institutions and behaviour (Velasquez 2002). The justification of ethical behaviour in business is challenging, as ethical behaviour is not automatically rewarded in business – just as unethical behaviour is not always punished. Without moral norms, however, no single business contract would be signed, as a kind of mutual trust is a precondition for a business relationship (Aaltonen and Junkkari 2000).

The moral nature of business enterprises is a crucial theoretical and practical question when seeking justification for ethical behaviour in business. In other words, are business enterprises moral subjects that can separate good from bad (Niiniluoto 2005), and if they are, how far does their responsibility extend to their decisions, and to the decisions made by their partners. Niiniluoto (2005) justified the nature of a business enterprise as a moral subject by arguing that an organisation is a juridical person according to the judiciary, and therefore also a moral subject.

Moral relativism emphasises morality in its cultural background, learnt practices and form of living (Sihvola 2004). Donaldson (1989) assessed relativism to be unethical or irresponsible in international business. Companies have to make truly difficult decisions in various cultural settings. The application of local norms and moral concepts may provide an easy way out of a contradictory situation, especially if the stakeholders of the company are in conflict. Such decisions are seldom sustainable in the global business context, however, and harm the company's reputation in the long term. International business ethics has acquired some relativist characteristics over time, however. It can and should adjust with time – to evolving technology and to the cultural or religious attitudes of particular economic communities (Donaldson and Dunfee 1999), which makes the application of ethics to business operations complicated.

Global ethics aims at implementing global justification, but the adjustment of global ethics to the global market economy is a challenging if not impossible task (Sihvola 2004). One can only imagine the challenges that a company must meet when expanding its operations to a totally different cultural and geographical region, where the local legislation and regulations may not be adequate to guarantee local citizens their basic rights. The company must, on the one hand, consider the extent of its ethical responsibility, and on the other hand, adjust its values and operating principles so that there is no major contradiction between them and the local moral norms, bearing in mind at the same time the basic ideology of business, profitable production through the efficient allocation of resources.

Donaldson (1989) took international rights such as human rights as the moral minimum for the behaviour of all international economic agents. Another basis might perhaps be the most commonly quoted ethical principle, "So in everything, do to others what you would have them do to you" (Matthew 7:12), which exists in slightly different variations around the world regardless of the dominant religion or philosophy in the region.

The main problem of ethics in a business context is to find the content of ethical responsibility and balance its dimensions (Niiniluoto 2004). Ketola (2005) assessed that ethics in business is required in order to place limits on greed. The economic aspect of society is important, but financial profit cannot be taken as the only indicator when assessing the value of a human being. In this context, ethics is needed in decision making at

the personal level, too, as the 2000-year-old principle states, “What good is it for a man to gain the whole world, yet forfeit his soul?” (Mark 8:36).

Many companies admit that ethics has a role in business decisions. The most concrete actions reflecting this have been the launching of sets of values and ethical codes. Niiniluoto (2005) claimed that the results of the value process have remained poor, because all companies have basically the same values. A company’s values should be reflected in its daily decisions and operations. This will be achieved if, firstly, the management is committed to the values, and, secondly, the entire personnel participate in creating the values. The second demand is an especially challenging one in multinational companies.

An ethical code has both a theoretical and a practical interpretation. One essential line of research in business ethics has been focused for a long time on outlining ethical instruments for business, such as ethical codes. These studies have looked for guidelines and principles for ethical business behaviour. The recently launched ethical codes of companies commonly refer to statements on social and environmental policies and principles as well as economic ones in order to fulfil the requirements of the Sarbannes Oxley Act of 2002.

2.3 Review of previous relevant studies

A profound review of previous research related to responsibility and business ethics was necessary in order to place responsibility in the conceptual context through the concept of acceptability, as no theoretical works on the latter as such were to be found.

2.3.1 Responsibility and business ethics

The academic study of business and society began to appear in the U.S.A. in the 1950’s (Carroll 1995, Frederick 1995), and related issues arose in Europe 30 years later, the first studies of business ethics being launched in the early 1980s (van Luijk 1997).

Business ethics research is commonly connected with corporate responsibility and stakeholder issues. Many papers have dealt with one, two or all of these fields of research. Previous responsibility studies can be classified as 1) development of the concept and methodologies, 2) analysis of data produced by companies, 3) definition of stakeholder issues in a business context, and 4) business ideologies in changing operating environments. In addition, Lindfelt (2004) classified research into ethical issues into five main streams: 1) studies of a certain ethical issue, 2) business people’s ethics and values, 3) ethical instruments for business, 4) justification of ethics in business, and 5) ethics in international business (Table 3).

The works examined provided a profound view of responsibility and ethical issues as well as of the stakeholder approach in the relevant geographical areas. The most useful works focused on the development of theories, stakeholder issues, values in cross-cultural operating environments and the development of international business in the form of practical cases or theoretical discoveries. Despite the numerous studies consulted, the concept of responsibility in a business context nevertheless remained blurred. Mamelin and Vaarla (2005) recognised a very essential risk here, that the concept can be applied as a cover term for various politico-economic interests in the context of accelerating global economic competition. Thus, additional research is required in order to clarify the concept in a practical business context.

Table 3. Main streams of business ethics research in Asia, Europe and the USA.

APPROACH	AUTHOR
Development of theories and methodologies for responsibility and business ethics research	Cochran and Wood 1984, Donaldson and Dunfee 1999, Foka 2003, Fritzsche 1991, Lindfelt 2004, McDonald 2000b, see also Table 3
Analysis of organisational data	Broadhurst 2000, Etheredge 1999, McMahon 1999, Panapanaan et al. 2003, Sinclair and Walton 2003, Snider et al. 2003, Stanwick and Stanwick 1998
Stakeholder issues in business	Clarkson 1995, Frooman 1999, Scott and Lane 2000
Business ideologies in changing operating environments	Rytteri 2002, Takala 1989
Attitudes and behaviour concerning certain ethical issues	Bartlett and Preston 2000, Hindman and Smith 1999, Moran 1999, Verschoor 1998, Werhane 2000
Ethics and values of business people	Agle et al. 1999, Chatterjee and Pearson 2003, Conroy and Emerson 2004, Glover et al. 1997, Kujala 2001, Minkes et al. 1999, Stevenson and Bodkin 1998, Whitcomb et al. 1998
Addressing ethical issues in business, e.g. ethical codes	Harden Fritz et al. 1999, Payne et al. 1997, Poesche 1997, Sacconi 1999, Smeltzer and Jennings 1998
Ethical reasoning in business decision-making	Davis et al. 1998, Fritzsche 2000, Hong 2002, van Luijk 1997, McDonald 2000a, Sinkhappakdi et al. 1999, 2000, Takala and Urpiainen 1999
Development of ethics for international business	Ang and Leong 2000, Barclay and Smith 2003, Batten et al. 1999, Cooper et al. 2000, Cordeiro 2003, Harvey 1999, Hong 2001, Jackson and Calafael Artola 1997, Jeurissen and van Luijk 1998, Khera 2001, Koehn 1999, Moon and Woolliams 2000, Quazi and O'Brien 2000, Robertson and Fadil 1999, Snell et al. 1999, Weaver 2001, Wong and Chan 1999

2.3.3 Forestry and the pulp and paper industry as a target of research

The works reviewed in the previous sections showed that empirical research into responsibility issues in business is rare. Except for the study of Sinclair and Walton (2003) on environmental reporting within forestry and the pulp and paper industry, no international research into these issues has been carried out, or else publications have come out in

Table 4. Research into forestry and the pulp and paper industry in Finland, 1992-2004.

FOCUS OF THE RESEARCH	PERSPECTIVE	AUTHOR
Environmental management	Organisation/Institution	Halme 1997
Cultural framework of forestry	Institution	Hellström 2001
Participatory forest planning	Stakeholder	Kangas 1992
Environmental management	Sector	Kuisma 2004
Environmental marketing	Sector	Kärnä 2003
Environmental strategy	Organisation	Lahti-Nuuttila 2000
Ethical strategy	Organisation	Lindfelt 2004
Ethical strategy	Sector	Poesche 1997
Environmental and social ideology	Organisation	Rytteri 2002
Globalisation	Sector	Siitonen 2003
Environmental management	Sector	Uimonen 1998

national series and are difficult to trace. The most comprehensive range of empirical academic research dealing with forestry and the pulp and paper industry can be found in the region where the branch still plays an essential national economic role, in the Nordic countries. Recent doctoral and licentiate dissertations published in Finland provided a relevant background for assessing the justification of this work (Table 4).

The majority of the works studied environmental issues, and few of them ethical ones. Two explanations can be found for the essential role of environmental management and strategy in research. First, environmental management came into university programmes in the late 1980's, and secondly, the focus of the pulp and paper industry was on environmental issues until the mid-1990. The importance of social and ethical issues in the industry has increased from that time onwards, but they were classified at first as one form of environmental issue.

The stakeholder approach in the form of the new theory of the firm lost its essential role in academic management teaching in the early 1980's, and this meant that there was more room for other theories (Näsi 1995). It is obviously for this reason that the majority of previous studies adopted an organisational or institutional perspective when studying environmental and ethical issues within the industry or in the forest sector. A stakeholder perspective has been employed in the forest sciences, however.

2.4 Questions remaining open after the literature review

The conceptual literature review revealed no academic works on the concept of the acceptability of operations. Thus the concept may be said to have no scientific status as yet, although it is a relevant and applicable concept within industries when considering stakeholders' opinions. Corporate social responsibility and business ethics have been popular theoretical research themes, but empirical works are few in number, leaving the empirical content of these concepts and the real importance of their various elements within business open.

The review of previous studies on the forest sector and the pulp and paper industry pointed to a research tradition of focusing on one part of the value chain in the industry.

Obviously due to the economic importance of the sector in Finland, it has been considered essential to provide research information that goes deep into the details of either forestry, industrial processes or marketing, but there are no previous studies on the entire chain. Current business questions are nevertheless complicated combinations of economic, environmental and social issues. Managerial challenges are difficult to forecast if only one part of the value chain is considered.

It can be concluded on the basis of the literature review that the lack of scientific status for the acceptability of operations and the loose definition of responsibility in a business context are circumstances that point to a need for further research in order to clarify their application to local, regional and global business environments. In addition, there is a clear gap in both Finnish and international research when it comes to combining the stakeholder perspective with a holistic view of responsibility in the entire value chain of the pulp and paper industry.

This research aims at filling in these gaps by assessing responsibility issues within one branch, the pulp and paper industry, by using the concept of acceptability of operations to analyse the understanding of responsibility issues shown by external and internal stakeholders in a Nordic-based, globally operating company, Stora Enso. Four specific questions were posed in order to explain this phenomenon empirically:

1. What kinds of industrial operations do stakeholders in the pulp and paper industry consider acceptable?

2. How does the concept of acceptability relate to the concept of corporate responsibility?

3. How important are various elements of responsibility for the industry and its stakeholders?

4. What are the major challenges facing responsible, industrial operations?

3 DATA AND CASE DESCRIPTIONS

The economic change in the operating environment of the pulp and paper industry is well documented and has been widely discussed in public. The network of economic, social and environmental issues is seldom described in its entirety, however, although this would influence business and society in very different ways. I therefore consider it relevant to enter next upon a profound discussion of the case company, Stora Enso, and the four case mills in different countries and their operating environments, in addition to outlining the empirical material gathered from the mills between 1999 and 2001.

The regional characteristics of the role of the pulp and paper industry, technical details of the case mills and nature of the interview material are summarised in section 3.1 and the recent developments in the case company and mills, and in the pulp and paper industry in these regions in general, are discussed profoundly in section 3.2.

3.1 Cross-case study in various operating environments

The case study approach is a preferred strategy when the focus is on a contemporary phenomenon within society (Yin 2003), while a cross-case analysis deepens the understanding by seeing case-specific processes and outcomes as qualified by local conditions, so that it can develop more sophisticated descriptions and provide more powerful explanations (Miles and Huberman 1994). Thus the cross-case approach was

Table 5. The pulp and paper industry in the case countries.

CHARACTERISTICS	CHINA	FINLAND	GERMANY	PORTUGAL
1. Major raw material source	Non-wood pulp and fibre, market pulp, imported recovery paper	Natural forests	Recovery paper	Fast-growing plantations
2. Sectoral data/Year	*2004*	*2004*	*2003*	*2002*
Board and paper production, 1000 tonnes	49,500	14,036	20,400	1,537
Domestic consumption, 1000 tonnes	54,400	1,028	19,500	1,048
Number of companies/groups	?	12	100	44
Number of mills	3500*		200	
- pulp mills		19		7
- paper mills		21		40
Major future investments in production capacity	Extensive expansion	None	Some	None
3. Economic data/Year		*2004*	*2004*	*1998*
Proportion of GDP, %	Marginal	3.8	0.5	2.6
Proportion of export income, %	Net importer	24.0	+/-0	12
Expected growth in demand, %/a	13	1-2	2-3	1-2*
4. Socioeconomic data/Year		*2003*	*2004*	*2002*
Number of employees	?	[1)]68,000	[2)]45,000	[2)]4,200
Proportion of employment, %	Marginal	2.9	0.05	?
5. Environmental criticism and social attitude towards the industry				
- national industry	No	Yes	No	Yes
- international/global operations	No	Yes	Yes	No

[1)] Forest and paper industry

[2)] Board and paper industry

* Estimate

Sources: Carvalho Mendes 1999, CELPA 2006, Finnish Forest Industries Federation 2006, Paper and packaging… 2005, Statistical Yearbook of Forestry 2004, Verbandes Deutscher Papierfabriken e.V. 2006.

appropriate for studying responsibility in the various operating environments of the pulp and paper industry.

It was essential to start the work by assessing the regional role of the industry, since there are many national characteristics that influence the regional acceptability of operations (Table 5). Facts and figures were gathered from several sources, employing a variety of statistical principles. Thus, the information is not mutually compatible between cases. Table 5 provides a framework for assessing the role of the pulp and paper industry in the societies concerned – but it should be remembered that this is not intended as a statistical source.

The success of cross-case research depends greatly on the way in which the units of analysis are defined. This approach guided the gathering of both the quantitative and qualitative data, as the aim was to cover the variety of responsibility dimensions through the concept of acceptability. The case mills were selected through purposive sampling, which enabled the use of overt judgments to select cases that could be expected to produce the best answers to the questions. On this basis, the empirical material was gathered from four pulp or paper mills and their operating environments in China, Finland, Germany and Portugal belonging to the Nordic-based company Stora Enso.

Table 6. Technical data on the case mills.

CHARACTERISTICS	CASE 1: CHINA	CASE 2: FINLAND	CASE 3: (FORMER EAST) GERMANY	CASE 4: PORTUGAL
Year of foundation	1995/96	1937	1993/94	1965
Raw material sources	Market pulp from Veracel, Brazil	Natural forests, market pulp from Veracel, Brazil	Recovery paper	Fast-growing plantations
Number of employees	690	800	350	420
Product	Fine paper	Fine paper	Publication paper	Market pulp
Production capacity, t/a				
- pulp/de-inking plant		375,000	360,000	305,000
- paper	210,000	970,000	340,000	
Future development of the mill	No information	Production of softwood pulp only	No major investments	Sold

Sources: Helsingin Sanomat 2005a, 2006d, Maaseudun tulevaisuus 2006, Stora Enso 2006a, 2006b.

Since the case mills were to be selected on criteria that would result in contradictory outcomes (Yin 2003), the main criteria were differences in the raw material basis, products and location in terms of geographical, cultural and socioeconomic areas. The machinery represented the average technical level of the company, including the newest technology and also older machines that had been up-dated on the strength of replacement investments. This meant that the machinery was relatively new, as the Nordic pulp and paper industry has traditionally considered use of the newest technology to be crucial for the efficient and profitable production (Table 6).

Stakeholder analysis was employed to identify the relevant individuals and groups to be taken into account when gathering the basic material for the empirical study. Representatives of top management at the headquarters of the company, top and middle management and employees at the case mills, customers, suppliers, the authorities, policy-makers, non-governmental organisations, local people and associations representing the pulp and paper industry were interviewed in order to cover the various dimensions of responsibility through the acceptability concept. After each interview the respondent filled in a questionnaire to assist in prioritising the tentative acceptability criteria. The Chinese sample deviated from the others in that no environmental or other non-governmental organisations could be identified in the Suzhou area. The sample varied from 19 to 41 persons between the countries, the entire material being composed of 132 taped interviews and completed questionnaires (Table 7, Annex 1).

In addition to gathering the data, I have observed the case branch throughout the research period and used secondary material such as newspaper articles and company

Table 7. Distribution of interviewees.

STAKEHOLDERS	CHINA	FINLAND	GERMANY	PORTUGAL
A. Internal stakeholders				
1. Headquarters		3		
2. Wood Supply and Forest Products Div.		4		6
3. Case mill				
- top and middle management	6	8	7	2
- staff	3	2	12	3
Sub-total	9	17	19	13
B. External stakeholders				
1. Customers	2	2	2	-
2. Suppliers	1	4	2	3
3. Authorities	2	2	5	5
4. Policy-makers	2	3	5	1
5. Pulp and paper association and research institutes		2	1	1
6. Non-governmental organisations	-	7	3	3
7. Local people	3	4	5	3
Sub-total	10	24	23	16
Total sample	19	42	39	32

reports in order to form a comprehensive picture of the development processes in the company and case mills, as described below.

3.2 Research environment

3.2.1 Case company: Stora Enso

3.2.1.1 From a regional actor to a global company

The Nordic-based pulp and paper company Stora Enso Oyj was formed by the merger of two Nordic forest products companies, the Swedish Stora AB and the Finnish Enso Oyj, in 1998. The following history is based on the company's web-sites (Stora Enso 2006a).

Stora is considered to be the world's oldest company, as the first document related to it dates back to 1288, when copper mining was started in Northern Sweden. Wood processing started in the 1890s. Internationalisation began in 1962, when the company began to produce sulphite pulp in its own mill in Nova Scotia, Canada. During the 1970s it focused exclusively on becoming a forest products and power company, and in 1984 it adopted the name Stora. By the time of its 700th anniversary it was the largest manufacturer of forest products in Sweden and one of the largest in Europe. In 1997 Stora and the Brazilian company Odebrecht made an agreement to establish Veracruz Cellulose SA in Brazil and at the beginning of the following year Stora signed a memorandum of understanding to acquire a majority of the shares of the Suzhou Papyrus Paper Co., Ltd. in China.

