

Jan-Erik Nylund & Markus Kröger (2012) Cleavage in the understanding of sustainability: Sustainable pulp industry versus sustained local livelihood, *Scandinavian Journal of Forest Research*, 27:2, 229-240, DOI: 10.1080/02827581.2011.637336

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Post-print version. For original, and page numbers, please see:

<http://dx.doi.org/10.1080/02827581.2011.637336>

## Abstract

“Sustainability” is used as a catchword, with different meanings depending on the actor. This paper examines how the term “sustainability” is used by the Brazilian pulp maker Veracel Cellulose, and other major cellulose pulp producers in South America, and the cleavage between the companies and the local communities in their understanding of the term sustainability. The analysis was based on annual or sustainability reports from companies in Brazil (Aracruz, Fibria, Suzano and Veracel) and Chile (Arauco and CPMC), and Nordic Stora Enso and UPM. The main emphasis is on Veracel for 2008 and 2009, which is contrasted with a letter to the Forest Stewardship Council (FSC) from the local Bahian NGO, CEPEDES. Although the companies use “sustainability” as a catchword, in the actual reporting the wording “environmental and social responsibility” is preferred. A new reporting standard, GRI, encourages a narrower focus on selected business-related indicators, rather than a broader view in accordance with the Brundtland and Rio definitions. The cleavage between business- and a livelihood-oriented understanding of “sustainability” reflects a difference in understanding of the underlying concept of “development”. To ensure long-term sustainability of company operations, sustainable business development of the pulp and paper industry should include local livelihood perspectives to a greater extent than at present.

## Keywords

- [Pulp conflicts](#),
- [social sustainability](#),
- [Veracel](#),
- [CEPEDES](#)

## Introduction

### Sustainability – concept and catchword

When the concept *Nachhaltigkeit* (sustainability) was first coined in the eighteenth century, it was laden with values and defined a specific actor category, the “scientific foresters”, who wanted to secure sustained timber

yield over an unlimited period. This was in opposition to other stakeholder interests, who wanted to mobilise a natural resource for immediate gain (Grober, [2007](#)). During the final decades of the twentieth century, the concept of sustainability, usually in connection with the concept “development”, gained popularity, particularly among ecologists (Grober, [2007](#)). Sustainability became generally acknowledged through the “Brundtland report” (WCED, [1987](#)) and the Rio documents (UN, [1992](#)), where the “three pillar” approach was introduced – sustainable development should be considered from economic, ecological and social aspects (Littig & Griessler, [2004](#), [2005](#)); however, these documents mention the “institutional aspects of social development”, which is easily overlooked (Littig & Griessler, [2005](#)).

Economic sustainability is a modern formulation of the eighteenth century *Nachhaltigkeit*, and is well covered by micro- and macro-economic theory. Ecological sustainability offers a challenge to both science and policy-makers. Bell and Morse attempt to analyse the wider meaning of the concept:

... if one does acknowledge the centrality of people in SD [Sustainable Development], then one does have to engage with difficult issues of multiple perspective and public participation. These are not optional extras to be tagged onto a science-based analysis; they are central. This does, inevitably, insert SD into politics, economics, policy formulation and culture. Sustainability scientists might decry this ‘dilution’ and ‘distraction’, as they see it, but there is simply no choice. We would suggest that the decision is not so much whether participation has to happen, but how best to achieve it. (Bell & Morse, [2003](#), p. 27)

To Bell and Morse ([2003](#)), even “ecological sustainability” could not be solely defined from a within-science platform, as it is strongly related to both basic values and practical politics.

The scope and targets of social sustainability are harder to define (Lélé, [1991](#); Littig & Griessler, [2004](#)). Littig and Griessler ([2005](#)) consider the “three pillars” are not commensurable; Boulanger ([2007](#)) and Ascher ([2007](#)) stress the need for a Political Science dimension when identifying indicators of sustainable development. Values and political dynamics vary depending on the actors and contexts, particularly in the rich social mosaics of Latin American forests and forestry areas. Therefore, CIFOR researchers argue that the views of local communities should be integrated into the definitions, indicators and studies on sustainable development (Cronkleton et al., [2008](#)).

As “sustainability science” developed, the concept quickly entered public and political discourse, which lessened the conceptual clarity. Kajikawa ([2008](#)) reviewed research within different applications of sustainability science. For example, at the policy-level, the revised Swedish Forestry Act of 1993 placed “sustainable timber production” and “biodiversity” on equal footing: in the government proposition introducing the legal text to parliament (Prop. 92/93:226, p. 24ff.), an explicit reference was made to the Rio proceedings (Forest Principles and Agenda 21) (Nylund, [2009](#)). The incommensurability between the economic target of timber production and the vaguely formulated ecological target created controversy between the state Forest Agency and other actors in the forestry sector (Sundström, [2005](#)). This discrepancy was even more apparent in the global South (Marchak, [1995](#)), although in Latin America also it did create innovative partnerships in sustainable forest resource management (Ros-Tonen et al., [2007](#)). Meanwhile, the corporate world eagerly adopted the new concept into their marketing strategies (Polonsky & Mintu-Wimsatt, [1995](#)) and corporate websites still emphasise various aspects of the sustainability of their operations.

However, the analysis of the roots of pulp investment conflicts drew attention to another issue, “sustainable *development*”. Although the Brundtland report (WCED, [1987](#)) was politically innovative in combining respectable, but not so attractive, “sustainability” with the popular concept of “development”, it avoided deeper analyses of this issue (Stenmark, [2002](#)). The inherent contradictions of combining “development” with “sustainability” are discussed by Lélé ([1991](#)) and extensively critiqued by Latin American scholars of environmental governance (Taylor, [2011](#)). Escobar ([1995](#)) contends development itself is a first-world cultural construct. As development relates to change, the question raises as to how much change, or what pace of change is compatible with social sustainability (Cheney et al., [2004](#)).

#### Forest industry policies and the megaton pulp mills of the North East

After the coup in 1964, Brazil's military government embarked stalwartly on an industrial policy of import substitution and natural resource exploitation. With support from strategic plans, fiscal incentives and state credits, the intensive campaign of forest plantation created a strong raw material base for both the existing mining industry and the growing pulp and paper business. At the same time, the development of pulping technology in both Brazil and Europe rendered eucalypt bleached kraft pulp a prime material for papermaking. Financed mainly by national capital and supported by Nordic technical competence, the world's the largest eucalypt pulp mill, Aracruz, was constructed in northern Espírito Santo State, Brazil and started production in 1976 for both the national and global market (Juvenal & Mattos, [2002](#)). Although a commercial success until 2008, Aracruz faced land use conflicts with displaced native and traditional growers, whose rights were suppressed by the military: after democratisation in 1985, a series of lawsuits and arbitrations settled some of these grievances (Wilson, [2009](#)).

Since the end of the 1980s, the governmental policy has focused on promoting industrial growth and export markets, through making targeted loans to selected companies from the National Development bank. In 1992, the private investor group Suzano and a parastatal, Companhia Vale do Rio Doce, used plantations established under previous incentive schemes and acquired new land to establish a second major mill, Bahia Sul, 250 km north of Aracruz. The centre-left governments of President Lula da Silva (2003)–2011) maintained these industrial policies and combined industrialist and trade union interests in agribusiness development, at the cost of rural development (Gonçalves, [2006](#)).

In 2005, Aracruz and Nordic Stora Enso opened a joint venture pulp company, Veracel, 330 km north of Bahia Sul. In 2008, Aracruz nearly defaulted due to massive derivative speculation losses of 2.13 billion dollars and a standing debt of 7 billion dollars (Bacchetta, [2009](#)). Suzano took over the state-owned shares during the privatisation of Vale in 2000, and after structural deals, Aracruz became part of the Fibria group in 2009: the stock of both groups being traded on the market. Veracel still continues as a joint venture between Fibria and Stora Enso and does not have to report to other shareholders. However, as all three companies operate on the international market, they have the same need to emphasise the sustainability of their operations.