Wood processing in Finland started around the same time as in Sweden, when the Norwegian Hans Gutzeit established a sawmill at the port of Kotka in 1872. International activities started from the very beginning, as the sawn timber was subsequently exported. A significant market for wood-based products disappeared with the collapse of the Russian Empire in 1917 and the Finnish declaration of independence. The Norwegian shareholders sold the company to the new Finnish State in 1919, and it was renamed Enso-Gutzeit Oy in 1924. As a consequence of the Second World War, two-thirds of the company's pulp-making capacity, other industries and nearly a quarter of its forest holdings remained on the Soviet side of the new border. Extensive investment programmes were implemented in the 1940s and 1950s, and growth continued from the 1960s to the 1980s. The expansion took on a new form in the 1990s, when the company started an era of mergers. Enso-Gutzeit Oy merged with another state-owned company, Veitsiluoto Oy, in 1996, and the company was renamed Enso Oy. In 1997, the group acquired a majority share in a German company, E. Holzman, which made Enso the second largest manufacturer of forest products in Europe. The Boards of Directors of Stora and Enso approved the merger of the companies in June 1998.

Now domiciled in Finland, Stora Enso is currently one of the world's leading forest products companies, with core businesses that include magazine paper, newsprint, fine paper, packaging boards and wood products. The group holds a leading global market position in some product areas. In order to strengthen its operations, and simultaneously its financial reputation, Stora Enso has continued an intensive expansion through the establishment of production units, the acquisition of companies and mergers in Asia, Europe, Latin America and North America.

This expansion has not automatically guaranteed an improved financial performance, however. The pulp and paper industry has had a reputation for over-investment, being very

cyclical with a poor value creation record. Stora Enso, like large pulp and paper producers in general, suffered from constantly declining end-product prices that have shown this trend in real terms for the past 20-30 years (Siitonen 2003). Towards the end of the year 2000 the world economy began to show signs of slowing down, and this was reflected in the pulp and paper industry. All forest product and paper producing regions of the world were also faced with rising energy and material costs and felt mixed effects from the weaker U.S. dollar. Thus the profitability yardstick of return on capital employed (ROCE) for the global industry averaged 5.5% in 2004, far from the target of 10 -12% (Global forest and paper… 2005). In addition to these general challenges, the profitability of Stora Enso was undermined in particular by an extended labour dispute that affected the entire Finnish forest products sector and by increased variable costs. As a consequence, the ROCE of Stora Enso dropped from 6.3% in 2004 to the historically weak level of -0.8% in 2005. The focus of the company in 2006 has therefore been on strengthening its financial performance through profit improvement initiatives (Stora Enso 2006b).

A depression as such is not a new phenomenon, as the sector has always been sensitive to economic fluctuations. However, the capital invested in Stora Enso was more patient in the times before listing than it is today. At that time the state-owned Enso Oyj in Finland had an essential socioeconomic role in addition to its economic importance. Thus the company would never have been set a ROCE target such as 13% before the days of the current quartile economy.

Like all large pulp and paper producers, the company is in the midst of a radical change in its operating environment. The demand for paper and board products in Europe and North America, where the majority of the production capacity is located, is expected to grow only slightly, by 2-3% per year, whereas major growth will take place in the emerging markets in the former East European countries, in Asia and to some extent in Latin America. The demand for paper and board in China, for example, is estimated to grow at an annual rate of about 13% (Paper and packaging… 2005). Major investments in new production capacity can hardly be expected in the Nordic countries and Central Europe, but these will be carried out in the areas of growing demand. In addition, production costs in European units are higher than those at Asian and Latin American mills. The Nordic-based pulp and paper industry has traditionally relied on the most recent technology to increase its profitability, aiming, for example, at reducing the costs per tonne of paper produced by installing broader and faster paper machines that produce more with a small employment input (Helsingin Sanomat 2006b). The industry is now coming to the end of this road, especially in the Nordic countries. It seems that actions to break up the overcapacity are starting to influence the market situation, to some extent at least, and expectations regarding economic performance are becoming more positive. Work is still in progress, however, to identify new tools for remaining competitive in Europe.

In addition to the financial challenges, the forest and paper industry is one of the industrial sectors that has been most affected by environmental criticism and social movements (Donner-Amnell et al. 2004), as its raw material basis, forest resources, is culturally defined and is not only a production factor for industry but comprises a range of non-industrial values related to ecological, aesthetic and cultural benefits (Hayter 2004).

3.2.1.2 Conceptual responsibility

The company has always had to consider responsibility issues in its relations with the surrounding society, but the content of this responsibility has changed. The public debate on financial, environmental and social issues, together with the company's financial and expansion targets, has boosted the formulation of policies, strategies and operating principles during the last twenty years. The development and improvement of environmental policies and communication was started in the early 1990's as a consequence of awareness inside the company and of external criticism (Environmental Manager, Wood Supply Finland, Annex 1, Finland). Internationalisation and external criticism of the social issues related to its international operations enlarged the company's social policy from employee issues at the mill level to cover larger societal responsibilities at the company level in the late 1990's. Expansion also brought shareholder value to the fore as an essential decision-making criterion. To combine the various financial, environmental, social and cultural objectives, the company launched a declaration of its mission, vision and values in 1998, reflecting its Nordic roots (Stora Enso 2006a, E. Pitkänen, Vice President, Sustainability Communication and CSR, Stora Enso, personal communication, December 14, 2005).

Stora Enso started to integrate corporate social responsibility into its operations in the early 2000's, and this is currently established as one of its values. The company equates sustainability with corporate responsibility, including environmental and economic issues, in addition to corporate social responsibility. The three responsibility elements are considered equally important, as outlined in Figure 3. The company has adopted the

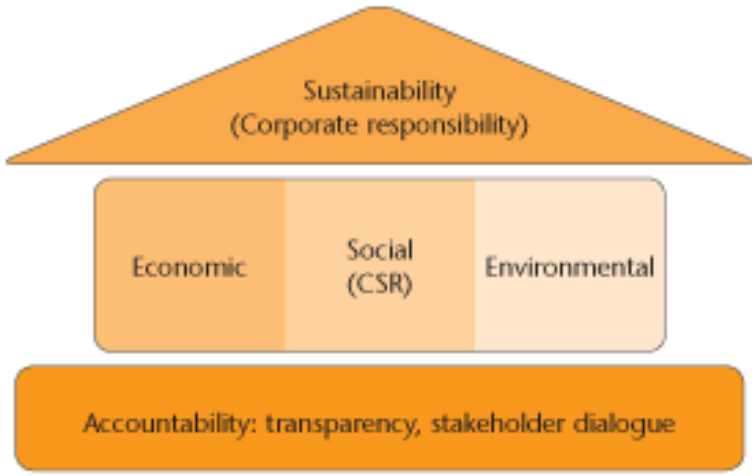

Figure 3. Elements of Stora Enso's corporate responsibility. Source: Stora Enso 2006a.

approach that local operation units define responsibility issues at the local level (E. Pitkänen, Vice President, Sustainability Communication and CSR, Stora Enso, personal communication, April 7, 2005).

In addition to financial issues, economic responsibility refers to economic impacts on the societies in which the company operates, in other words to the value that the company creates for its stakeholders and how it contributes to the well-being of the communities and countries where it operates. Social responsibility is defined as respect for the cultures, customs and values of individuals and groups in these countries. The company complies with, and when necessary goes beyond, the requirements of national standards and legislation. Environmental responsibility is understood as renewability of the main raw materials and recycling of raw materials and products. The Sustainability Committee, chaired by the Head of Corporate Support, serves as the overall coordinating body on group-wide sustainability issues.

In addition to the definition of corporate responsibility, the company established a code of ethics in spring 2004 to fulfil the requirements of the US Sarbannes Oxley Act of 2002, in addition to fostering the company's own competition compliance programme. The code summarises the current sustainability management approach and practices (Stora Enso 2006c).

Stora Enso describes corporate governance as a set of policies, principles and guidelines intended to support responsible management and control of the company. The current role of corporate responsibility in corporate governance can be summarised on the basis of the impression provided by the company's web-sites (Figure 4).

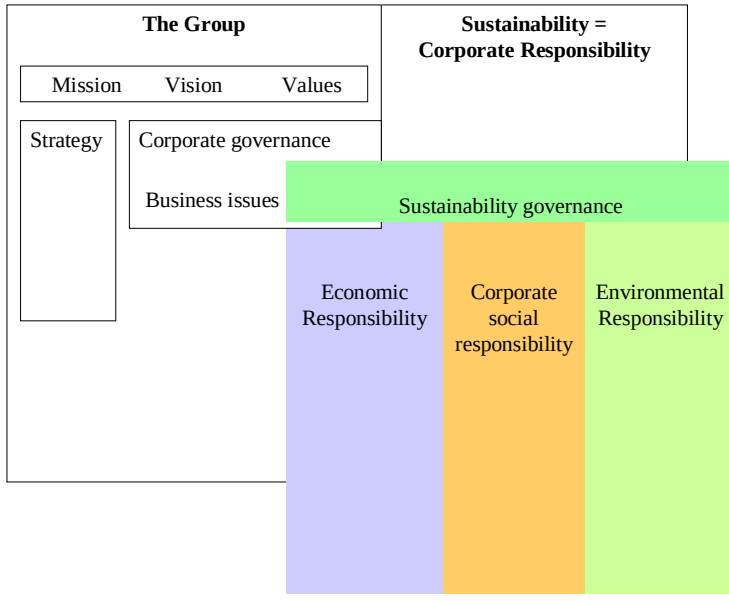

Figure 4. Place of corporate responsibility in Stora Enso management. Source: Modified from Stora Enso's web-sites (Stora Enso 2006a).

3.2.1.3 Practical responsibility

Responsibility has been reflected in the operations of Stora Enso since the beginning of the take-off of industrial wood processing in the late 19th century. Responsibility was an employee issue, and was consequently centred on working conditions, from the early 20th century until the 1970's, when the environmental debate started to influence the company's operations and decisions (Rytteri 2002). Issues related to social and environmental responsibility could have been categorised as national and international/global questions from the beginning of international operations in the 1960's onwards.

The first actions reflecting environmental responsibility at a national level were concrete investments aimed at replacing ageing machinery with environmentally friendly production technology from the mid-1980's onwards. These investments were commonly carried out simultaneously with other replacement investments which reflected the importance of technical issues at the time, although environmental issues were recognised, too.

"(#3) Well, it is so, that these investments, they had to be carried out as large entities (not only environmental ones). *And the starting point was that when a new unit was built, environmental issues were taken into account." (Retired Environmental Manager, Oulu Mills, Annex 1, Finland).*

Air pollution (unpleasant smells) and poor water quality were significant problems in the days before the environmental investments, and thus an improved quality of life for the local people as a consequence of decreases in emissions and effluent levels was the most significant social impact of these actions.

The focus of environmental responsibility shifted from industrial issues to forestry issues in the 1990's, when legislation focused on efficient wood production, although several public movements had emphasised the role of sustainability in forest management since the 1980's.

"*(#3, #17, #35, #69) It was the view* (in clear-cutting areas) *that annoyed people. The forest sector's own formalism was one reason behind the pressure. We recognised that the organisation must develop." (Environmental Manager, Wood Supply Finland, Annex 1, Finland).*

The company did not wait for an updating of the national forest laws, but developed its own methods and principles for forest operations that aimed at more sustainable utilisation of forest resources than was required under the national legislation of various countries. These actions had no direct social impacts, but the company and its personnel learned in the process to take other external stakeholders into consideration in addition to clients, shareholders and local people. Thus the company's awareness of social issues increased during this period.

Global-level responsibility was reflected in a number of forest projects implemented in Africa, Asia, Australia, Europe and Latin America in the 1980's and 1990's (Enso Forest 1998). These were carried out by the company's wood supply unit until the late 1980's, when they were hived off to a subsidiary, Enso Forest Development Oy Ltd., later Stora Enso Forest Consulting Ltd. The projects, and the experience gained by the experts working on them, varied from village-level forestry planning to industrial-scale reforestation, and

from arid deserts to tropical rainforests (Enso Forest 1998). The business idea of the subsidiary was to sell know-how in addition to physical facilities such as plant nurseries and the equipment required for forest management planning. The projects were financed from governments' budgets at home and in the host countries, by the European Union and the United Nations, and from development aid budgets and private sources.

The projects had a direct relationship to the business of Stora Enso through the raw material basis and wood processing, and thus produced dual long-term impacts in both the project areas and the company. One of the major long-term impacts was the strengthening of institutions in the host countries. Local people were usually trained in the projects and their knowledge of technical, financial, social and environmental issues related to forests and wood processing increased. In addition, the facilities bought for the projects were left to the local organisations when the work ended. Conversely, the co-operation also improved the organisation's knowledge of potential new areas for commercial operations, and working in distant places and in challenging circumstances improved the staff's professional skills. The projects may well have had their most profound influence on the staff thinking, however, as people started to understand the real social and environmental problems of the less developed areas of the world and the complicated networks that these formed. This approach supported the findings of Schein (2004) that leaders must travel to become culturally sensitive and think like an anthropologist in order to understand and respect various cultures and sub-cultures.

The subsidiary was absorbed back into Stora Enso in the early 2000's and the projects were sold to other forest consulting companies. The company no longer needed its strategic extension unit, as it had expanded to several new areas on other continents. In addition, this kind of long-term action did not fit in very well with the quartile thinking that spread to the economy from the mid-1990's onwards (A. Mikkilä, former Managing Director, P.T. Finnantara Intiga, Indonesia, personal communication, January 28, 2006).

The company's current concept of responsibility is more or less equivalent to the social, socioeconomic and environmental impacts of its operations as reported in its annual Sustainability Report. In addition, the report indicates that its stakeholder ideology means in practise largely stakeholder dialogue. Its practical responsibility projects are focused outside the actual field of know-how and area of operation. The company signed a co-operation project with UNICEF in 2004 in order to support educational activities to the extent of USD 250,000 per year during the next five years. The purpose of the project is to support, and hence improve, the level of education in the world in the long term (Stora Enso 2005, 2006c).

3.2.2 The Suzhou area of China

3.2.2.1 The pulp and paper industry in China

Papermaking has long traditions in the People's Republic of China. A monk of the imperial court discovered paper around 100 AD, and the dynamic growth in Chinese industries after the revolution of 1949 also concerned the pulp and paper sector. Despite these traditions, the pulp and paper industry nevertheless has a marginal role in the national economy. China's industrial structure is diversified, with no distinctively dominant sectors, the main branches being food processing, metalworking and engineering and the textile industries, each representing 14-16% of total industrial production (Eronen and Deqiang 1992).

Paper manufacturing is concentrated in the densely populated urban areas, the industrialised east being home to the largest Chinese paper producers. The paper industry in China is characterised by two structural peculiarities: the high proportion of non-wood fibres used and the small average size of the mills (Eronen and Deqiang 1992). China is desperately short of wood pulp and has for a long time been using alternative sources of fibre, e.g. agricultural residues, which account for nearly 85% of the pulp processed by the industry nationally. The mills that process wood-based pulp rely solely on plantations for their pulpwood and on imported pulp, due to the prohibition of logging in native forests introduced by the government in 1998. The existing plantations can only provide about 8-10 million cubic metres of pulpwood a year, however (Paper and packaging… 2005).

Old manufacturing methods still prevail in small mills using non-wood fibre sources. The degree of concentration in the sector is relatively low, and the top 30 paper enterprises in China produced about 30% of the total output in 2004. The industry suffers from various problems, including a highly fragmented manufacturing base with many sub-scale and outdated producers, a shortage of raw materials, a relative dearth of natural resources such as water and energy, and environmental pollution. China's State Environmental Protection Administration (SEPA) has closed at least 7000 pulp and paper mills since 1997, and the government plans to shut another 1800 mills in an attempt to reduce pollution. Even so, there were about 3500 paper and board mills in China in 2004. The largest board and paper producers have been investing heavily in the modernisation and expansion of their plant in recent times, and the Chinese government has been actively subsidising these operations (Paper and packaging… 2005).

Chinese pulp and paper mills have traditionally employed many more workers than European or American mills, replacing technology with labour. An average mill in China may employ thousands of people, while a European or American mill will employ a few hundred. Even so, the pulp and paper industries are a marginal employer in China, and the industry is socioeconomically important at a local level rather than having a significant role in the national economy.

The public debate surrounding industry has been limited so far, due to complexity of the economic, societal and political situation. The operating possibilities of national and international non-governmental organisations have been limited, although the movement towards measures taken by the public sector increased significantly in the 1980's (Paltemaa 2005) thanks to social and political reforms in China (Yun 2005), in spite of the delay in this development caused by the violent end of the students' protests in Tiananmen Square in 1989. Some national environmental organisations were established in the 1990's (Yun 2005), but environmental issues in the forest sector have been considered largely in the context of land use, timber supply or visual beauty rather than as pollution problems (Richardson 1990).

China is the world's second largest market for paper and paperboard, and the potential for further growth is estimated to be an annual rate of 13%. The central government is intensively promoting a market economy (Nojonen 2005) and is keen to promote China's pulp and paper industry in order to reduce its reliance on imports. The country cannot afford to finance the expansion on its own, however, and therefore it has explicitly invited overseas investors to participate in both industrial development and afforestation programmes. There are obvious cultural, political and legal difficulties, however. Any company that wants to trade in China will need to take account of the social traits of the local populace, and foreign investors are expected to bring higher standards and special

strengths to the markets - against strong domestic competition (Paper and packaging… 2005).

Regardless of the challenges, China offers a relatively stable society for new investments compared with many other commercially attractive areas in Asia, because of its political system. This combined with the huge market and low production costs make China an attractive investment target for foreign companies in the short term. On the other hand, continuous economic growth will increase the unequal distribution of welfare in the country, which has been reflected in increasing demonstrations in the countryside (Helsingin Sanomat 2006c). The government is facing a crucial challenge in the form of demands for balanced development in this huge country in order to 1) guarantee a reasonable living standard for more than a billion people and 2) provide a socially and politically stable location for economic activities in the long term.

3.2.2.2 The Suzhou Mill

Foreign pulp and paper companies investing in China prefer to establish new production units rather than acquiring existing ones, due to the old-fashioned structure in the sector. This was the strategy of Stora Enso, too, when acquiring a majority of the shares in the Suzhou Papyrus Paper. The mill started operations in 1996 as the first high quality coated paper manufacturer in China.

The Suzhou Mill is located in the Suzhou New District, Jiangsu Province, China, by the Yangtze River, relatively near Shanghai. The Suzhou city is a centre of industrial production and has a population of around 800,000 people. The paper industry is of minor economic and socio-economic importance in the region.

The mill is the largest producer of coated fine paper in China, with an annual capacity of more than 210,000 tonnes and 670 employees (Stora Enso 2006a). Its technology complies with international standards and with the national environmental laws (Suzhou Papyrus Paper), and the quality of its products is good enough to replace imported high-grade coated and uncoated wood-free paper. Its production is marketed within China, with a minor proportion, 5-15%, exported to Hong Kong and Southeast Asia (Deputy Production Manager, Sales Manger, Suzhou Mill, Annex 1, China).

The mill currently imports its raw material, short-fibre eucalyptus market pulp, from Stora Enso's joint venture pulp mill, Veracel, in Brazil, which started production in 2005 (Stora Enso 2006b). The company is nevertheless continuing with its long-term expansion strategy based on its own fibre sources in China. It has a plantation of over 20,000 hectares of eucalyptus hybrids in southern Guanxi, and has recently purchased a further 34,000 hectares of land, bringing the total plantation area to 60,000 hectares (Stora Enso 2006b). The aim is to have 120,000 hectares by 2010 (Stora Enso 2006a) and to establish a pulp mill in the same area in 2010-2012. This will be integrated with a paper and board mill to be built later (Helsingin Sanomat 2005b).

3.2.3 Finland

3.2.3.1 The pulp and paper industry in Finland

Industrialisation in Finland began at the end of the 19th century, and wood processing has been one of the major industries ever since. The forest and paper industry had a significant role in the country's economic development throughout the 20th century and still retains

this role today (Table 6). The branch lost its dominant position in the national economy only in the 1990s, when telecommunications and related branches rocketed to success. The socio-economic importance of the forest sector is also decreasing, as although it was still a significant employer in the 1970s, when 20% of the labour force was involved in forestry (Räisänen 1999), its contribution to employment in 2004 was only 2.8% (Finnish Forest Industries Federation 2006). The total positive effects on regional economies through the gross domestic product and employment rate are still evident, however, in the form of lower unemployment rates, especially in Northern Finland (Honkatukia and Törmä 2005a, 2005b).

Expansion in the industry started in the 1950s (Hellström and Reunala 1995), and nowadays Finland has a number of major wood-processing companies and is one of the world's largest pulp producers, even though it has only 0.5% of the world's forest resources (Finnish Forest Industries Federation 2006). The Finnish pulp and paper industries have been restructuring since the mid-1980s, with a series of mergers in which a total of about 45 companies were consolidated into 4-5 major groups (Donner-Amnell et al. 2004). The branch began the next step of expansion in the 1990s, when international mergers became common, and the world's largest companies domiciled in Finland are currently concentrating on the establishment of new production units in Asia and Latin America.

The first industrial criticism arose in the early twentieth century, when the industrial workers and impoverished rural population started to claim their rights. Criticism of production techniques in Finland and other countries of Central and Northern Europe, and also in North America, on account of their pollution effects started in the 1970's (Hellström 2001). The public interest turned from the pollution effects of industrial production to forest issues, such as sustainability and biological diversity in the production of roundwood, as a consequence of the UNCED summit in Rio in 1992 (UNCED 1993), and the debate is now returning to social issues, as representatives of non-governmental organisations have started to criticise the Asian and Latin American operations of expanding companies (Kuvaja et al. 1998, Miettinen and Selin 1999).

The operating environment of the Finnish pulp and paper industry has changed radically during the past twenty years. The liberalisation of the financial markets and the entry of Finland into the European Monetary Union (EMU) deprived the country of its traditional tools of monetary policy for smoothing over the influence of economic trends on the industry (Senior Vice President, Corporation Strategy and Investments, Annex 1, Finland). Devaluation of the Finnish currency, for example, was commonly used as a means of keeping the prices of paper products at a competitive level in the main market areas. Competitiveness is nowadays a crucial problem for industries based in Finland:

"(#1, #17) Competitiveness is one of the major challenges, especially in Finland. (#13) We have been and still are at the top level in the world for efficiency, but the current situation is more or less that (#17) raw material and labour costs are absolute (low) *in the Far East, for example and even in Southern Europe. (#8) And then the availability of fibre* (raw material) *will be a problem in Finland." (Managing Director, Stora Enso Oulu Mills, Annex 1, Finland).*

One special characteristic of the forest industries in Finland is that the majority of the raw material, 53% of forest area and 68% of the volume of growing stock, is in the hands of private forest owners (Kärkkäinen 2005). This means that mills have to gather a large proportion of their raw material from small plots, which is a logistic and financial

challenge. Regardless of these characteristics, the forest resources provide excellent operating possibilities for the current production capacity, although Kärkkäinen (2005) forecasts that the national pulp and paper industry in 2020 will be only marginally larger than today. It is not realistic to increase production capacity on the strength of the already relatively well utilised domestic wood resources, and increasing wood imports is hardly a viable long-term solution, either. In addition, Finland is relatively far away from the markets. It does provide a socially and politically stable operating environment for the existing production units in the long–term, however.

3.2.3.2 The Oulu Mills

The Oulu Mills are located close to the city of Oulu, which had 130,000 inhabitants in 2005 (Oulu 2006). Although the city is one of the most important high-tech centres in Finland, the traditional heavy industries are still significant for the regional economy. The invasion of modern branches has detracted from their importance, however, and forced them to develop their operations.

Oulu Oy, which had established the first pulp mill in the area in 1937, merged with Veitsiluoto Oy in 1986, at which point efforts began to develop production at the mills. The first paper machine went on stream in 1991. Veitsiluoto and Enso-Gutzeit Oy merged to form Enso Oy in 1996, and this company reinforced its concentration on paper production by installing a second paper machine in 1997. After the merger of Enso Oyj with the Swedish Stora AB, the Oulu Mills became a part of Stora Enso's Fine Paper division (Stora Enso Fine Paper… 1999, 2000).

The plant currently includes a pulp mill, two paper machines and a sheet cutter, employing 800 people. The paper mill produces art printing papers, using fully bleached softwood and hardwood pulps as its raw materials. The annual production capacity of the pulp mill is 375,000 tonnes, and that of the paper mill and sheet cutter 970,000 and 300,000 tonnes, respectively (Stora Enso 2006a).

Annual wood consumption is approximately 1.9 million solid cubic metres (over bark). The roundwood comes mainly from private forests in Northern Finland, while the majority of the imported hardwood has so far come from Russia (Stora Enso Fine Paper… 2000), although recent re-arrangements in the production process have reduced imports of Russian wood, which is at times more expensive than domestic supply and is subject to various political and institutional difficulties that make supplies insecure in the long term. The mill replaced the domestic short-fibre pulp with eucalyptus pulp from the Brazilian joint venture mill Veracel in October 2005 (Stora Enso 2006b). The pulp mill will concentrate in the future on the production of long-fibre pulp based on domestic conifers. These arrangements provide concrete evidence of both the positive and negative impacts of globalisation. The positive impacts at the local and national level include 1) an increase of one million cubic metres in the demand for local conifer wood, 2) a decrease in dependence on imported Russian wood, and 3) reduced emissions because of the continuous use of one tree species instead of changing species during the cooking process (Maaseudun tulevaisuus 2006). In addition, the company took its Veitsiluoto Sawmill in Northern Finland off the sales list and is to resume operations there in order to utilise the increasing volumes of conifer logs more efficiently and produce sawdust for the pulp process. The final impact on emissions and the greenhouse effect is not clear, however, as pulp imports from Brazil have increased as a consequence of the arrangements.

3.2.4 Former East Germany

3.2.4.1 The pulp and paper industry in Germany

Germany's paper industry accounts the majority of the production capacity in Europe, as that country ranked fifth in the world after the USA, China, Japan and Canada in 2003 (Verbandes Deutscher Papierfabriken e.V. 2006). The majority of the production capacity belongs to large multinational pulp and paper groups, however (Sæther 2004, Uimonen 1998). Pulp and paper producers have a minor economic role in Germany and their role as national employers is marginal, although the forestry sector achieves considerable importance as an employer at the regional level, especially in economically less developed rural areas (Schraml and Winkel 1999, Verbandes Deutscher Papierfabriken e.V. 2006).

The industry was still divided into modern western and old-fashioned eastern units at the time when the present data were gathered in the early 2000's, as is reflected in the number of companies and production plants in Table 6. The mill size was still relatively small and the technology old. The unprofitable production plants owned by East German pulp and paper companies were closed down in 1990-1991, and the rebuilding process was still going on in the late 1990's (Schraml and Winkel 1999).

Recycled paper has become an attractive resource within a relatively short time, leading to much new production (Donner-Amnell et al. 2004). Thus production is based very much on the re-processing of recovered paper, which account for 65% of all paper manufactured in 2004. Domestic production covers more or less the total consumption on the home market, although the country exports some paper and board products and imports others (Verbandes Deutscher Papierfabriken e.V. 2006).

There has been a considerable environmental debate related to forestry questions in Germany. Sustainability had already become a major goal in timber production in the late 18th century, and because of this long tradition, the contradictions between wood production and other uses of forests did not reach the same intensity as in most other European and North American countries (Hellström & Reunala 1995). The general environmental movement and related public discussion that arose in the former West Germany in the 1960's and 1970's covered topics from the solid waste problem to energy questions, the last-mentioned being a highly emotional topic, as automobile manufacturing is a staple industry in the country (Uimonen, 1998). The environmental debate was marginal in the former East Germany, and began only after the destruction of the Berlin Wall in 1990.

Germany is a socially and politically stable operating environment for industry. It provides an attractive location for production units of large paper and board producers, being situated in the midst of the European markets and close to sources of recovered paper and having little criticism of its national industries. The rate of recovery of paper in 2004 was 73% of total paper consumption, however (Verbandes Deutscher Papierfabriken e.V. 2006), so that there is little additional domestic raw material left to exploit. This together with the forecast of only minor growth in the demand for board and paper indicates that only moderate investments in new production capacity can be expected in this region in the future.

3.2.4.2 The Sachsen Mill

The Sachsen Mill is located close to the town of Eilenburg in Saxony, some 30 km northeast of the city of Leipzig. This state was an important industrial area in East Germany, its main manufactured products being brown coal, chemicals, metal products and foodstuffs. There are still a large number of small-scale pulp and paper plants in the region, but the majority of the production capacity dates from East German times or before.

The unification of Germany made the former East Germany an attractive investment target, as the risks were thought to be lower in this area than in the other countries of the former eastern bloc. Soon after unification, Enso Oyj decided to invest here (L. Salovius, Vice President, Environment, Stora Enso, personal communication, 18 August, 2000), choosing the same strategy for expanding its operations as Stora in China. Since it was more profitable to establish a new mill than purchase an existing one, the planning and building of a newsprint mill started early in 1993. The machinery was on stream by autumn 1994, and the mill became one of the largest foreign investments in the recently unified Germany (Stora Enso Newsprint, Sachsen Mill 1999, Stora Enso Newsprint, Sachsen Papier 1999). After the merger of Stora AB and Enso Oyj, Sachsen Papier Eilenburg GmbH became a part of Stora Enso's Newsprint Division, under the name Stora Enso Sachsen Mill.

The mill includes a de-inking plant that processes around 470,000 tonnes of recovery paper annually and a paper machine with a newsprint production capacity of 340,000 tonnes. The capacity has been almost fully employed recently, as annual production in 2004 was around 320,000 tonnes (Stora Enso 2006a). The demand for newsprint is good in Saxony, and most of the production has been sold to local customers (Stora Enso Newsprint, Sachsen Mill 1999).

The mill has had significant positive social impacts on its surroundings and minor negative environmental impacts. Its construction created 350 direct jobs in Eilenburg, where the unemployment rate was very high, and a significant number of indirect jobs accrued in the region (Stora Enso Newsprint, Sachsen Papier 1999).

3.2.5 Portugal

3.2.5.1 The pulp and paper industry in Portugal

The first pine plantations in Portugal were established in the 14th and 15th centuries to reduce the gap between the demand and supply for timber, the demand having increased significantly as a consequence of shipbuilding to meet the needs of navigation and the expansion of the Portuguese empire. Nowadays the Portuguese forest sector has a heterogeneous structure. It has evolved around three key forest products which are very different from each other in terms of production and business structure: pine timber and the woodworking industries, fast-growing pulpwood and the related pulp, paper and board industries, and cork production and the cork industries (Carvalho Mendes 1999).

Pulp and paper is now one of the major sectors of Portuguese industry, together with textiles and clothing, agriculture and the food industry. The first pulp mills were established at the beginning of the twentieth century, and the industry was ranked 16th in the world in 1998 (Carvalho Mendes 1999). Its current importance to the country is reflected in the fact that its activities are carried out outside the main urban centres, that it contributes to the level of industrial and rural employment, particularly in economically depressed zones, and

that it makes substantial contributions to industrial GDP and the balance of payments (CELPA 2006).

The public debate culminated in eucalyptus plantations being at their most extensive in the 1980's, when the influence of the fast-growing plantations established in the 1960's became visible in the landscape. The political liberalisation and increased freedom of speech that followed the revolution in the mid-1970's was another reason for the stimulation of this debate. Discussions on the polluting impacts of the industry increased in the late 1990's, following the country's accession to the European Union, because EU standards are stricter than the national ones.

Regardless of the economic importance of the industry, the Portuguese Paper Industry Association, CELPA, identified a series of challenges for development related to forests and forest policy, the availability of raw materials, and energy and environmental issues. The agricultural and forest legislation is inadequate to guarantee sustainable forestry and a reliable wood supply for the industry. In addition, the pulp and paper industry is based mainly on fast-growing eucalyptus, which has environmental impacts such as soil erosion, fires and insects. This has led to an inadequate supply of domestic wood for the industry. The deficit has been made up through wood imports, mainly from Spain. In addition, there are several national actors in the pulp and paper sector (Table 6), which can be a challenge for competitiveness. These problems combined with the relatively distant location of the markets lead to the conclusion that no large investments in production capacity can be expected in the near future. Portugal is a socially and politically stable operating environment for the existing mills, however, regardless of the institutional difficulties.

3.2.5.2 The Celbi Mill

Figueira da Foz, located 180 km north of Lisbon, was known as a seaside resort and a fishing town in the 1960s, when representatives of the Swedish pulp and paper industries started to assess the area as a potential location for a pulp mill. Since then the town has grown significantly.

Celulose Billerud, SARL, was founded in 1965 as a result of a joint venture between the Swedish company Billerud AB, the Portuguese Companhia União Fabril (CUF) and a group of local landowners. The company started up in 1967, at that time producing dissolving pulp for the manufacture of textile fibres and other products. The current Stora Enso Celbi SA employs around 400 people, and the Celbi Mill has an annual production capacity of about 300,000 tonnes of bleached eucalyptus pulp (Stora Enso 2006a).

The mill processed some 810,000 m^3 of eucalyptus roundwood in 2004, of which 47% was supplied by its own plantations and the remaining 430,000 m^3 was purchased on the local market (Stora Enso 2006a).

The main market for Celbi's pulp is the European Union, with 95% of production destined for Germany, Sweden, the Netherlands, France and the United Kingdom. The Portuguese market absorbs the remaining 5% of the sales volume (Stora Enso Celbi 2000). Stora Enso announced in October 2005 that it aimed to improve its profitability by closing or selling some of its mills and production lines in Finland, Sweden and Central Europe (Helsingin Sanomat 2005a). Although the Celbi mill has been a financially profitable unit, Stora Enso is selling it as part of the profit improvement programme to a Portuguese company (Helsingin Sanomat 2006d).

4 RESEARCH DESIGN AND METHODOLOGIES

Just as several theories can be applicable to a multidimensional and cross-cultural research problem, so it can also be studied with several methodologies. I regarded the use of three methodologies to be appropriate in the present case in order to provide a profound picture of the phenomenon. The quantitative method yields systematic information on the pre-defined issues, the qualitative method covers a variety of empirical issues related to the concepts of acceptability and responsibility, while the comparative analysis confirms findings of the quantitative and qualitative analyses.

This chapter will present first the theoretical foundations for the study and the design of the analytical framework and secondly the two applied methodologies, the Analytic Hierarchy Process (AHP) and qualitative analysis. In addition, triangulation for comparing the results of the quantitative and qualitative analyses was reviewed. Thirdly, the implications and conclusions are assessed by presenting a reliability and validity scheme.

4.1 Research design

4.1.1 Application of the theoretical foundations

Stakeholder theory was employed as the main theoretical foundation for this study, and the work includes characteristics of both descriptive and normative stakeholder theory (Donaldson 1999, Donaldson and Preston 1995). The approach is used here as a tool that guides both the gathering and analysis of the data. The gathering of the data was guided by the descriptive theory, in that it aimed at describing both the internal and external stakeholders' opinions, while the influence of the normative theory is reflected in the analysis and conclusions when describing and comparing the ways in which the concept of responsibility is understood from the perspectives of the company's personnel and external stakeholders.

Some additional theoretical foundations were identified as useful for creating a comprehensive understanding of the problem in the industry's various operating environments. Important ideas included a theory of business values and a holistic view of natural resources. The theory of business values refers to judgements, including the process involved in making judgements (Frederick 1995). According to the holistic view, natural resources can be looked on not only as attributes of the physical environment but as attributes of the economic, political, social and cultural orders as well (Hellström 2001).

The use of several theoretical foundations entails the risk that the scope of the research may remain open, and even unclear. I found this basis applicable and justified theoretical and conceptual development based on the empirical phenomenon studied, however. The theoretical foundation did not tie the work to one perspective but allowed the theoretical and conceptual findings to be grounded in the data.

4.1.2 Analytical framework

The theoretical and conceptual bases guided the gathering and analysis of the material, thus forming the analytical framework for the study. I employed the value chain approach, in that the stakeholders interviewed represented the major part of the chain from the raw

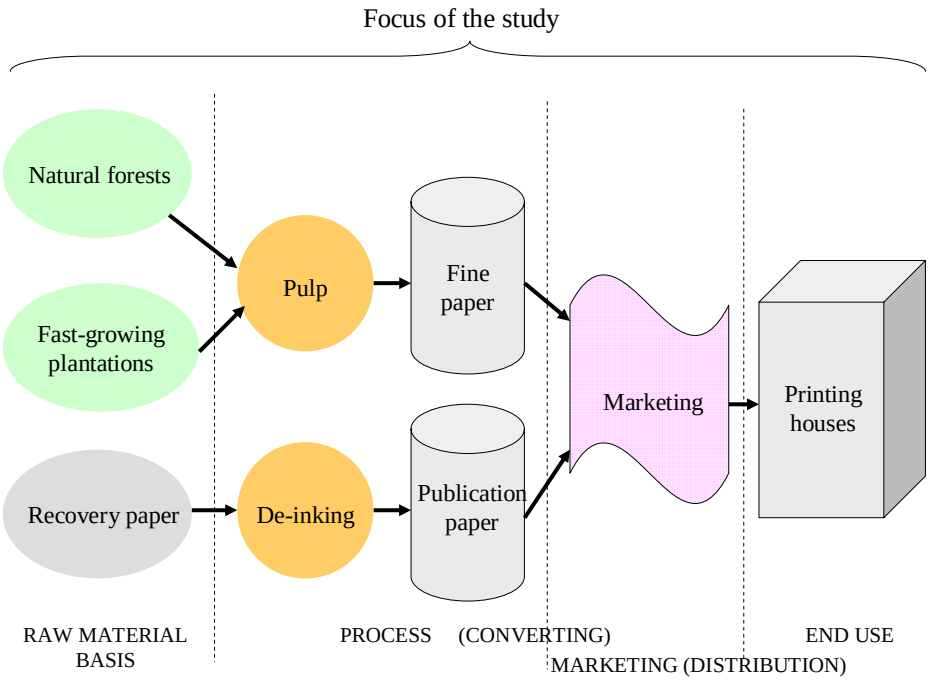

Figure 5. Parts of the value chain represented by the stakeholders.

material source up to the end-users of the products (Figure 5). Conversion was perceived as part of the process, and was thus included here. The sheet cutter, for example, is located at the end of the process in the Oulu mill. The role of distributors as essential or critical stakeholders was not emphasised in the case interviews in Finland, however, and thus distribution was not distinguished as an independent part of the value chain.