All three mills now produce over a million tons of pulp a year, which generally requires 100,000 hectares of plantations. By law, companies require a similar area for biotope restoration and conservation. In the case of Aracruz, the acquisition of these lands was from degraded Atlantic rain forest and large cattle ranches established between 1950 and 1970 on cleared rainforest, which was felled by Aracruz bulldozers in the 1970s (Paues, [2000](#), p. 108; Vicente, [2008](#)). This process displaced traditional cultivators with customary land rights

and settlers without registered titles. Subject to growing criticism both within Brazil and from importing countries, the companies had to change their policies and management practices; however, the conflicts continue. Oliveira (2008) presents a socio-economic description of the region Extremo Sul da Bahia, where Bahia Sul and Veracel mills operate, and the business ethics of Aracruz and Veracel, and land conflicts relating to their plantations, are discussed by Myllylä and Takala (2011). Resistance to large-scale pulp investments in Brazil has been examined by Kröger (2010, 2011a) and a conflict solving diagnosis method, Ethical Analysis, has been applied (Kröger and Nylund, 2011).

The present study: scope and method

The research had two phases: a mainly quantitative one, scanning annual reports for the use of sustainable/sustainably/sustainability, and a second one, looking for how the concept of sustainability, regardless of wording, is handled in a single report and briefly contrasting it with another understanding of sustainability.

Annual reports have gradually changed in form from shareholder and investor information on performance into broad presentations for all classes of stakeholders, including customers and strive to communicate the company's self-image and create goodwill. Aspects considered critical are emphasised, as is apparent from the interest in sustainability and Corporate Social Responsibility (CSR) aspects and that reports have been renamed "Sustainability Report", instead of the traditional "Annual Report". In some cases, full financial reporting is provided separately, and the Sustainability Report just contains the main economic results. At the same time, the reports need to be factual and trustworthy; there is an important, albeit blurred boundary between advertisements and promotional material. The Global Reporting Initiative (GRI) provides guidelines for ensuring broad coverage of the matters reported, including three-pillar sustainability; a majority of the reports provide GRI-related information.

The emphasis of this study was the Brazilian pulp industries, with three closely located mills in focus: Aracruz, Bahia Sul and Veracel. As Aracruz was merged into Fibria in 2009, both the Aracruz report from 2008 (Aracruz, 2008) and the Fibria report from 2009 (Fibria, 2009) were analysed. As Bahia Sul is part of the Suzano group, the Suzano report from 2009 (Suzano, 2009) was used. As Veracel changed its reporting format in 2009 into a strongly public-oriented style, the reports from both 2008 and 2009 were analysed (Veracel, 2008, 2009). For reference, the 2009 reports of two Chilean companies, Arauco (Arauco, 2009) and CMPC (CMPC, 2009), which operate in Brazil, were also examined. Both Arauco and CMPC are large actors on the international market and have expanded into neighbouring countries, but are less exposed to NGO criticism. Finally, the 2009 reports of Stora Enso (2009) with its 50% stake in Veracel, and the Finnish company UPM (2009), with its megaton mill in Uruguay, were included.

In the first phase of the study, the reports were scrutinised for all occurrences of *sustainable*, *sustainably* and *sustainability*, that are referred to here as *sustainab*\*. If a word occurred in exactly the same form in both a header and the subsequent text, this was only counted once: if the word occurred as a title of an independent publication, certificate, award or in tables, it was not counted. An attempt was made to distinguish between when the word was used as a "label" (adjective, adverb) without further qualification and when it was used in a context where the importance was explained or a definition or analysis of the meaning was provided.

In a second phase, the focus was on the last Veracel report (2009). As Veracel is wholly owned by Stora Enso and Fibria, there is no need for the company to consider investors in the compilation of its report, as its purpose is to inform customers and the general public. The analysis was structured according to the triple-bottom line approach. To provide a basis for comparison, a short manifesto was chosen, this was a letter written to the certifier, Forest Stewardship Council (FSC), by a local NGO, CEPEDES that “denounced” the sustainability of Veracel. This manifesto reflected an alternative understanding of “sustainability” and “development”: this letter will be discussed in a forthcoming paper by Kröger and Nylund (2012). Although, this document should not be considered representative in the way annual reports are, it is included to provide a textual base for a different understanding of “sustainability”.