The research was designed as a modification of the acceptability hierarchy based on Saaty's (1980) hierarchical decision-making process, as presented in the form of the Analytic Hierarchy Process (AHP). The model in Figure 6 was modified here on the basis of Articles I, II and III to describe the entire problem investigated. The idea behind this is that stakeholders should define and assess both qualitatively and quantitatively the acceptability of operations in the pulp and paper industry, and that the resulting ideas should be generalised as responsibility issues.

The acceptability model describes multi-criterion problems by reference to multiple actors. Previous academic work was used to gain support for the formulation of the acceptability dimensions in Articles I and II. The actors and elements in acceptability were integrated into an acceptability model having responsible business as its top-level goal, followed by the criterion of the acceptability of operations. The third level comprised actors or stakeholders, and the fourth the dimensions of economic, environmental, and social acceptability. Outcomes and innovations discovered from the results are at the bottom.

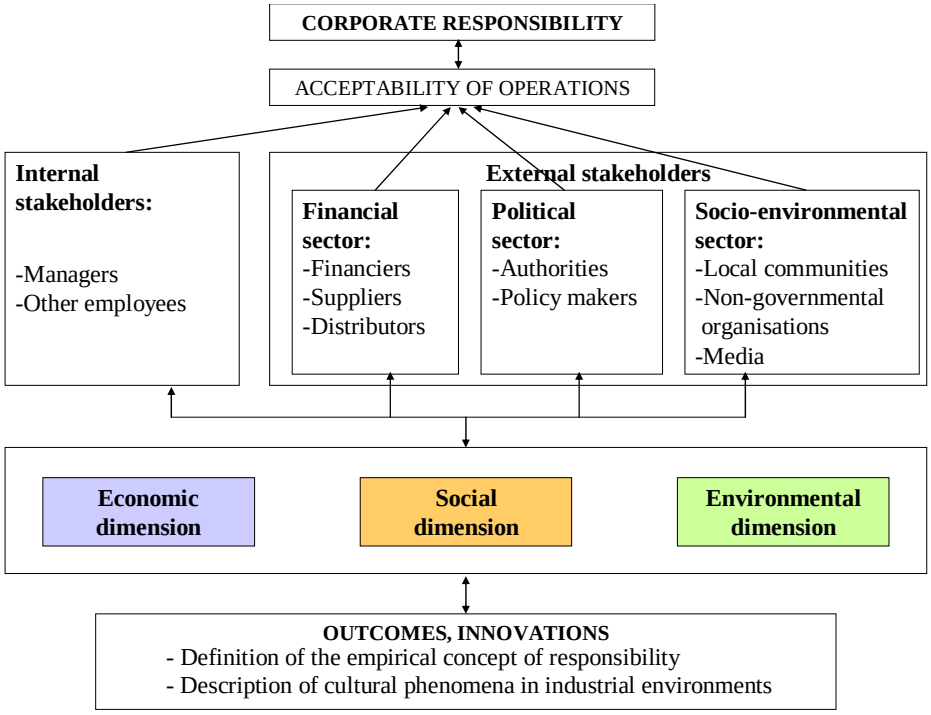

Figure 6. Acceptability of operations as an indicator of corporate responsibility.

4.2 Methodologies

4.2.1 The Analytic Hierarchy Process (AHP)

The quantitative analysis in Article II was based on Saaty's (1980) Analytic Hierarchy Process (AHP), which provides a way of quantifying subjective preferences expressed in expert judgements concerning entities or objects. Since its development in the 1970's, the AHP has become a widely known and used standard method for solving discrete multiple criteria problems (Korhonen and Wallenius 2001). AHP is applicable to a diverse range of practical and theoretical questions related to, for example, such matters as sustainable agriculture, fisheries, forest management and planning, wildlife management, measurement of consumer preferences, energy planning, resource allocation and business decision-making (Schmoldt et al. 2001a). In view of the diverse nature of these applications, AHP was perceived as a promising method for producing systematic information related to the quantitative and qualitative dimensions of acceptability and responsibility.

The principle of the basic form of AHP is described according to Pukkala (1994) in Annex 2, with a comparison of three acceptability criteria and examples of the calculation of priority coefficients for them. This description supports an understanding of that given below of the application used in this work. On the basis of the dimensions constructed in Article II and test interviews carried out in one case country, Finland, three main acceptability criteria were formulated for the quantitative study: financial-technical,

environmental and social. From four to seven sub-criteria were employed to clarify the content of the main criteria. Other dimensions were left in the construct, however, as it seemed that the previous work and test interviews could hardly provide appropriate local and regional aspects describing these issues, so that a qualitative analysis would be needed to cover these issues as profoundly as possible.

In the data gathering sessions, each stakeholder was asked to compare all the main criteria and all the sub-criteria of the given main criteria in terms of the acceptability of operations as presented in the questionnaire. Finally, the stakeholders compared the importance of various classes of stakeholder for the pulp and paper industry. The criteria were prioritised according to the AHP recommendation of Saaty (1977) that scores of 1/9, 1/8,…, 1/1, 2/1,…,8/1,9/1 should be used to elicit ratios descriptive of priorities in the pairwise comparisons between entities. Since the comparison was composed of five phases, the total number of pairwise comparisons in the AHP model used here was 87:

1. Comparison of the main criteria; 3 criteria, 3 comparisons
2. Financial-technical criterion; 4 subcriteria, 6 comparisons
3. Environmental criterion; 7 subcriteria, 21 comparisons
4. Social criterion; 7 subcriteria, 21 comparisons
5. Stakeholder comparison; 9 groups, 36 comparisons

The majority of the respondents were able to answer in their mother tongues, as the questionnaires were presented in Finnish, German and Portuguese in Finland, Germany and Portugal, respectively. Due to the limited resources, only the main criteria and sub-criteria were translated into Chinese and the Chinese interviewer employed the English questionnaire together with the Chinese criteria.

The AHP provides one option for prioritising various quantitative and qualitative issues according to the opinions of judges representing different levels of expertise, but the method lacks an appropriate theoretical background. In addition, it is only reasonable to take a limited number of criteria into one process, as the number of pairwise comparisons increases rapidly along with the number of criteria. Therefore, the method has been developed further by combining it with other analytical tools, e.g. linear optimisation, mathematical programming and regression techniques (Scmoldt et al. 2001b). The regression approach was chosen here.

The calculation method involves a quantification of all $I(I\text{-}1)/2$ pairwise comparisons between the I entities. The ratio scale is derived using an eigenvalue calculation based on a matrix formed from the quantified comparisons. Many authors have shown how regression techniques could be used to provide alternative estimates (for references, see Alho *et al.* 2001, p. 236). These two methods typically give similar numerical results, but if the comparisons are markedly inconsistent, the results may differ considerably (Saaty and Vargas 1984). One advantage of the regression approach is that it permits estimation of a relative scale based on fewer comparisons, the minimum being one less than the number of entities. In addition, the well-known statistical theory of regression is available (Alho et al. 1996, 2001, Alho and Kangas 1997, Kangas et al. 1998, Leskinen and Kangas 1998).

The basic calculations presented in Annex 2 were supplemented with the regression model when calculating the local weights for the acceptability criteria and their sub-criteria, and similarly the stakeholder weights, on the basis of the pairwise comparisons of the criteria and stakeholders, which were analysed using a recent Mathematica package, AHP.m, developed by Alho and Kolehmainen at the University of Joensuu, Finland.

Acceptability was explained in the regression model through three main criteria, the financial-technical, environmental and social acceptability of operations.

The regression model is summarised below on the basis of the detailed presentation by Alho et al. (2001). Let v_i be the value of an entity (main criterion in this application) i = 1,…, I and let $r(i,j,k)$ be the ratio v_i/v_j as perceived by judge k = 1,…,K. As all v_i are positive, it can be assumed without loss of generality that $v_i = \exp(\mu + \alpha_i)$, where μ is an intercept term. The theoretical values of v_i/v_j are thus $\exp(\mu + \alpha_i)$, where μ cancels out. Define $y(i,j,k) = \log[r(i,j,k)]$. The regression model for pairwise comparisons of data in the multiple judge case is of the loglinear form

$$r(i,j,k) = \alpha_i - \alpha_j + \varepsilon(i,j,k), \quad (1)$$

where the error term representing all types of inconsistencies has an expected value $E[\varepsilon(i,j,k)] = 0$. For identifiability, it is assumed that $\alpha_I = 0$, so that α_i measures the value of entity i relative to entity I.

The overall quality of the regressions, described by the degree of variance explained, R^2 (Alho et al. 2001, p. 248), tends to be reduced by the possible inconsistency of the experts' opinions. The error term in the models includes the effects of internal inconsistency on the part of each judge and of differences between the judges.

4.2.2 Qualitative analysis

The qualitative analysis in Article III was justified as a means of filling out the pre-defined acceptability dimensions in order to form a holistic understanding of the phenomenon. In the data gathering, I conducted thematic interviews (Eskola and Suoranta 1998) in the form of guided conversations according to the recommendations of Yin (2003). The difficulty experienced in formulating the interview protocol was to keep it general enough to fit the different circumstances of the four cases and the stakeholders' environment but still make it detailed enough to help the interviewer to formulate the questions.

The questions asked included both fact-finding and opinion questions on the company and branch of industry and technical, economic, environmental and social aspects related to them, in addition to a few conceptual questions. The question list, detailed in Annex 3, finally worked as a checklist, to ensure that all relevant topics were covered during the interviews, but individual questions were formulated or picked out from the list according to each interviewee's knowledge and expertise. Thus the interviewees spoke freely on the issues at hand. The questions were formulated separately for internal and external stakeholders, although the main topics were the same for both groups. The interviews lasted from 20 minutes to 2 hours, and the total time taken by a data gathering session, including data for the survey, varied from 1 to 3 hours.

The research procedure was composed of six phases, described as a "step by step" process in Figure 7. Many of the phases nevertheless overlapped to such a degree that the analysis was found to be a continuous iterative enterprise. I started the process by outlining the conceptual framework on the basis of the literature review and formulated interview questions that were expected to produce information on the topic concerned. The data gathering started with test interviews at the Finnish case mill, after which the question list was completed. The interviews were then continued and the early steps in the analysis began with the construction of contact summary sheets, according to advice of Miles and

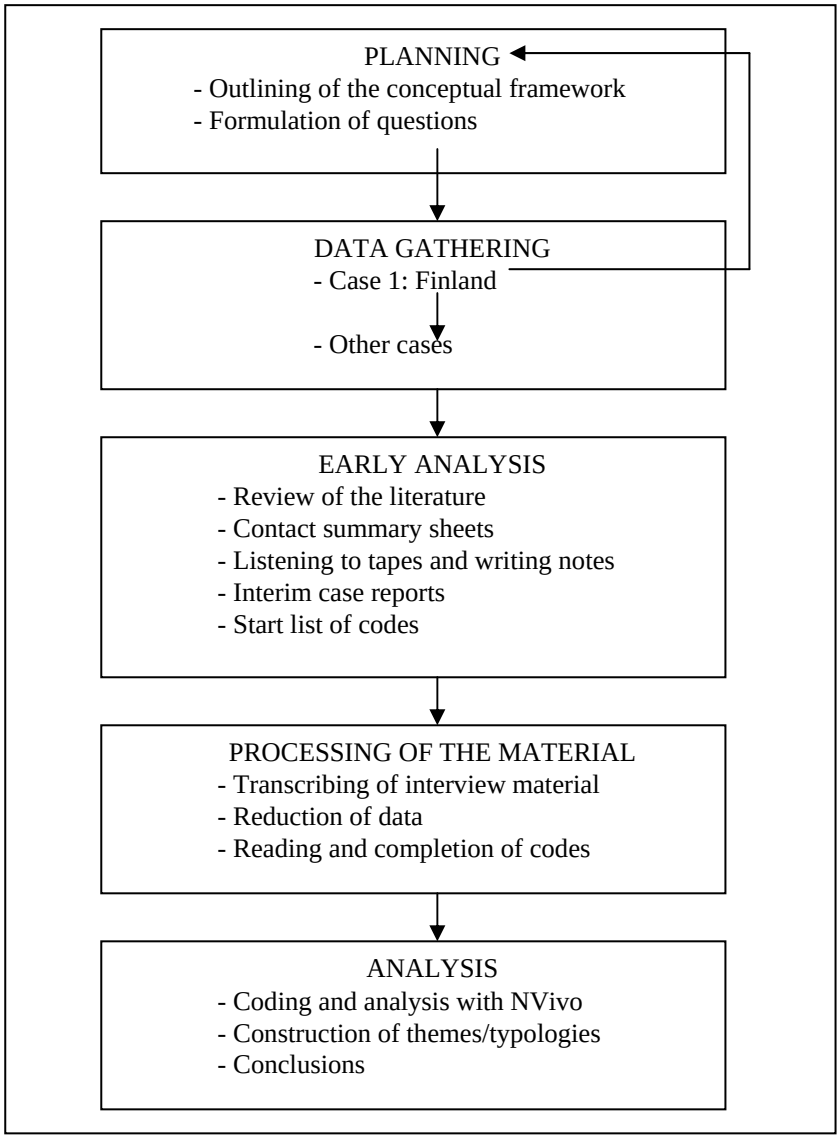

Figure 7. Procedure for qualitative analysis.

Huberman (1994). After the fieldwork, I listened through the tapes, writing notes on the most essential issues arising from the material. It was on the basis of these early ideas that I wrote the consultancy report for the company, which also served as an interim report for further in-depth analysis of the material.

The qualitative analysis was started with the organising of the interview data separately for each country for further processing. I analysed the qualitative data using the most recent software package devised for this purpose, QSR NVivo, a product of the Australian company QSR International. The program is useful for coding, searching and modelling

qualitative data (Luomanen and Räsänen 2002). I thus imported the transcribed interview material into NVivo and created a tentative code scheme on the basis of the acceptability criteria applied in the AHP analysis, and after which I completed the list when reading the interview material. I then coded the material by case countries according to the advice given by Alasuutari (1996) in order to cause as little distortion as possible in the coding. I hoped that in this way the issues would arise from the material itself rather than having to be forced into a predefined grid. The coding list is presented in Annex 4.

Next, I applied the counting procedure of the NVivo programme and let it produce the passages for each code case by case in order to obtain an idea of the cultural and national characteristics of the concept of acceptability on the one hand and the common characteristics on the other hand. After this, the stakeholders' understanding of acceptability within the pulp and paper industries and their opinions on the matter were studied in depth by reading their arguments related to the coded issues. Finally, themes defining the concept were extracted and combined into typologies in the subsequent analysis. Thus an interpretative explanation of the responsibility phenomenon was found through the acceptability concept on the basis of the clues produced and hints available.

4.2.3 Triangulation

Triangulation is a method used for confirming findings in qualitative research. It is supposed to support a finding by showing that its independent measures agree with it, or at least do not contradict it (Miles and Huberman 1994). Four types of triangulation can be identified: triangulation 1) by data sources, 2) by different researchers, 3) by methods, and 4) by theory, in other words by perspectives on the same data set (Miles and Huberman 2004, Yin 2003).

The major strength of case study data collection is the opportunity to use many different sources of evidence. I chose two methodologies, quantitative and qualitative, in order to pick out data sources that have different biases and different strengths, so that they could complement each other. The gathering of different types of data does not automatically lead to triangulation, however. As Yin (2003) explained, the researcher can 1) really triangulate the data, or 2) have multiple data sources but not actually address different facts. Triangulation means that the events or facts of the case study are supported by more than a single source of evidence. If multiple sources have been applied but the data not triangulated, each source of evidence will have been analysed separately and the conclusions reached on the basis of different analyses compared.

The separate quantitative and qualitative analysis presented the phenomenon of acceptability of operations from two perspectives, but this did not yet mean that the findings had been supported by evidence from two sources. A third triangulation analysis was necessary for this purpose. I employed triangulation types one and three, i.e. the triangulation of data sources and methods, in Article IV and in the synthesis of the results in this summary. The sources were composed of the qualitative and quantitative empirical data, documents produced by the case company and newspaper articles related to the research theme. The triangulation by reference to the various data sources related to the acceptability and responsibility dimensions and to the performance of the company was not a concretised, limited analysis but took place throughout the entire research period.

Methodological triangulation refers to comparison of the results of quantitative and qualitative analyses. The results could not be applied directly in the triangulation, as the acceptability and responsibility elements were not the same. The quantitative analysis

yielded three tentative acceptability criteria, financial-technical, environmental and social, while the experimental qualitative acceptability model was composed of eleven elements: technical, financial, economic, resource-based, environmental, social, societal, cultural, organisational, institutional and ethical. Comparison of the two models would have been very difficult without further processing of the qualitative model for a concept of empirical corporate responsibility having four major elements, economic, environmental, social and organisational responsibility, as in Article IV. After this, the similarities and contradictions between the two sets of data were identified and compared by dimensions and by stakeholder groups. In addition, the pre-set content of the quantitative acceptability criteria was mirrored against the content produced by the qualitative analysis in order to describe the phenomenon profoundly and increase the validity of the results.

4.3 Quality of the conclusions

The soundness of a qualitative study can be evaluated in terms of the reliability and validity of its observations. Reliability is defined as the extent to which the procedure yields the same result however and whenever it is carried out. Validity is the extent to which it gives credible, correct answers (Miles and Huberman 1994).