## Results

### The use of “sustainability” and related words in company reporting

In all reports, *sustainab\** is used as a general, positively laden catchword, such as sustainable management, sustainable forestry and sustainability ([Table I](#)). The readers are apparently assumed to accept the use of the word without further question. *Sustainab\** is also used in headers of sections describing specific processes, such as wood procurement, waste management or social relations. The Nordic companies use *sustainab\** liberally, whereas, Veracel using it sparsely. When used in a qualified way, the three-pillar concept is taken for granted. When referring to social sustainability, all discussion of what the concept could imply is avoided, instead, various CSR activities are described. The GRI framework is not taken for granted, although, in some cases the possibilities are not fully explored. For example, the Veracel ([2009](#)) report covers only a few minor infringements under the GRI heading, yet the company is being sued by the public authorities for many offences, ranging from non-compliance with licensing to criminal charges. Similarly, Arauco avoids any mention of conflicts over alleged Mapuche tribal land. With the exception of Stora Enso, which openly reports major conflicts including Brazil and China, reference to deeper social contradictions is absent. Aracruz and Fibria offer a kind of “apology” for previous lack of respect for indigenous and traditional farmers, and emphasise positive corrective action, while emphasising their contribution to local and national economy. As information to stockholders and customers, the reports provide a glossy picture that is insufficient for investment or business decisions. *Sustainab\** is mainly, and sometimes overly, used as positively charged catchwords in advertising and politics.

Table I. Occurrence of “sustainability” and related words in company reporting, and adherence to GRI standard.

Report	Pages	Label	Qualified	GRI
Aracruz (2008)	94	19	0	Index, no level given
Fibria (2009)	132	19	1	Index, no level given
Suzano ( <a href="#">2009</a> )	135	8	1	C-level index
Veracel (2008)	117	7	0	No
Veracel (2009)	40	5	0	B-level. Strong emphasis
Arauco (2009)	148	13	1	B-level
CMPC (2009)	114	14	3	A-level
Stora Enso (2009)	48	27	2	B-level index
UPM ( <a href="#">2009</a> )	145	49	3	No

Notes: pages: size of the entire report; label: occurrences of “sustainab\*” without further qualifications; qualified: occurrence of “sustainab\*” where the meaning of the concept is defined or discussed; GRI: Adherence or reference to the GRI reporting standard and level, if indicated ri-relevant information is provided.

Aracruz: annual and sustainability report 2008

The introductory sections used the expression “sustainable development” eight times without any reference to the meaning of the concept. In the section “Consulting the Communities”, the company’s activities involving local communities was reported with a further five more occurrences of *sustainab\**. The outcome of a major lawsuit, which resulted in 11,000 hectares being returned to traditional owners, is reported. The criticism of company contribution to municipal election campaigns (no party bias) were defended as the “promotion of sustainable development” (two occurrences). In the remainder of the report, *sustainab\** was used in relation to management practices (three times). In an enclosed external evaluation of the report by two independent reviewers (Ricardo Voltolini, environmental journalist, and Celso Funcia Lemme of Rio de Janeiro federal university), “sustainable competitive advantages” and “the business case for sustainability” were emphasised. Although aspects of ecological (management), social and economic sustainability are present, the sustainability theme was not developed further.

Fibria: sustainability report 2009

The introduction provides a brief description of the three pillars of sustainability: “ ... to develop our renewable forestry business as a sustainable source of life, generating wealth and economic growth, promoting human

and social development, and guaranteeing environmental conservation" (Fibria, [2009](#), p. 6). A dozen specific projects related to sustainability were mentioned in the text about water footprint, forest footprint, conservancy, biodiversity, climate, environmental conservation and social action. Economic sustainability was briefly mentioned in relation to the 2008 financial crisis, and the external review combined sustainable business and corporate responsibility.

Suzano: sustainability report 2009

The report used *sustainab\** sparingly in the running text, but provided an understanding of the concept in the initial listing of its "sustainable strategies". The issues mentioned were oriented towards immediate environmental issues, job safety and some CSR activities. The ethical code of the company focused on "protection of human rights, labour rights, the environment, and anti-corruption". The report was formulated to match GRI requirements, and with only eight occurrences of *sustainab\**, besides the initial text, sustainability was not presented as a prominent issue.

Veracel: sustainability analysis 2008

The report stated "the company has chosen sustainable development as its main flag", and mentioned a sustainability agenda for providing guidelines for action. However, *sustainab\** was sparsely used; instead, the text described the company's work in a range of fields related to CSR and sustainable use of resources and environment. The report was characteristic of promotional material, with a minimum of economic information.

Veracel: sustainability report 2009

The 2009 report had a new format, was much briefer and compact, and was obviously intended for a wider audience. The report provided information on a number of specific issues, identified through "stakeholder dialogue". However, sustainability as a concept was not broached, and *sustainab\** was only used five times. The text was indexed according to GRI, and adherence to GRI reporting standards was emphasised. However, there was no mention of the public grievances and lawsuits that surround Veracel, as evidenced in our interviews with the public prosecutor in Eunápolis, Silva Neto, and local farmers (Kröger, [2011b](#)).

CMPC: sustainable development report 2009

This report differed from the other in that it exemplified what it meant by sustainability, which reflected the definition in the Brundtland report:

" ... sustainable development, contributing to the economic and social development of the country, while protecting the environment at the same time"; "the sustainable development principle, which essentially means to make productive activities, required for the growth of our countries, compatible with the legitimate right that future generations have to live in a suitable environment" (CMPC, [2009](#), p. 9ff.)

Arauco: sustainability report 2009

Sustainability was emphasised as a leading principle of the company, but the concepts of sustainable development and sustainable forest management were not defined until later in the report. Social, ecological

and (company) economic aspects were outlined in a glossary (p. 121), but in the main report, *sustainab\** was used 12 times, and then mainly as a label.

#### Stora Enso: sustainability performance 2009

This report was brief, with a subtitle, "Minimising impact", and was accompanied by a formal financial report, as with CMPC reporting. *Sustainab\** was frequently used as a label, albeit some specific connections provided substance to the concept. A detailed account of the company's "sustainability policy" was presented, which is explicitly built on the three-pillar model. The report provided accounts of conflicts or NGO criticism in Finland, Sweden and China, but did not report Veracel's business and lawsuits. However, a note of self-examination, if not self-criticism, was perceptible throughout the report.

#### UPM: annual report 2009

The UPM report has a traditional format, with a clear address to shareholders and investors, and full financial and managerial information. However, *sustainab\** was liberally used and was even applied to products. While providing concrete examples of various company activities considered sustainable, there was a lack of definitions, except in the glossary, which quoted the Brundtland definition. The Fray Bentos mill in Uruguay was not mentioned in relation to sustainability or past conflicts, but emissions and pulp plantation programs were discussed in detail.

#### Sustainability as expressed in Veracel's Sustainability Report 2009

The 2008 Sustainability Report from Veracel was presented in the standard format used for annual reporting within forest industries. However, in 2009, Veracel decided to structure its reporting to match GRI standards, and to formulate it similar to other media material. Thus, the 2009 Sustainability Report was more akin to an information brochure, which rendered the items the company wanted to emphasise more accessible but it was less systematic in mapping total performance. On both the website and in previous reports, Veracel emphasised certification by FSC and Cerflor. As with other reports examined, there was no overt reflection on the content of the concept of sustainability. Through emphasising the GRI link, the company editors highlighted the GRI understanding of sustainability was a cornerstone that required no further comment. However, this might not fully exploit the GRI modalities for addressing the criticisms of Veracel's operations.