4.3.1 Reliability

Two steps were taken to maximise the reliability in the procedure: 1) implementation of the interviews, and 2) analysis of the data. The reliability of the data was based on saturation of the sample in the Finnish case. The key persons at the mills determined the most important stakeholders, and the sample was supplemented with persons that previous respondents had referred to during the interviews, so that the relevant financial, environmental, social and political stakeholders were included. The sample in the other cases was mainly defined before starting the interviews to cover the corresponding interest groups to those in Finland. The experiences from the Finnish case and the large sample improved the reliability in these cases. All the interviews were also taped and well documented in order to make it possible to return to significant or unclear issues later if necessary.

The interviewers, a Chinese expert and me, represented the case company at the time of data gathering, but our true status was made clear to all interviewees at the beginning of the session. Reliability was increased by interviewing all the sample stakeholders face to face. The respondents were also encouraged to express their personal opinions on the issues under discussion. The Chinese and Finnish respondents were confronted alone, but in the German and Portuguese cases a representative of the mill guided me to the places where the interviews with external stakeholders were to be held and was thus commonly present at many of the sessions. He/she did not participate in the interviews or try to influence them in Germany. In Portugal the representative of the mill provided me with occasional translation support, as my Portuguese is only modest. This ensured that the interview progressed logically. All the interviews were taped, however, and transcribed directly from each language, so that the occasional translation support did not affect the final material. Whether the representative of the mill was present or not did not systematic influence critical opinions – this seemed to relate more to the group that the interviewee represented.

The interview setting might even have had some positive impacts in some cases, as some interviewees stated that it is desirable for representatives of the company and mill to

asks what they really think and not only present the official agenda of the company. The atmosphere was confidential when interviewing the representatives of the case mills. Some interviewees perceived that I was one of them but without any position in the local context, and they thus felt free to speak on issues that bothered them or felt that they could even influence some issues by participating in the study.

The questions were formulated so as to be as clear and easy to answer as possible. The respondents answered in their mother tongue whenever possible, the Finnish and German ones doing this completely and the Portuguese ones partly in Portuguese and partly in English, while the Chinese case differed from the others, due to limitations on time and other resources, in that a Chinese person interviewed the stakeholders in Chinese and summarised the main findings in English. Five persons transcribed the tapes, because the job required good language skills.

The list of questions and the coding schemes used in the analysis are detailed in Annexes 3 and 4, respectively. Comprehensive analyses were ensured through the use of a computer with the qualitative data analysis program, NVivo. In addition, I aimed at transparent presentation of the analysis by adding several citations from the interviews, including code numbers, in Chapters 3 and 6. This facilitates the assessment of the interpretation of the data by another researcher. Finally, pre-reviewers reviewed Articles I, II, III assessing the quality of the processes adopted and conclusions reached.

4.3.2 Validity

Validity can be regarded as a process of checking, questioning and theorising, referring to both internal and external validity. Internal validity focuses on whether the process adopted is consistent and reasonably stable over time and between researchers and methods (Miles and Huberman 1994).

The opportunity to use many different sources of evidence is one of the major strengths of a case study (Yin 2003). In order to improve internal validity, both qualitative and quantitative data were gathered. The qualitative acceptability criteria were assessed quantitatively with AHP, and thus the validity requirement concerned both the qualitative and quantitative parts of this study. The tentative acceptability criteria and qualitative questions were constructed based on previous scientific studies and the theoretical foundations. Then both lists were tested and finalised during the test interviews in Finland. In addition, experts on Chinese and German forestry and the pulp and paper industry assessed the quality of the questions and the survey questionnaire before the gathering of data outside Finland started, in order to improve the validity in various operating environments. I did not expect the two kinds of data to be entirely congruent, but I checked during and after the interview sessions that there were no contradictions between the interview and survey material that would require additional explanations. If there were, I returned to the issue later.

Triangulation is sometimes suggested as a form of internal validation, as it supports a finding with independent measures (Miles and Huberman 1994). Triangulation was used here to produce an in-depth understanding of the problem and to demonstrate the validity of the findings through the multiple data and information gathered from cross-case studies and public sources. A chain of evidence was established during the research. After gathering the data, I continued observations on the company and the operating environments of the mills concerned through public sources such as scientific papers, news bulletins, newspaper articles and reports produced by the company, and also through the Internet. In addition, I

had official and unofficial discussions with other researchers and representatives of the case company which opened up new perspectives on the problem and undoubtedly influenced me subjectively as a researcher.

External validity assesses whether the conclusions have any greater import and can be generalised beyond the immediate case (Miles and Huberman 1994). Cross-case studies were employed here to produce in-depth information on the mills and their environments and to improve the generalisablity of the findings to the global pulp and paper industry. The majority of the external stakeholders interviewed considered themselves stakeholders in this branch of industry and not only representatives of the interest groups of the company or mill. Some of them can even be regarded as stakeholders in natural resource-based industries in general. Thus, some generalisation to other industries could be attempted, although with clear reference to the fact that the sample is likely to be inadequate for such a purpose. The documentation of environment and procedure nevertheless enables this research setting to be applied to other contexts.

5 REVIEW OF THE RESULTS

This work was implemented in five phases, which resulted in five separate articles. These are presented in chronological order below, so that Article I positions the concept of acceptability in the framework of responsibility and business ethics, Articles II, III and IV deal with the actual methodological aspects, and finally Article V evaluates and discusses the points that have arisen from empirical work.

5.1 Acceptability of operations as an indicator of corporate social performance (I)

Article I presents a model in which the acceptability of operations is proposed as an indicator of corporate social performance. Such a model was considered necessary for both theoretical and practical reasons. First, the theoretical studies provided few examples of definitions of the comprehensive concept of corporate social performance from a practical perspective, and secondly, globalising corporations are facing a number of new economic, environmental and social challenges related to their new operating environments and cultures.

The connection between corporate social performance and stakeholder theory provided the basis for the proposal put forward here. The building of the model was started by defining the acceptability dimensions. For this purpose the operating environment of a company was divided into the global business environment and operating environment. The global business environment refers to the entire operating environment of a global company in which it is called upon to meet its social responsibilities. Corporate social performance is described in the global business environment in terms of business, legal and ethical behaviour. The operating environment refers to the environment in which a production unit works and in which the corporation interacts in a concrete manner with various stakeholder groups at the local, national and international levels. These operations are divided into elements covering technical, financial-economic, environmental, socio-cultural and political issues in order to concretise the content of their acceptability.

The structure of the model came to resemble the "decision hierarchy" developed in the analytic hierarchy process (AHP) of Saaty (1980). The general objective of the model at the highest hierarchical level is to ensure internationally acceptable operations, while at the second level, the stakeholders assess the importance of the acceptability dimensions, and at the next level below this the dimensions related to the operations are described, i.e. the technical, financial-economic, environmental, social, cultural and political dimensions. The objectives which specify each acceptability dimension form the fourth level in the hierarchy.

The categorisation of stakeholders employed in this model is a modification of the division into internal and external stakeholders proposed by Freeman (1984) and the trisection of society into market, governmental and civic sectors put forward by Korten (1995). The categorisation was therefore modified to allow all the groups which most probably play according to the rules of the company, i.e. the management and personnel, to be regarded as internal stakeholders, while the external stakeholders were divided into the market sector, including clients, shareholders and suppliers, the governmental sector, referring to the authorities and political decision-makers, and the civic sector, covering other groups interacting with the company, such as local communities, private individuals, representational and voluntary organisations and the media.

The major contribution of this paper is to concretise the content of corporate social performance in practical business by means of an indicator, the acceptability of operations.

5.2 Multi-attribute assessment of the acceptability of operations (II)

Article II tested the acceptability of operations as an indicator of corporate social performance in the pulp and paper industry, applying the analytic hierarchy process (AHP) based on Saaty's (1980) hierarchical decision-making process. The stakeholders of the case company, classified into internal and external ones, with the external group further divided into financial, political, environmental and social sub-groups, were allowed to determine the priorities among the acceptability criteria by means of pairwise comparisons. The data were analysed using regression techniques and the results were compared cross-culturally and intra-culturally.

The major result was that there was no deep disagreement on the priority of the various acceptability criteria between the Chinese stakeholder groups. They regarded environmental issues as the most important, but understood these in terms of diversity and beauty in nature. In addition, they preferred technical competitiveness and a good reputation to financial profitability indicators when assessing the financial-technical sub-criteria. The respondents appreciated health and safety at work, earned incomes, job satisfaction and communication as relevant social criteria.

The majority of the Finnish respondents ranked the financial-technical criterion as the most important, emphasising a good reputation as a crucial sub-criterion. The internal stakeholders and the majority of the external ones regarded renewability of raw material supplies and sustainability in their production as the most essential environmental issues, whereas the environmental stakeholders emphasised the importance of biological diversity. The respondents ranked job satisfaction, health and safety at work and permanence of employment among the most important social issues.

The German respondents generally considered the financial-technical criterion to be the most important, except for the environmental stakeholders, who took the environmental

criterion to be the most essential one. The respondents regarded long-term profit and technical competitiveness as the most important financial-technical issues. Recycling was deemed one of the most important elements within the environmental criterion. The environmental and social stakeholders were the only groups who perceived the minimisation of emissions and effluents as being important. Health and safety at work, earned incomes and permanence of employment were considered the most essential social sub-criteria.

All the Portuguese stakeholders regarded financial-technical issues as the most important main criteria, ranking long-term profit and technical competitiveness among the most important sub-criteria. The most important environmental sub-criteria were sustainability and renewability of the raw material supply. All the stakeholders appreciated job satisfaction and health and safety at work among the social sub-criteria.

There was more variation between the European internal and external stakeholders than between the Chinese groups. The cross-cultural comparison highlighted the importance of financial-technical issues in industrial production for many of the European groups, whereas the Chinese interviewees emphasised the environmental issue. The European respondents regarded short and long-term profit and technical competitiveness as the most essential financial-technical issues, whereas the Chinese respondents emphasised technical competitiveness and reputation. The assessment of the environmental sub-criteria led to more dispersion in the results than that of the financial-technical ones. The Chinese respondents generally appreciated diversity and beauty in the landscape and the minimisation of effluents and emissions, while the European respondents put more emphasis on other sub-criteria. Regardless of the cultural background, the stakeholders' opinions were the most congruent when assessing the social sub-criterion. Health and safety, and sub-criteria related to the social security, were perceived as the most essential dimensions.

Despite the common elements identified, the present findings indicated that the concept of the acceptability of operations varies from place to place. It was obvious that the national and company cultures influenced the elements that were emphasised at a particular time, although not all the background factors could be studied statistically in the present context.

5.3 Observing corporate social performance (III)

Article III aimed at providing empirical content for the theoretical concept of "acceptability of operations" as an indicator of corporate social performance through a qualitative field study. The same representatives of the stakeholders were interviewed for this as participated in the gathering of the quantitative data.

The qualitative analyses resulted in some variation in corporate social performance with place and time. The Finnish results in particular indicated a change and development in the concept of acceptability with time. The discussion and criticism surrounding the industry had shifted in focus from the pollution impacts of the process in the 1980's through natural resource issues such as sustainable production and the origin of the roundwood in the 1990's to the social responsibilities of an expanding and globalising industry nowadays. The acceptability of operations at the national level emerged from the Portuguese case. The respondents spoke at length on their national pulp and paper industry rather than the case company, obviously because the case mill was similar in appearance to the other mills in the area. The German case resulted in a two-level concept of acceptability, local and global.

The new, modern plant and technology available by comparison with German mills in the same area was regarded as a guarantee of acceptable operations, and thus of the company's social performance at the local level, while sustainable management of natural resources and social responsibility were regarded as the major acceptability elements indicating the social performance of the company at the global level. The Chinese case illustrated well the challenge of global acceptability and congruent social performance for a globally operating company. The results showed that the company's targets and policies were considered essential at the mill, but the understanding of the concepts and content might differ from that existing at headquarters.

An experimental acceptability model was formulated on the basis of summaries for the individual countries. Eleven dimensions should be taken into consideration when assessing the acceptability of operations of a business enterprise, covering technical, financial, economic, natural resource, environmental, social, societal, cultural, organisational, institutional and ethical issues.

It was concluded that the importance of the mill for the local economy and that of the whole sector for the national economy, the level of social participation and the cultural role of the sector in society influenced the extent of the concept of acceptability. This approach based on stakeholders' judgements provided a diverse basis for the model of acceptability, highlighting well the topics of the public debate in society and its connection with corporate social performance. The issues discussed or criticised are reflected in the behaviour or social performance of the company concerned, but with a certain delay or time-lag.

The findings indicated that the acceptability of operations will serve well as an indicator of corporate social performance. Acceptable operations must not only be legal but they must be ethical as well. The social performance of a company must be morally and ethically justifiable. Global business enterprises should define an ethical framework or code in order to operate ethically and logically in diverse operating environments.

5.4 Corporate responsibility in various cultural settings (IV)

The purpose of Article IV was to define the empirical content of corporate responsibility by comparing the results of quantitative and qualitative analyses. Tentative technical-financial, social and environmental acceptability criteria were used in the quantitative analysis. The qualitative analysis produced an experimental acceptability model covering technical, financial, economic, natural resource, environmental, social, societal, cultural, organisational, institutional and ethical issues. The results were developed further as a proposal for a concept of empirical corporate responsibility having four major elements, economic, environmental, social and organisational responsibility, in order to clarify the comparative analysis here and improve the practical applicability of the model in general.

The results showed the relevance of the application of two methodologies to this kind of problem, as many issues would probably not have been found if only one method had been applied. In the Chinese case, the results of the quantitative analysis were reliable but the comparison resulted in some inconsistencies in the stakeholders' opinions. All stakeholders considered the environmental criteria to be the most important element in the company's industrial operations in the quantitative analysis, and financial-technical criteria mostly occupied second place. The qualitative analysis resulted in the prioritisation of economic responsibility by the internal and financial stakeholders and of social responsibility by the political and social stakeholders. The internal and social stakeholders gave second place to

environmental responsibility, but the financial and political stakeholders did not consider this to be an element of corporate responsibility.

The Finnish internal stakeholders emphasised the role of economic issues with both methodologies. The qualitative analysis brought out the importance of organisational issues, which were not taken into account in the quantitative criteria. The external stakeholders generally ranked the environmental criteria as very important, but they emphasised social issues in the interviews. They also considered communication and national legislation to be more important elements of corporate responsibility than the widely discussed and emphasised environmental issue.

The majority of the German respondents considered the financial-technical criterion the most important. The internal stakeholders' opinions were highly congruent in the quantitative and qualitative analysis. The only difference was the emphasis on organisational responsibility in the qualitative analysis. The comparison of the financial and environmental stakeholders' opinions also resulted in a relatively logical order. The political and social stakeholders emphasised social responsibility in the qualitative analysis ahead of environmental responsibility.

The comparative analysis of the Portuguese case resulted in almost identical preferences among the internal, financial and social stakeholders. The political stakeholders emphasised social responsibility rather than economic issues in the interviews, while the environmental interviewees referred only to corporate environmental and social responsibility.

The results indicated that global corporate responsibility is not merely the sum of local issues arising in the various places of operation, as some responsibility elements are formed directly at the global level. Comparison of the qualitative and quantitative results emphasised that, although it is difficult to formulate a set of criteria which are simultaneously general, flexible and detailed enough for the purposes of a globally operating company, it is extremely important to define the concept in order to guarantee efficient allocation of resources both in companies and in society at large.

5.5 Critical questions about corporate social responsibility and performance (V)

Article V presents certain gaps, questions and challenges in the research and in the practical application of corporate social performance and responsibility which emerged from the empirical project and recent observations on the case company. The paper discusses the relevant questions but offers no final answers to them, as no such answers exist. The questions are listed below.

How should a global research problem be approached?

- How can applicable methods and logical questions be found?
- Is stakeholder analysis an adequate basis for assessing corporate social responsibility and performance?
- What methodological approach is applicable to global research?

What is practical corporate social responsibility and performance like?

- Does the corporation culture equalise opinions? If so, does it matter?
- How can the operations of partners be followed reliably?
- Should business enterprises participate in politics?
- How should corporate social responsibility be applied?

Can corporate social responsibility and business ethics vary from place to place?

Each question could be a theme for further study. This concretised the importance of empirical research into this phenomenon, which is current and relevant for industries. The content of corporate social responsibility and performance is not always clear among scholars, but it is especially important to try to clarify it in the context of daily business in order to support the development of ethical business practices and guarantee the efficient allocation of resources both in companies and in society at large.

6 DISCUSSION

This chapter summarises the findings and evaluates the research process. The first part is a synthesis of the five articles, answering the questions posed in Chapter 2.4, and the second, evaluative part brings out the challenges of cross-methodological, cross-scientific and cross-cultural work. The applicability of the theoretical and methodological approaches chosen here to research into this kind of problem is also assessed. Finally, some theoretical and practical implications are drawn on the basis of the synthesis and discussion, and ideas are put forward for future research.

6.1 What is the relationship between responsibility and acceptability of operations?

The purpose of this work was to describe the development of responsibility issues within the case company and to compare this with the understanding of its external and internal stakeholders on responsibility issues through the concept of acceptability of operations. Answers to the four initial questions detailed in Chapter 2.4 are given below in order to explain this phenomenon empirically.

6.1.1 What is acceptability and what kinds of industrial operations are acceptable?

The results showed that the acceptability of operations is a social value that expresses a person's or group's expectations. I assumed that the interviews with a large sample of stakeholders would provide new, critical features for the acceptability of operations, but in practice the interviewees, except for the representatives of some non-governmental organisations, perceived the acceptability of the case mills as being relatively good. Otherwise the interview material presented a number of definitions for the acceptability of operations. The dominant regional characteristics are summarised in Figure 8.

The Chinese case illustrated well the challenge of global acceptability. The results showed that the employees were loyal to the company's targets and policies, but their understanding of the concepts might differ from that existing at headquarters. In addition, the distribution of welfare was regarded as the duty of a large company:

Question: What kind of production and operations can be regarded as acceptable?
"(#73) Acceptable production and operations benefit the environment, people and society." (Policy decision maker, Environment Department, City of Suzhou, Annex 1, China).