#### Economic sustainability

The 2008 Sustainability Report contained a routine financial statement, whereas, the 2009 Sustainability Report did not mention Veracel's economic performance. In both the 2008 and the GRI-formatted 2009 report, the company chose not to highlight its own long-term economic sustainability. Even though both reports include Brazil's role in the world pulp market, Veracel's own performance in the world pulp market was not specified, although there was reference to the company being a closed-capital company (owned by two other companies), and might be one motivation for not discussing its own economic performance. Information on Veracel's economic contributions to society in the form of employment, taxes and export earnings, were included along with the claim this makes a significant contribution to society: this is particularly emphasised in the final table on Indicators of Economic Performance, in the 2009 report.



Long-term economic risks are not discussed in the website information. However, in interviews with staff at both Veracel and its parent company Stora Enso (Kröger, [2010](#)), there were concerns over the risk associated with the proliferation of resistance against the large-scale pulp investment model. This could result in the halting of plantation expansion, as was the case in Rio Grande do Sul after MST led land occupation and there was subsequent violent intervention by the police. This implied economic sustainability could not be guaranteed, as there would be heavy financial burdens on the parent companies if political, social or legal developments, or economic uncertainty, induced premature writing-off of such large investments.

### Ecological sustainability

Specific issues including mill emissions on plantations soils, pesticide use and conservation and restoration of natural vegetation are broached in the report. These issues are debated among environmental NGOs, and there could be factual disagreements, as Veracel does not provide reference to third-party studies or make internal monitoring protocols accessible, and avoids discussing the overall impact (positive or negative) on the entire region. The GRI Indicators of Environmental Performance focus on energy, water use, biodiversity, greenhouse gasses and fines for non-conformity to laws and regulations; however, no reference was made in the Sustainability report to land occupations by local groups, nor of lawsuits against the company over land, contracts or alleged lack of proper environmental licensing. Veracel claimed a number of critical environmental issues were managed in a responsible and sustainable way: in the section titled "sustainability" (Veracel, [2009](#), p. 26), the plantations' function as a "carbon sponge" was discussed at length. Aracruz began growing Eucalypts in the 1970s and they are now grown in the region over several rotations and under intensive-management models, without declining yields. Thus, constant development of forestry techniques related to mineral nutrition and soils are required, as is emphasised in the report, and until now, the yield has been sustainable, which is the basic requirement in commercial forestry (Grober, [2007](#)).

### Social sustainability

Veracel's 2009 Sustainability Report, and the reports for the previous five years, presented a wide range of social action and emphasised social responsibility, even matters presented under Economic Performance emphasised the social role of the company. The CSR expressions ranged from social networks and social inventory, and identified areas where local communities could benefit from company support, such as concrete projects resulting from these activities, a range of education-oriented activities, and direct work with Indian communities. GRI Indicators of Social Performance comprised the majority of the report's summary. According to the report, social action has expanded during the years the mill has been in operation, but appeared to be missing during the preceding period of plantation establishment. Although the CSR approach was dominant, a summary table titled "Sustainability" included a short statement on ethics, provided statistics on educational support, environmental education, health support, dialogue with communities and traditional communities and social demands (requests from the communities and the professional educational programme). As with the environmental reporting, there was no reference to the social issues within the surrounding society or those prevalent in the plantation areas, and only a short note referred to deforestation of the region over the last 75 years, with cattle ranching being the dominant form of land use. The GRI Core indicator 501 "Impact on the community" (Larsson & Ljungdahl, [2008](#)) was only addressed through reporting on taxes.

### Comparison with peer companies

Suzano followed the traditional format, leaving room for argumentation, although a GRI summary, which was not present in previous reports, was included. However, the information presented on economy, environment, and social action was similar to that presented by Veracel and to some extent Fibria. On their Internet sites, these companies pay more attention to environmental and social matters than the Chilean companies Arauco and CMPC, which are less exposed to international criticism (except for conflicts over traditional lands of the native Mapuche; Kröger, [2010](#)). Conversely, in its web-based material, Stora Enso ([2010](#)) has a strong social and environmental profile: in a feature, “Hard talk on Global Responsibility”, the company responds to direct questions and criticism of its global activities. This could be considered a response to both a marketing strategy and a high degree of exposure to socio-environmental scrutiny.