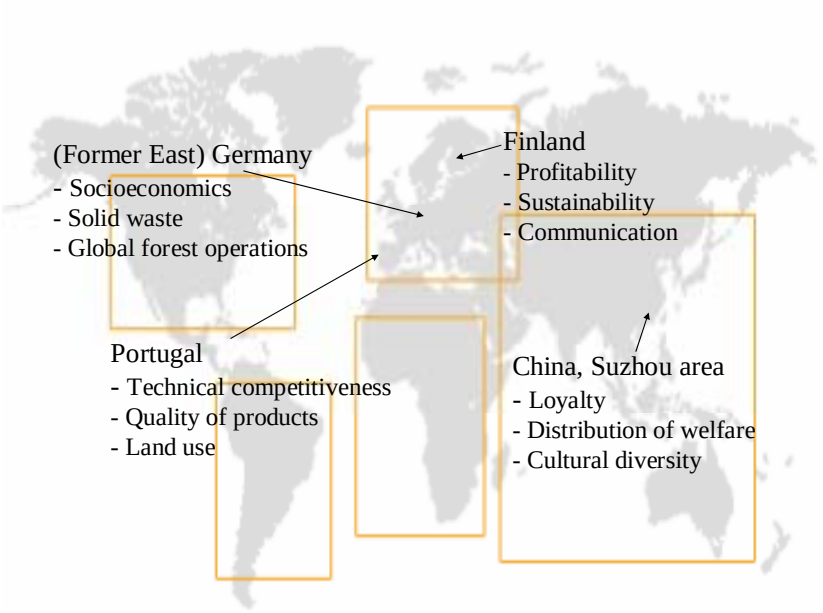

Figure 8. The main elements of regional acceptability in Stora Enso.

The economic, environmental and social debate in Finland in the 1990's was reflected in the acceptability characteristics. Business management trends associated with quartile-thinking and shareholder value spread through Finnish business, raising profitability as an acceptability element, while the simultaneous environmental debate on sustainable natural resource management and the conservation of biological diversity in commercial forest areas brought out the sustainability dimension. The communication element was a consequence of the poor communication skills that existed at the time when the extensive international criticism of the industry began in the early 1990's.

The German case produced a three-level model of local, national and global acceptability of operations. Socioeconomic issues were emphasised at the local level in the region of the former East-Germany, the solid waste problem was crucial at the national level, and finally, German stakeholders were worried about the nature of global-level forest operations and their effects on the global environment.

Technological issues dominated over financial ones when it came to the Portuguese concept of acceptability. The quality of products was generally considered an essential issue in industrial production, and the questions concerning land use that had originated from the environmental discussion at the time of the extensive establishment of eucalyptus plantations in the 1980's were still current, as many small holders had recently shifted or were planning to shift from agricultural production to the more productive cultivation of eucalyptus trees.

It can be concluded from these four substantially different cases that responsibility through the concept of acceptability is a local and regional phenomenon based on the local and regional value base.

6.1.2 How does the concept of acceptability relate to the concept of corporate responsibility?

One crucial observation was that, although the general acceptability of operations was relatively high in all cases covering issues related to the company's current performance, and also on issues of wider social responsibility, the higher the acceptability was, the more important was the economic and socioeconomic role of the production unit in society. Other important issues influencing the acceptability of operations were the level of social participation and the cultural role of the sector in society. The role of these issues in the individual cases was discussed in Article III. The background factors influencing the acceptability of operations brought out the major limitation of this concept in the stakeholder context. The acceptability of operations describes the current situation, and if the situation is thought to be good enough, this approach produces relatively little information on potential future challenges. On the other hand, the acceptability elements covered issues beyond the traditional dimensions of corporate social responsibility.

The first observation justified a responsibility requirement for a global company in societies in which there is little public criticism. The second issue demonstrated that the traditional concepts of corporate social responsibility, or corporate responsibility, are not adequate when dealing with the operations of a global company. Thus the acceptability of operations indicated comprehensive corporate responsibility.

It can be concluded on the basis of the empirical analysis that the acceptability of operations reflects stakeholders' opinions on and understanding of corporate responsibility in a certain place at a certain time. The regional findings were generalised into a holistic corporate responsibility model based on the present large body of empirical material (Figure 9).

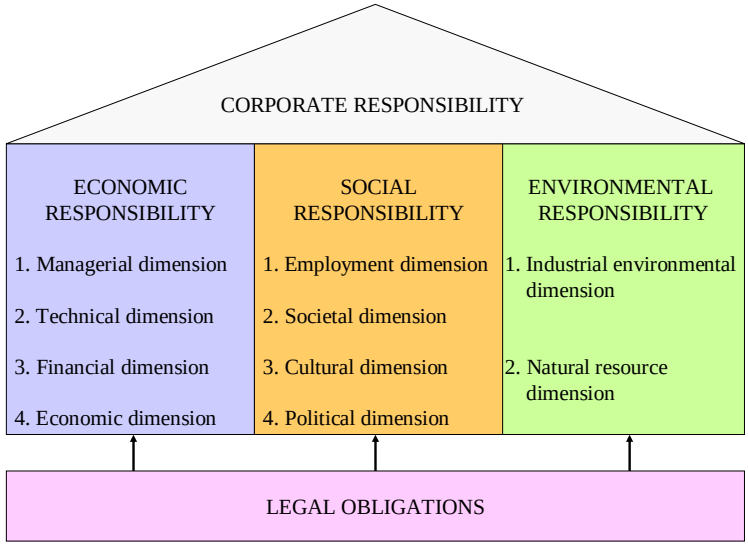

Figure 9. An acceptability-based holistic responsibility model for a company.

Legal obligations have been classified traditionally as an element of corporate social responsibility. They do indeed set the minimum level of acceptable operations, but they are a duty, not a responsibility. A broader concept of responsibility is needed, because local legislation is often inadequate in various operating environments. Corporate responsibility, including economic, social and environmental responsibilities, refers to both the organisational and societal, or internal and external, responsibilities of a company. For example, the organisational or internal part of economic responsibility includes managerial, technical and financial dimensions, while the economic dimensions refers to the economic impacts of the company and thus to societal or external responsibility. The employment and cultural dimensions are both organisational and societal questions, but the remaining dimensions of social responsibility refer mainly to the relationships of the company with the surrounding society. Similarly, both dimensions of environmental responsibility include both internal and external elements. The content of the dimensions is specified in Articles III and IV.

6.1.3 How important are various responsibility elements for the industry and its stakeholders?

Economic issues predominate in decision-making in so far as economic growth is the main target of the companies and societies. The quantitative analysis showed that Stora Enso's employees, like many other stakeholder groups in Europe, agreed with this (Figure 10). However, the responsibility elements expressed in the company's corporate responsibility model should be in balance, and thus should be taken into consideration equally in decision-making (Figure 3). Detailed acceptability hierarchies for given stakeholder groups are presented in Article II.

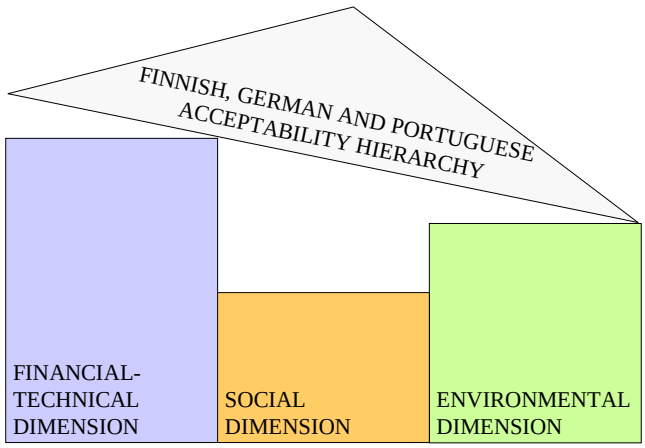

Figure 10. The acceptability hierarchy of Stora Enso's employees, European cases.

6.1.4 What are the major challenges in responsible operations?

Lehtinen (2004) estimated that it is difficult to say to what degree the main forest actors are actually exporting the knowledge cultures of their "homelands" and to what degree they are adopting the rules of the target areas. This phenomenon was not a focus of the present work, but the interview material provided an impression of the process by which the lessons learned had been exported from the home country and applied to operations in the host countries during the first decades of international operations, up to the 1990's. The expansion and globalisation of the company from the 1990's onwards then led to a situation in which the existing challenges in the home country, such as the questions of sustainable forest management, still existed, but the number and diversity of the challenges to its responsibility increased elsewhere. Thus existing operative models and principles could not be exported, but instead the issues had to be solved with new approaches applicable to the place in question.

An additional code #1 "challenges" (Annex 4) was given to the acceptability elements (Article III) during the NVivo analysis in order to identify the major challenges related to responsibility issues. The major challenges to the responsibility of a globally operating company are summarised in Figure 11.

Many responsibility questions become acute in certain societies due to the inadequacy of the legal obligations. Two major problems force companies to take moral issues into consideration in their decision-making: 1) local laws are not obeyed, or 2) they are not adequate to guarantee responsible operations. These deficiencies are commonly reflected in the basic goal of the business: the efficient allocation of resources. This is not only a challenge to economic responsibility but also a social and environmental question in as far as it concerns the ability and working capacity of employees and eco-efficiency. In

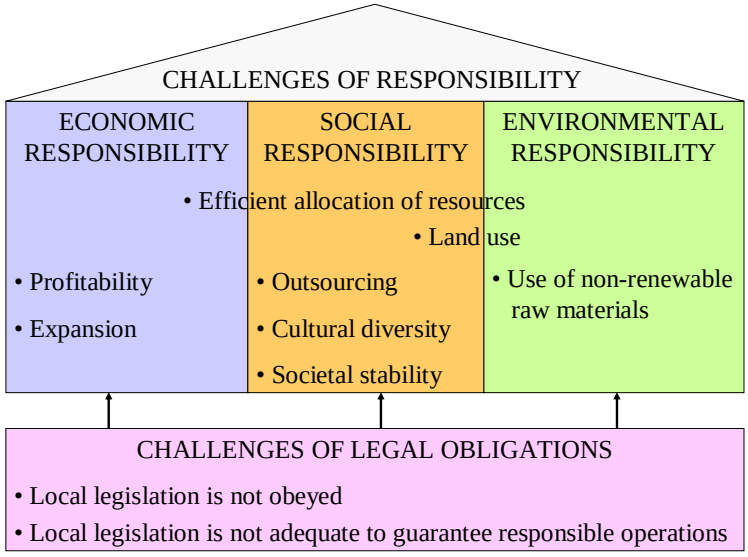

Figure 11. Challenges to corporate responsibility.

addition, it can be considered in the societal context as a question of shared responsibility between society and the company. In other words, what is the responsibility of society and what is that of the company when offering social services to citizens in various societies? The activities which support the core operations and operating environment are responsible enough in societies where the public sector guarantees the basic needs of the citizens, but welfare projects can be justified and necessary in a society where the government's responsibility is less clearly defined.

Financial profitability and competitiveness is one of the major current challenges from the managerial perspective. The company will be more sustainable in the long term if its operations are profitable and shareholder value high. Another crucial economic challenge is the successful management of expansion.

(#1, #17, #18)) Companies grow. A small unit becomes a take-over target if the share price is low. I don't believe that the owners would refuse to sell if someone offered a 50% higher price, for example (Senior Vice President, Corporation Strategy and Investments, Annex 1, Finland).

Expansion has its social impacts, too, as ethical questions and the application of local or global moral concepts becomes a more and more difficult matter. In addition, expansion can drive a company into politically and socially troubled areas, where the adjustment of responsible operations to an unstable political or social situation may even give an impression of irresponsibility from the perspective of the home country, for example. Societal instability is also a managerial challenge, causing indirect costs to the company, as it needs to take into account the influence of such questions as an unstable government on its operations. This means, for example, that logistic back-up systems are required in order to guarantee a continuous flow of raw materials to the mills, as shutting a mill down is even more expensive than the establishment of several back-up systems. Conversely, the company can enjoy indirect cost savings when operating under politically and socially stable conditions. The relative value of this "easy production" will increase in the future, as the company must inevitably expand more and more into less stable areas if it wants to retain its position among the world's largest pulp and paper producers.

Outsourcing is a major social challenge that exerts an influence at the local level. The company responsibility is measured in terms of how it can arrange and provide alternatives for the employees who are affected by these procedures. This is not only an employment question inside the company, however, but increases the number of suppliers and other contractors, which on the one hand increases the responsibility and on the other hand increases the cultural diversity of the operating environment, which may cause contradictory messages between the company and its stakeholders.

"(#30, #66, #76) Our cultural background describes how we react to various things. It's a bit complicated to communicate with them (representatives of the company) *when and if our nationality influences our way of presenting things, whether we represent the corporate position, the national position or the cultural position." (General Director, CELPA, Annex 1, Portugal).*

The third social problem concerns indeterminate land use and tenure rights in many geographical areas. Land use questions influence the local people's living conditions, but these questions have their environmental consequences, too. Many environmental questions

in the world, such as biological diversity, the sustainable use of natural resources and the establishment of a plantation or a mill, culminate in decisions on land use and tenure.

The problems attached to the use of non-renewable natural resources are related to the often repeated justification of the pulp and paper industry, that its operations are acceptable as it processes renewable natural resources. The use of non-renewable materials is nevertheless increasing in the form of increased use of coating materials used for producing fine papers and liquid packing boards, and the increased transportation of wood, recovered paper and pulp from one continent to another:

"(#15, #50) Of course the recycling of paper is desirable. What we object to is this "recovery paper tourism", in which the paper is transported across the world, exported and imported over long distances and with high energy consumption." (Officer, Landesverband Sachsen, Annex 1, Germany).

6.2 Evaluation of the research

Although the applicability of the theories, methodologies and approaches chosen here is discussed in depth in Article V, there is good reason to highlight a few issues here that have crucially influenced on the findings of the work.

6.2.1 Research setting

The research setting, including formulation of the questions and the arrangements during the interview sessions, together with the general approach, no doubt influenced the nature of the resulting material. The interviewers represented the case company at the time of data acquisition, and this arrangement may also have influenced the respondents' attitudes and answers, in that it would have been difficult to observe any existing or potential tensions between the company and its stakeholders. A basically open atmosphere nevertheless prevailed in the interview sessions.

In addition, my cultural background as a female Finnish private forest owner with ten years' professional experience as a forester and forestry consultant before undertaking this project must have had an impact on the interpretation of the interview material. On one hand, I have learned by experience that the commercial use of forests and natural resources with simultaneous consideration for ecological and social issues is possible. On the other hand, my personal and professional experiences in less developed countries have taught me that there is no single model of economic, environmental or social well-being, but a number of alternatives that can be optimal in different cultures. This background was no doubt reflected in my desire to look for a consensus between the global industry and local level well-being in order to find proposals for the development of responsible business rather than merely to criticise the industry, although I tried to make observations and approach the problem as objectively as possible. In addition, my position as an employee of the case company at the time of data gathering created a situation in which I was an internal observer when interviewing the employees of the company but an external interviewer with no reference to the group that the interviewee represented when working with representatives of other groups. The background factors were evident, but their total influence on the results can hardly be estimated in a concrete manner. Qualitative research is always subjective and value-bound, whether it is implemented in one's home culture or

organisationally or geographically in a new environment. Thus the cultural and other challenges can scarcely be said to detract from the value of the results.

As the case company has been regarded as an international enterprise since the late 1990's, a cross-case study seemed a suitable approach, and thus the emergence of responsibility was studied through four case mills. These were established systems at the local level, interacting relatively well with the surrounding societies, although some of them had been criticised extensively in the past. The stakeholders expressed little criticism of the mills during the fieldwork, however, but rather were inclined to assess the global operations of the company critically. Obviously due to the economic and socioeconomic importance of the company, the majority of the stakeholders seldom questioned the acceptability of operations of the local production unit, whereas the more distant the company or one of its units was for the stakeholders, the easier it was to assess its operations critically. Thus global operations are easier to criticise than local ones, as this criticism has no direct negative consequences for the stakeholders' well-being.

Civil participation has become globalised as a consequence of the changed values in societies and developments in communications technology. This means that global responsibility is not only the sum of local issues in the various places of operation, but some elements of responsibility arise directly at the global level. It can be concluded that the case approach provides a profound understanding of the local-level responsibility dimensions but additional observations are required in order to cover the diversity of global-level responsibility.

6.2.2 The stakeholder approach

Although the selection of stakeholder theory as the main theoretical foundation had its rational basis, as presented in Chapter 2, the observations on the company in various operating environments also influenced my decisions taken. This approach served well to bring out the diversity of the subject through the various stakeholders' opinions. It can be concluded that the empiria provided good guidance and support for my theoretical understanding of the subject.

Regardless of the applicability of the theory and approach in this case, four doubts emerged from the study and from recent observations: 1) the problem of identifying all relevant stakeholders, 2) the influence of the communication culture and forum on confidential communication between the business sector and its stakeholders, 3) the role of the enterprise in conflict situations between its stakeholders, and 4) the risk of a transfer of the responsibility in moral questions from the enterprise to its stakeholders.

Rytteri (2002) concluded that Stora Enso is not only guided by an ownership-driven ideology, stressing strictly economic goals, but also by a stakeholder-driven ideology in which the company's goals are economic but viewpoints and moral sentiments expressed by stakeholders are also taken into account. However, the above doubts may be said to have led to the current situation in which the company's stakeholder ideology means in practice stakeholder dialogue (Stora Enso 2005), i.e. communication with the stakeholders, which can be employed to forecast potential future conflicts. Communication is used as a means of supporting the decisions made by the company, with no intention of giving any participatory option or role in these decisions. It is for this reason that the representatives of critical stakeholder groups perceived open dialogues of this kind as frustrating, because from their perspective, such a process leads nowhere. This explains why these groups choose direct action against the company rather than democratic discussion.

The above process shows the challenge of the stakeholder approach and concept of acceptability as a value-bound issue in time and place. Freedom of speech is a basic right of citizens in a democracy, but demonstrations are based commonly on a limited environmental or social question. The total long-term impacts, whether positive or negative, of the presence of a business enterprise on an environment or society are seldom taken into consideration and assessed in these events.

One advantage of the stakeholder approach emerged from the real opinions of stakeholders. It seems to be a common belief that corporate responsibility entails increasing responsibility for matters other than business issues. This study showed, however, that the expectations of many stakeholders are reasonable. They do not expect the company to take care of a wide range of social services, but they do understand responsibility as a wider and deeper concept inside the company, referring to management of expansion including cross-cultural issues, responsible management of work, combining various management cultures and trustful internal communication, for example.

6.2.3 Western-based concepts in an Asian culture

The comparative analysis produced only a few minor contradictions in stakeholders' opinions between Finland, Germany and Portugal, indicating that the respondents were familiar with the concepts used. The comparative analysis of the Chinese case, on the other hand, produced a totally different picture of the applicability of the concepts, as the quantitative analysis resulted in the prioritisation of environmental issues over financial-technical and social criteria (Chinese AHP acceptability hierarchy, Figure 12). The Chinese results had the highest proportion of variance explained (Article II). In other words, the respondents were very logical when assessing the importance of various acceptability criteria and external stakeholders.

The comparison between the quantitative and qualitative analyses resulted in some inconsistencies in opinions. The qualitative analysis produced no exact priority function or acceptability hierarchy, but the interview material did create the impression that the Chinese respondents appreciated financial-technical and social issues in industrial production, while they hardly mentioned environmental issues at all in the open interviews (Chinese qualitative responsibility hierarchy, Figure 12). A comparison between the

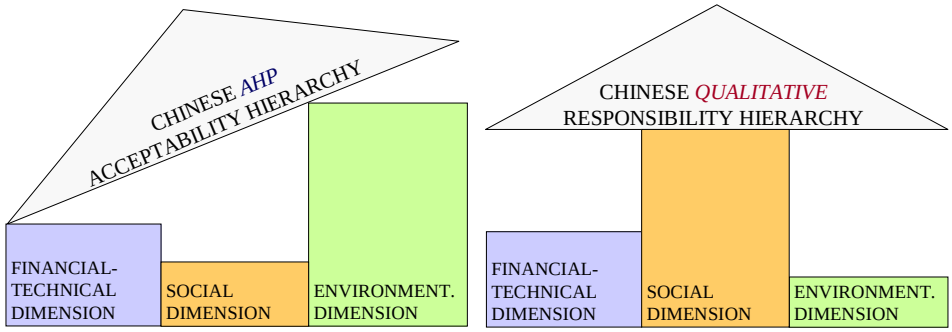

Figure 12. Priorities of the Chinese stakeholders.

interviews and the case description in Chapter 3.2.2.2 provides three potential reasons for the differences. Firstly, the emphasis on environmental policies and strategies coming from headquarters might have influenced the Chinese employees' opinions and have thus been reflected in the quantitative results. Secondly, the Chinese political situation and history could explain the emphasis on socioeconomic and social issues in the qualitative analysis. In addition, the politeness of the Chinese character might have led to a situation in which the respondent was aiming to answer the questions according to presumed expectations of the interviewer. There are no doubt more organisational, societal, cultural and political issues lying behind this phenomenon, but the definition of such background factors would require an additional, profound analysis of Chinese society. It can nevertheless be concluded on the present basis that the applicability of western concepts and methodologies is far from self-evident in either a business or research context when a totally different culture is involved.

6.3 Implications

The concept of responsibility is still a blurred one among both companies and researchers. The practical concepts reflect well the speed of the change in terminology, in that the concept "acceptability of operations" was applied when describing social responsibility and related issues in Stora Enso in the late 1990's, but five years later the industry was reporting on its corporate responsibility. Nowadays the accent in Stora Enso is turning towards sustainability.

The above process was well reflected in the concepts applied in the separate articles making up this thesis, as the concept developed as the work progressed. At the beginning of the project corporate social performance seemed to be the best term, as both that and acceptability of operations referred to what had been or would be done. The more I became familiar with the phenomenon, however, the more I became convinced of the inadequacy of terms such as corporate social performance and responsibility for covering the decisions, management and operating environment of a global company.

These processes showed how concepts come and go according to trends. The focus in the development of responsible business, however, should be on the content of business operations rather than on the use of new, fashionable terminologies. We will consider below how responsible business can be based on the comprehensive stakeholder approach and what its advantages may be for practitioners.

6.3.1 Theoretical and conceptual findings

The stakeholder theory provided a basis on which this work could consider various dimensions of corporate responsibility through the concept of acceptability of operations at the grass-roots level. The inadequateness of the traditional stakeholder map (Figure 2) became clear during the work, however. The traditional form oversimplifies the relationships between the company and its stakeholders, and also those relationships between stakeholders that indirectly affect the company. All these relationships contribute to outlining a network of stakeholders in the real business context that includes various direct and indirect relationships. The traditional stakeholder map is applicable when studying the direct relationship between a business enterprise and its stakeholders, but a

stakeholder network approach of some kind is preferable if the research is focused on an empirical phenomenon.

This study resulted in a holistic corporate responsibility model that diverges from earlier definitions of corporate (social) responsibility in that the responsibility of a company, both internal and external, or organisational and societal, was included in the same model. Internal responsibility refers mainly to issues related to good corporate governance, while external responsibility covers issues traditionally put under corporate responsibility.

Traditional definitions and models of corporate responsibility refer to the relationship between society and companies with respect to economic, social and environmental issues. The acceptability concept clearly indicated, however, that the economic element of responsibility also includes managerial and other organisational elements, referring to the internal functions of the company. This was highlighted in Article IV by presenting the element of organisational responsibility, although this could be focused on economic and social dimensions as a consequence of the responsibility targets.

Corporate governance was developed in the USA in order to standardise the management of companies and improve the transparency of operations as far as shareholders were concerned. Corporate responsibility expresses responsibility towards stakeholders other than financial ones, but it has no official status as yet. It is likely, however, that the status of other stakeholders will increase in the future. In an ideal situation this process would progress in companies without extensive external pressure, but unfortunately, a more realistic forecast may be that the roles of considerations other than business issues will increase as a consequence of a deep-seated social or environmental hazard of some kind. Whatever the process will be, the findings of this work support the prognoses of Ketola (2005) and Mallin (2004) that corporate governance and corporate responsibility will be fused together sooner or later.

Although business people may perceive a model of this kind as a threat to profitable business, the approach has its justification from a competitiveness perspective, too. Laurila and Lilja (2002) conclude that firms need to deviate from certain institutionally legitimate practices at the functional level in order to achieve competitiveness at the firm level. Such an approach could be applied to this deviation as well.

6.3.2 Managerial implications

The political debate on social and environmental challenges such as social sustainability and climate change has been a lively one, but regardless of this the goal of governments worldwide is economic growth. Multinationals and global industries must resolve the same paradox in their operations. They cannot leave this at the level of discussion in the changing operating environments that nowadays form the complicated network of economic, social and environmental issues. The company concerned here has given a positive example of the aim of adjusting to economic, social and environmental issues in business. In common with the entire branch of industry, it has suffered from low profitability over the last five years and has launched and started to develop corporate responsibility in its business. This period has shown that the financial side of business does not completely exclude other issues, although this may be difficult to observe between the lines of recent news concerning the sale or closure of old units, reductions in jobs and outsourcing, with simultaneous large investments in new, emerging market areas in the pulp and paper industry. Or is it precisely because of these economic facts that the industry has come to appreciate the importance of responsibility?

Whatever the stimulus behind this responsibility may be, operations can always be developed further and do better from the comprehensive responsibility perspective in order to make the company a good corporate citizen and prepare for future changes and challenges in the operating environment. This study resulted in some concrete propositions on how to apply comprehensive responsibility to both internal and external functions. Such an approach can improve the sustainability of a company through responsible corporate performance, which may have some positive implications for sustainable development. The managerial implications are summarised in Figure 13 and discussed below.

Local responsibility: It is reasonable to adjust the interpretation of responsibility according to the needs of the local operating environment. The company should define the mutual importance of each responsibility element in the place in question, as it is clear that the various elements are not equally important. The message can hardly carry any credibility if a company emphasises the importance of the responsibility dimension at the same time as it sets strict financial targets for its operations.

If a company decides to extend its responsibility beyond the scope of actual business, it should be prepared to implement responsibility projects in which the focus is close to the company's area of operation and field of know-how in addition to welfare projects. Such projects can have positive psychological and physical long-term impacts both on the company and on the host country, increasing the cultural sensitivity of the personnel. The Finnish Ministry of Foreign Affairs, for example, recommends companies to establish co-operation projects with less developed countries in order to strengthen the host country institutionally and to map future potential commercial co-operation options (Helsingin Sanomat 2006a).

Global ethics and values: A company should establish a global ethical norm, which sets the limits for its operations and those of its partners regardless of the operating environment, as economics and technology are already highly global, but on the societal

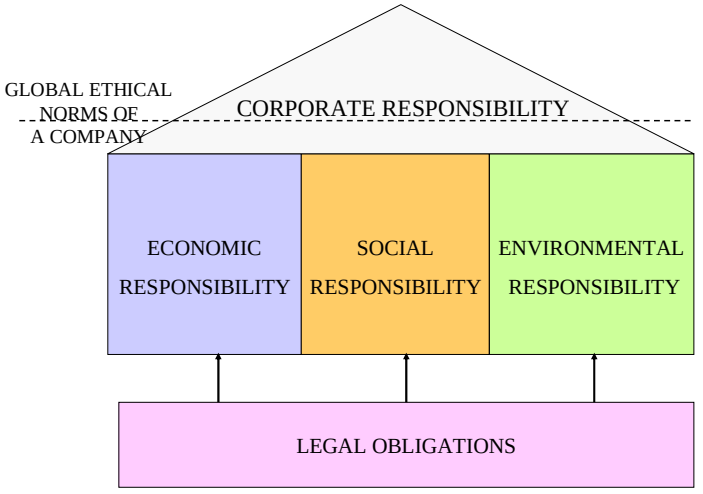

Figure 13. Holistic corporate responsibility of a company.

side there may be some delay on the part of decision-makers (Mannermaa 2006). According to Sihvola (2004), Immanuel Kant already recognised that the people of the world form a universal society because of their mutual dependences. Consequently this network of global ethics is required at all levels in the world, and the implementation of global justice is a duty and obligation of numerous institutions, among them multinational and global companies, which need a global ethical norm for this, as there is no global legislation.

This ethical norm should reflect the values of a global company. A culturally bound value basis is applicable in the case of a globally operating company that has its roots in a particular area. Globally applicable values are difficult to outline, but they are more permanent between operating environments than values that clearly reflect those of a particular cultural area. Employees representing various cultural backgrounds might adopt values of this kind more easily than a set with a more definitely regional character. In addition, credible values somehow reflect the field of operation of the company, and thus they are not general copies taken from other large companies, although common values can be applicable in some cases.

Responsible governance and management: A company could start to assess the advantages of a comprehensive approach to internal responsibility in relation to corporate management and governance and to external corporate responsibility. This does not simplify the management of a global company, but it may clarify managerial issues and their mutual relationships, which can improve the internal efficiency of management. The work can be started by evaluating whether the company's mission, vision, values, strategies and policies reflect its business ideology – whether it is strictly business-oriented or has a more humane approach. In other words, according to Ketola's advice (2005), one could examine whether the words uttered by the company correspond to its practical deeds.

The actions listed above do not necessary improve or worsen the reputation of a company, nor do they automatically yield financial benefits, as responsible performance as such does not prolong the life of company that is financially unsustainable. They do, however, systematise the status of stakeholders and determine whether they have a broad or narrow role in the company. This will facilitate the allocation and implementation of corporate responsibility. In addition, the company will have the competence to intensify the role of a stakeholder group if it acquires a legal status in business management for some reason. Thus the suggestions may intensify the management of the company, supporting the efficient allocation of economic, social and environmental resources both within it and in society at large. This can provide a form of competitive advantage for the first to apply such an approach.

The findings of this work would undoubtedly be useful in other industries, too. Especially natural resource-based industries such as oil processing and mining which interact intensively with the surrounding societies may find the holistic corporate responsibility model appropriate, although modifications with less emphasis on the natural resource element could be applied to any other business as well.

6.3.3 From now on and into the future

Previous studies and the findings reported in this paper have shown that, although the discussion related to the interaction of business and society is well established, the content of the concepts applied, such as business ethics, corporate social performance and responsibility and stakeholder thinking, has remained loose regardless of the work done by

scholars and business people. This may sometimes allow such concepts to be employed as a cover for various politico-economic interests in the context of accelerating global economic competition as well as in a sincere manner in responsible business. Whatever the motivation behind their use may be, the integration of these concepts into business operations does not guarantee that that business will be either responsible or efficient, but it is likely to have various impacts on business and society.

A business question or a problem of the real world cannot be classified into one type so that it can be solved in isolation from other questions. The economic, financial and social networks of the business environment are reflected in the internal management of companies, so that managerial issues form a network which can no longer be allocated to one department, division or unit. Similarly, the stakeholders form a network with various kinds of interrelationships that, directly or indirectly, affect or are affected by the company. Due to the complexity of the real world, cross-scientific research and practical approaches covering entire value chains of various industries are crucial in order to achieve a comprehensive understanding of business phenomena. In addition, cross-scientific, cross-methodological and cross-cultural approaches are recommendable research settings when analysing an empirical phenomenon at the local, regional or global level. This study also showed the challenges involved when one researcher offsets out to make observations in various geographical areas over a long period of time. A cross-cultural research group would no doubt help to deepen the social analysis.

Stakeholder theory provides one option to the research setting discussed above, but the traditional stakeholder map approach is inadequate for describing empirical phenomena, as the real relationships between a company and its stakeholders are much more complicated than direct links of the “affects or are affected by” type. A stakeholder network or a corresponding approach that takes into consideration the complexity of stakeholder relationships would be more suitable, especially when studying conflict-sensitive branches such as natural resource-based industries.

This study showed that the acceptability of operation and corporate responsibility are diverse phenomena that have no unambiguous, cross-cultural definition even within one company. Thus, there can hardly be any single solution for them as a business managerial question in business. A few proposals regarding a holistic management approach to the combining of internal management and external responsibility within an organisation were presented here, but concrete procedures for putting these issues forward in practice would require further theoretical work. Companies have the competence to define local-level responsibility issues, but further research is required on conceptual responsibility elements in various cultural settings, such as the connection between responsible operations and global values. The basic idea behind a globally adoptable set of values is that there should be no contradiction between it and the worldwide religions and philosophies. Such values would thus include little culturally sensitive emphasis. These values also refer to the company’s own values, however, and it is clear that the company must respect local values, cultures and norms in as far as they are not ethically questionable.

Finally, profound research is required into the possibilities for combining corporate governance and social responsibility into a holistic corporate responsibility. Such a combination could also bring to the fore other options for combining various systems, such as quality and certification systems, in business management, thereby improving transparency. The combination of concepts and systems could make management more efficient and allow both business people and academics to assess critically what kinds of systems really improve the transparency of operations. This would be a challenging task,

however, as both the business sector and the academic world consider these issues under a variety of headings. Regardless of the problems of tradition, it is nevertheless worthwhile to adopt a new perspective in both business and research in order to be prepared for future requirements in the context of global business.

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ANNEX 1 SURVEY MATERIAL

Table A. List of persons interviewed, China.

NO.	STAKEHOLDER GROUP	INTERVIEWS	
		PLACE	DATE
A	Case Mill: Stora Enso Newsprint, Suzhou Mill	Suzhou	Jan-Feb
1	Deputy Managing Director		2000
2	Deputy Director, Human Resources		
3	Manager, Research and Development		
4	Manager		
5	Deputy Production Manager		
6	Sales Manger		
7	Paper mill worker		
8	Paper mill worker		
9	Paper mill worker		
B	Local people: Suzhou citizens	Suzhou	Jan-Feb
10	Private entrepreneur		2000
11	Village manager, farmer		
12	Teacher		
C	NGOs and Environmental organisations (NGO)		
	No representatives		
D	Authorities	Suzhou	Jan-Feb
13	Bureau for Industry and Commerce		2000
14	Tax officer		
E	Policy makers	Suzhou	Jan-Feb
15	Environment Department, City of Suzhou		2000
16	Environment Department, Suzhou New District		
F	Customers	Suzhou	Jan-Feb
17	Mill manager, Shangai Kalun Int. Trading Co. Ltd.		2000
18	Director, SOC Paper and pulp manufacturing Co.		
G	Suppliers, sub-contractors	Suzhou	Jan-Feb
19	Sales Manger, Valmet		2000

Table B. List of persons interviewed, Finland.

No.	Stakeholder group	Interviews	
		Place	Date
A	Headquarters		
1	Senior Executive Vice President, Corporation Strategy and Investments	Helsinki	26.1.2000
2	Senior Vice President, Corporation Strategy and Investments	Helsinki	21.1.2000
3	Vice President, Environmental Management, Stora Enso Group	Helsinki	18.8.2000
4	Vice President, Environmental Management, Stora Enso Fine Papers	Helsinki	28.1.2000
B	Wood Supply Finland		
5	Environmental Manager, Department of Forest Operations	Imatra	7.8.2000
6	Regional Director, Department of Forest Operations, Oulu	Oulu	13.1.2000
7	Vice President, Department of International Wood Procurement	Imatra	10.8.2000
8	Environmental Manager, Department of International Wood Procurement	Imatra	20.1.2000
C	Case Mill: Stora Enso Fine Papers, Oulu Mills		
9	Managing Director	Oulu	16.2.2000
10	Pulp Mill Director		11.10.1999
11	Manager, Research & Development		11.10.1999
12	Assistant Sales Director		13.1.2000
13	Environmental Manager		25.8.1999
14	Material Manager		13.1.2000
15	Production Manager		12.10.1999
16	Safety Manager		24.8.1999
17	Pulp Mill Worker		9.11.1999
18	Paper Mill Worker		11.1.2000
D	Local people: Oulu citizens		
19	Senior citizen, former actress	Oulu	8.11.1999
20	Professor, University of Oulu	Oulu	12.10.1999
21	Quality Manger, Nokia	Oulu	14.2.2000
22	Senior citizen, retired environmental manager, Oulu Mills		25.8.1999
E	Environmental non-governmental organisations (NGO)		
23	Researcher, University of Helsinki	Helsinki	1.2.2000
24	Director, Amnesty International, Finland	Helsinki	22.11.1999
25	Forest Manager, WWF, Finland	Helsinki	16.11.1999
26	Campaigner, Greenpeace, Finland	Helsinki	21.1.2000
27	Campaigner, Friends of Earth, Finland	Helsinki	22.11.1999
28	Regional Manager, Finnish Association of Nature Conservation	Oulu	11.1.2000
29	Chairman, Association of Nature Conservation in Oulu	Oulu	11.1.2000
F	Authorities		
30	Director of Environment Office, City of Oulu	Oulu	13.10.1999
31	Senior Inspector, Northern Ostrobothnia Regional Environmental Centre	Oulu	2.11.1999
G	Policy makers		
32	Member of the Finnish Parliament	Helsinki	16.11.1999
33	Member of the EU Parliament	Helsinki	28.1.2000
34	Member of the Environmental Committee, Oulu City Council	Oulu	11.1.2000
H	Customers		
35	Logistics Director, Paperi-Dahlberg	Helsinki	25.1.2000
36	Managing Director, Libris	Helsinki	1.2.2000
I	Suppliers, sub-contractors		
37	Machinery contractor	Oulu	16.2.2000
38	Managing Director, Kokkoniemi Oy saw mill	Oulu	13.1.2000
39	Sales Manger, Omya Oy	Helsinki	28.1.2000
40	Sales Manager, Eka-Chemicals	Oulu	16.2.2000
J	Association of industries		
41	Director, Finnish Forest Industries Federation	Helsinki	25.1.2000
42	Assistant Director, Finnish Forest Industries Federation	Helsinki	1.2.2000

Table C. List of persons interviewed, Germany.

NO.	STAKEHOLDER GROUP	INTERVIEWS	
		PLACE	DATE
A	Case Mill: Stora Enso Newsprint, Sachsen Mill		
1	Managing Director	Eilenburg	8.12.1999
2	Manager, Research & Development/Environment		9.12.1999
3	Manager, Production & Technique		7.12.1999
4	Manager, Purchasing		10.12.1999
5	Sales Manager		6.12.1999
6	Operation Manger, De-inking & Power Plant		6.12.1999
7	Leader, Maintenance & Technical Planning		10.12.1999
8	Foreman, PM1		9.12.1999
9	Foreman, De-inking & Power Plant		9.12.1999
10	Production engineer, PM1		8.12.1999
11	Engineer, Maintenance Techniques		8.12.1999
12	Foreman, Electrical Engineering		8.12.1999
13	Worker, Member of Workers' Council		6.12.1999
14	Assistant, Marketing & Communication		6.12.1999
15	Assistant, Production & Technique		9.12.1999
16	Assistant, Environment		10.12.1999
B	Local people: Eilenburg citizens		
17	Chimney sweep	Eilenburg	8.12.1999
18	Chairman, Association of Farmers	Eilenburg	9.12.1999
19	Director, Institution for handicapped people	Eilenburg	9.12.1999
20	Professor, University of Technology, Economy and Culture in Leipzig	Leipzig	3.2.2000
21	Journalist, Eilenburg newspaper	Eilenburg	7.2.2000
C	NGOs and Environmental organisations (NGO)		
22-23	Director and Campaigner, BUND	Eilenburg	7.2.2000
24	Officer, Landesverband Sachsen, Association of Conservation for German Forests	Karsdorf	8.2.2000
25	Officer, WWF	Frankfurt am Main	11.2.2000
D	Authorities		
26	Head of Governmental Council, Environment	Leipzig	4.2.2000
27	Manager, District Environment Administration,	Delitzsch	9.2.2000
28	Manager, Saxony State Environmental Authority	Leipzig	10.2.2000
29	Manager, Saxony State Employment Authority	Leipzig	4.2.2000
E	Policy makers		
30	Member of Bundestag, Germany	Delitzsch	8.2.2000
31	Member of Saxony State Parliament	Leipzig	2.2.2000
32	District Administrator	Delitzsch	9.2.2000
33	Mayor of Eilenburg District	Eilenburg	3.2.2000
34	Eilenburg town councillor	Eilenburg	3.2.2000
F	Customers		
35	Managing Director, Leipziger Verlags- und Druckereigesellschaft MbH & Co	Stahmeln	2.2.2000
36	Manager, Purchasing, Mitteldeutsche Zeitung	Halle	7.2.2000
G	Suppliers, sub-contractors		
37	Managing Director, Van der Elst Papierrecycling Leipzig GmbH	Leipzig	9.2.2000
38	Managing Director, Hermann & Pflenderer Recycling GmbH	Leipzig	10.2.2000
H	Association of industries		
39	Environmental Manager, Chamber of Industry and Commerce	Dresden	8.2.2000

Table D. List of persons interviewed, Portugal.

No.	Stakeholder group	Interviews	
		Place	Date
A	Wood Supply Celbi		
1	Forestry Director	Leirosa	5.2.2001
2	Forest Production Manager	Furadouro	7.2.2001
3	Forest R&D Manager	Furadouro	7.2.2001
4	Harvesting Manager/Safety Manager	Leirosa	5.2.2001
5	Forestry Supervisor	Furadouro	7.2.2001
6	Assistant Controller	Furadouro	7.2.2001
B	Case Mill: Stora Enso Pulp Division, Celbi Mill		
7	Managing Director	Leirosa	6.2.2001
8	Production Director		5.2.2001
9	Fibre Line Manager		5.2.2001
10	Environment, Safety and Training Manager		8.2.2001
11	Information Analyst		6.2.2001
12	Control and Power Technician		6.2.2001
13	Safety Foreman		13.2.2001
14	Assistant Technician		14.2.2001
C	Local people: Figueira da Foz citizens		
15	Teacher, Member of Town Council	Figuera da Foz	13.2.2001
16	Director, Tourism Office	Figuera da Foz	13.2.2001
17	Professor, Faculty of Technical Sciences, University of Coimbra	Coimbra	16.2.2001
D	NGOs and Environmental organisations (NGO)		
18	Chairman, LPN – Natura Protection League (Liga para a Protecão da Natureza)	Lisbon	12.2.2001
19	Member of Quercus	Ourém	14.2.2001
20	Member of Quercus	Ourém	14.2.2001
E	Authorities		
21	Technical Supervisor, Regional Environment Department, Central Territory	Coimbra	8.2.2001
22	Service Director, Forest Department, Ministry of Agriculture, Rural Development and Fishery	Lisbon	12.2.2001
23	Technical Supervisor, Forest Department, Ministry of Agriculture, Rural Development and Fishery	Lisbon	12.2.2001
24	Director, Industrial Department, Ministry of Economic Affairs	Lisbon	15.2.2001
25	Director, Division of Wood-based Industries, Industrial Department, Ministry of Economic Affairs	Lisbon	15.2.2001
26	Regional Sub-Director, Regional Department of Agriculture, Ministry of Agriculture, Rural Development and Fishery	Coimbra	16.2.2001
F	Policy makers		
27	Assistant to Minister of Rural Development, Ministry of Agriculture, Rural Development and Fishery	Lisbon	12.2.2001
G	Suppliers, sub-contractors		
28	Wood trader, Jose Dias and Fichos Lda	Leirosa	6.2.2001
29	Manager, Aquieira Florestal Lda (Forest owner, wood trader)	Mortágua	8.2.2001
30	Bookeeper, Aquieira Florestal Lda	Mortágua	8.2.2001
31	Manager, Soflora Lda (Silvicultural and Harvesting Services)	Abrantes	14.2.2001
H	Association of industries		
32	General Director, CELPA	Lissabon	12.2.2001

ANNEX 2 THE AHP METHOD

Questionnaire – Main acceptability criteria

Which do you consider more important in the operations of the forest industries, financial-technical issues or environmental issues (applying the criteria presented above)?

_____ financial-technical issues more important
_____ environmental issues more important
_____ equally important

How much more important?

9	extremely much
8	
7	very much
6	
5	much
4	
3	relatively much
2	somewhat
1	equally important

Which do you consider more important in the operations of the forest industries, financial-technical issues or social issues?

_____ financial-technical issues more important
_____ social issues more important
_____ equally important

How much more important?

9	extremely much
8	
7	very much
6	
5	much
4	
3	relatively much
2	somewhat
1	equally important

Which do you consider more important in the operations of the forest industries, environmental issues or social issues?

_____ environmental issues more important
_____ social issues more important
_____ equally important

How much more important?

9	extremely much
8	
7	very much
6	
5	much
4	
3	relatively much
2	somewhat
1	equally important

The task of evaluating financial-technical, environmental and social issues related to the operation of the forest industries was

	very easy
	easy
	rather easy
	rather demanding
	demanding
	very demanding

The AHP calculation principle

1. Comparison of the main criteria

As an example, a comparison of the main criteria may produce the following results:

Fin.-technical – Environm. issues 3/1 (Fin.-techn. issues relatively much more important)
Fin.-technical – Social issues 5/1 (Fin.-technical issues much more important)
Environmental – Social issues 1/2 (Social issues somewhat more important)

2. Calculation of weighting coefficients

The results of the comparison are compiled into a numerical square matrix in which each criterion corresponds to one row and column. The elements of the matrix are the indicators

of the relative importance of the criteria. The diagonal elements are one, as each element is compared with itself in this direction. Half of the elements come from the comparisons and the other half are the reciprocals of the comparison values (Table 2.1).

Table E. Matrix for comparison of the main criteria.

Matrix	Fin.-technical criterion	Environmental criterion	Social criterion
Fin.-technical criterion	1	**3**	**5**
Environmental criterion	**1/3**	1	**1/2**
Social criterion	**1/5**	**2**	1
Sum	1.53	6.00	6.50

Approximate values for the coefficients of the criteria are calculated by scaling the column sums to one. The row sums are then calculated. Finally, the row sums are divided by the number of columns. The results indicate the weights on the row criteria (Table 2.2).

Table F. Scaled matrix.

Scaled matrix	Fin.-technical criterion	Environm. criterion	Social criterion	Row sum, R	Coefficient R/n*
Fin.-technical criterion	1/1.53=0.65	0.50	0.77	0.65+0.50+ 0.77=1.92	1.92/3 =0.640
Environmental criterion	0.22	0.17	0.08	0.46	0.154
Social criterion	0.13	0.33	0.15	0.62	0.206
Sum	1.00	1.00	1.00		1.000

* n = number of columns

The results can be regarded as coefficients of the priority function for pulp and paper industries, indicators of the priority of taking the listed items into consideration, as presented below.

P = 0.640 (fin.-technical items) + 0.154 (environmental items) + 0.206 (social items)

Note: The values of the criteria, and hence their priority, are not yet determined here.

ANNEX 3 SEMI-STRUCTURED INTERVIEW

I. QUESTIONS PUT TO INTERNAL STAKEHOLDERS

A. Change of attitudes in paper production
1. What have been the greatest/deepest/largest problems in paper production during the last decade? (e.g. from the perspective of 1) availability and quality of raw material, 2) pulp and paper processes, 3) markets, 4) other aspects.)
2. What will be the greatest/deepest/largest problems in the pulp and paper industry during the next five years?
3. When did you begin to talk about social and environmental issues related to paper production at your mill and take them into consideration? Who started the discussion?
4. How relevant are social and environmental issues in paper production?
5. How has the consideration of social and environmental issues developed at your mill during the last decade(s)?
6. Is the consideration of social and environmental issues a threat or a possibility for the development of the production process? Does your opinion correspond to the general opinion at the mill? (If the answer is a possibility, ask what the situation was earlier.)
7. Does the financial result influence the consideration of social and environmental issues in the operations of the mill?

B. Influence of international considerations on the mill
8. What kinds of international issues are you involved with in your work?
9. How have international issues been related to your work developed during the last decade?
10. How intensively do you follow news concerning the pulp and paper industries in the media? What are the main sources of information?
11. What do you think about mergers of international forest products companies such as Stora and Enso? Is expansion a positive or negative issue from your perspective? Why it is a positive or negative issue?

C. External stakeholders of the mill
12. With whom do you communicate regularly in your work?
13. How has communication with various stakeholders developed during the last decade?
14. How are local people and the authorities informed about the operations of the mill? Is the current system adequate?
15. What kind of local PR does your mill carry out?

D. Acceptability of operations in the pulp and paper industries
16. How does your mill take care of social and environmental issues in its operations?
17. What kinds of internal and external pressures (suspicions, prosecutions) has your mill met with during the last decade?
18. Can you take issues that are raised into consideration in your daily operations?
19. What kinds of issues should be taken into consideration when developing the production process further?
20. What is the responsibility of the mill concerning its raw material sources? How well do you have to know where your raw material comes from?

21. What are the strengths and weaknesses of your mill if you compare it with a) other mills owned by the company, and b) competitors' mills?
22. How do you perceive the combination of two business and management cultures? What issues have been easy/difficult for you?
23. What kind of production is acceptable? What should be produced, how and why?
24. Imagine that you had USD 50,000 and you decided to invest the money in shares. In what branch of industry would you invest the funds, and why?
25. What do you think about ethical investment funds? Is there a real market for them?
26. What is the role of environmental groups in this country? Are they necessary?
27. Are global rules and regulations for the global market (WTO) necessary?

II. QUESTIONS FOR EXTERNAL STAKEHOLDERS

A. Communication with the mill/company/branch
1. When did you deal with the mill for the first time?
2. What kinds of communication do you have with the mill nowadays and how regular is it?
3. In what situations or on what topics do you communicate with the mill?
4. How has your communication developed during the last decade?

B. International considerations in the pulp and paper industries
5. Do you follow news concerning the pulp and paper industries in the media?
6. What do you think about mergers of international forest products companies such as Stora and Enso? Are these a positive, negative or insignificant matter? Why?

C. Acceptability of operations in the pulp and paper industries
7. Did you have any cause to comment on the operations of the mill in the 1990s? Was your feedback taken into consideration at the mill?
8. How does the mill take care of social and environmental issues in its operations?
9. How does the mill inform you about its operations? Is the current system adequate?
10. What kind of local PR does the mill carry out?
11. What kind of production is acceptable? What should be produced, how and why?
12. Imagine that you had USD 50,000 and you decided to invest the money in shares. In what branch of industry would you invest the funds and why?
13. What do you think about ethical investment funds? Is there a real market for them?
14. What is the role of environmental groups in this country? Are they necessary?
15. Are global rules and regulations for the global market (WTO) necessary?

ANNEX 4 CODING SCHEME

NVivo revision 2.0.163 **Licensee: Mirja Mikkilä**

Project: My Acceptability **User:** MMI **Date:** 11.5.2004 - 22:06:13

NODE LISTING

Nodes in Set: All Nodes

Created: 3.2.2004 - 10:30:51
Modified: 11.5.2004 - 22:28:00
Number of Nodes: 108

1 Challenges
2 Developed issues
3 Development reason
4 Goal of operations
5 Stakeholder investment strategy
6 Strengths of the company and sector
7 (1) /Technical dimension
8 (1 1) /Technical dimension/Availability and quality of raw material
9 (1 2) /Technical dimension/Quality of machinery
10 (1 3) /Technical dimension/Process
11 (1 4) /Technical dimension/Products
12 (1 5) /Technical dimension/Location of industry
13 (1 6) /Technical dimension/Efficiency, productivity
14 (1 10) /Technical dimension/Infrastructure
15 (1 11) /Technical dimension/Transport, logistics
16 (2) /Financial dimension
17 (2 1) /Financial dimension/Competitiveness
18 (2 2) /Financial dimension/Profitability
19 (2 4) /Financial dimension/Shareholder value
20 (2 5) /Financial dimension/Secure investments
21 (2 6) /Financial dimension/Expected return on capital
22 (2 7) /Financial dimension/Influence on production costs, investments
23 (2 8) /Financial dimension/Demand for and consumption of products
24 (2 10) /Financial dimension/Service
25 (3) /Economic dimension
26 (3 1) /Economic dimension/Monetary policy
27 (3 2) /Economic dimension/Role of the industry
28 (3 3) /Economic dimension/Sectoral issues
29 (3 4) /Economic dimension/Sustainable development
30 (3 5) /Economic dimension/Globalisation
31 (3 6) /Economic dimension/Sustainable growth in the sector
32 (3 7) /Economic dimension/Cycle
33 (3 10) /Economic dimension/Social development
34 (4) /Natural resource dimension
35 (4 1) /Natural resource dimension/Production of raw materials
36 (4 2) /Natural resource dimension/Origin of raw materials

37 (4 3) /Natural resource dimension/Sustainability in NRM
38 (4 4) /Natural resource dimension/Diversity of nature
39 (4 5) /Natural resource dimension/Renewability of raw materials
40 (4 7) /Natural resource dimension/Land tenure
41 (4 8) /Natural resource dimension/Energy sources
42 (4 9) /Natural resource dimension/Land use
43 (4 11) /Natural resource dimension/Beauty of landscape
44 (4 12) /Natural resource dimension/Protection
45 (5) /Environmental dimension - Process
46 (5 1) /Environmental dimension - Process/Solid waste
47 (5 2) /Environmental dimension - Process/Emissions
48 (5 3) /Environmental dimension - Process/Effluent
49 (5 4) /Environmental dimension - Process/Noise
50 (5 5) /Environmental dimension - Process/Recycling of materials and products
51 (5 6) /Environmental dimension - Process/Ecological efficiency in raw materials
52 (5 7) /Environmental dimension - Process/Use of chemicals
53 (5 8) /Environmental dimension - Process/Origin of products
54 (5 9) /Environmental dimension - Process/Environmental issues
55 (5 10) /Environmental dimension - Process/Climate
56 (6) /Social dimension - Company as an employer
57 (6 1) /Social dimension - Company as an employer/Employment, permanence of work
58 (6 2) /Social dimension - Company as an employer/Health and safety, working conditions
59 (6 3) /Social dimension - Company as an employer/Content of work, pressure
60 (6 4) /Social dimension - Company as an employer/Development and training
61 (6 5) /Social dimension - Company as an employer/Incomes
62 (6 6) /Social dimension - Company as an employer/Internal communication
63 (7) /Societal dimension
64 (7 1) /Societal dimension/Social responsibility
65 (7 2) /Societal dimension/Reputation, image
66 (7 3) /Societal dimension/External communication
67 (7 4) /Societal dimension/Commercial communication
68 (7 5) /Societal dimension/Official communication
69 (7 6) /Societal dimension/Social communication
70 (7 7) /Societal dimension/Transparency of operations
71 (7 8) /Societal dimension/PR
72 (7 11) /Societal dimension/Charity
73 (7 13) /Societal dimension/Welfare
74 (8) /Cultural dimension
75 (8 1) /Cultural dimension/Company culture
76 (8 2) /Cultural dimension/Cultural diversity
77 (8 3) /Cultural dimension/Cultural sustainability
78 (9) /Political dimension
79 (9 1) /Political dimension/National legislation and regulation
80 (9 2) /Political dimension/International regulations and agreements

81 (9 3) /Political dimension/Political stability and decision making
82 (9 4) /Political dimension/Structure of society
83 (9 5) /Political dimension/Political participation
84 (9 6) /Political dimension/Democracy
85 (9 7) /Political dimension/Freedom of speech
86 (9 8) /Political dimension/Slavery
87 (9 9) /Political dimension/Child labour
88 (9 10) /Political dimension/Discrimination
89 (9 11) /Political dimension/Human rights
90 (9 12) /Political dimension/Local decision-making
91 (9 13) /Political dimension/Participation in trade unions
92 (10) /Organisational dimension
93 (10 1) /Organisational dimension/Strategy
94 (10 2) /Organisational dimension/Personnel
95 (10 3) /Organisational dimension/Research and development
96 (10 4) /Organisational dimension/Operations, decision-making
97 (10 5) /Organisational dimension/Auditing, certification, bench-marking
98 (10 6) /Organisational dimension/Policies
99 (10 7) /Organisational dimension/Triple-bottom-line accounting
100 (10 8) /Organisational dimension/Personal relationships
101 (10 9) /Organisational dimension/Know-how
102 (11) /Business ethics dimension
103 (11 1) /Business ethics dimension/Corporation morality and values
104 (11 2) /Business ethics dimension/Personal morality and values
105 (11 3) /Business ethics dimension/National values and norms
106 (11 4) /Business ethics dimension/Global values and rules
107 (11 6) /Business ethics dimension/Honesty
108 (11 8) /Business ethics dimension/Ethical investment