#### Local criticism of company understanding of sustainability

The local NGO of Extreme South of Bahia, located in Eunápolis, CEPEDES, presented specific criticisms against the paper pulp industry in two documents: the “Manifest against the FSC certification of Bahia Sul Celulose” (Cepedes, no date), and an NGO research (Cepedes, 2008), which criticised Veracel on a number of issues.

#### Economic sustainability

The manifest (translated from Portuguese by J.-E. Nylund) stated, “large-scale monoculture of eucalypt does not benefit local communities” and “don’t contribute economically to the local economy compared with other crops”, and “reduces the supply of basic foodstuffs and causes the prices to increase” (CEPEDES, [no date](#), p. 1). This was a direct local perspective only considering the perceived effects on the local economy and did not discuss the economic performance of Veracel. As these effects were perceived as negative, the entire pulp investment was considered economically unsustainable. Behind these short statements lies disenchantment. When pulp investments were made, both the companies (Veracruz and Suzano-Mucuri) and the higher authorities made vague promises that the investments would create an economic boom in the poorly developed pulp mill region of Extremo Sul da Bahia, which since 1970, had already lost a third of its rural population (approximately 70,000 people) (IMA/LIMA, [2009](#); Raykil, [2005](#)). However, employment, including permanent contactors at both Veracel ([2009](#)) and Suzano-Mucuri was less than 3000 people and only 13% of the tax money went the municipalities (Veracel, [2009](#)).

#### Ecological sustainability

There is disagreement between academia and business and environmental NGOs about ecological indicators (Kröger, [2010](#)). The variability in soil, hydrological conditions and management regimes is one reason for the difficulty in generalising peer-review studies. CEPEDES (no date, 2008) makes three specific claims: large-scale eucalypt growing reduces water availability, biodiversity is drastically reduced and herbicides and other agrochemicals accumulate in the soil. With these specific statements, the main criticism concerns infringements against existing environmental legislation and illicit clearing of remaining natural vegetation, as the entire pulp region is situated in an almost entirely clear-felled Atlantic rainforest area. In contrast to the vitriolic campaign against monocultures by international NGOs (e.g. [World Rainforest Movement](#)), CEPEDES focused on corporate behaviour in environmental matters and large-scale changes in the region, rather than on plantation sustainability.

## Social sustainability

The main emphasis in CEPEDDES' criticism is on negative social consequences. CEPEDDES (no date) claimed large-scale plantations forces people, particularly small subsistence farmers, away from the countryside, both directly and indirectly; increases unemployment through mechanised management, causing unemployed people to move to urban areas; and, concentrates landholding and increases the price of land used for agricultural settlement programs by INCRA (National Institute for Colonization and Agrarian Reform). In addition, under present land use rights, rural people have lost access to minor forest products that were available in the large cattle ranches in the fringe areas of semi-natural vegetation. Fieldwork in this area (Kröger, [2005](#), Kröger, [2010](#)) reveals a plethora of specific complaints referring to the social impacts of the pulp investments that have changed the social realities of the entire region. This is disadvantageous to the general population while a smaller number benefit, for example in the out grower schemes where Veracel only contracted about hundred growers in 2009 (Veracel, 2010).

## Further views on sustainability

Besides CEPEDDES, the principal national actor resisting large-scale plantations is MST (Brazilian Landless Rural Workers' Movement), who organised large-scale land occupations in 2004 and 2009–2011. MST has also acted against Stora Enso plantation schemes in the south of Brazil, and works with La Vía Campesina, the world's largest transnational peasant movement. The overriding territorial goal of MST is land reform and more equitable land ownership relations within Brazil. However, in the Extreme South – capitalised, this is the name of the region of Bahia, MST liaises with CEPEDDES and other civic groups, including urban movements, which stage direct land occupations and other protests against the investment model of Veracel and other pulp companies. Thus, MST advocates an alternative vision of sustainable development to the actors within Brazil's political and industrial sector, that is, redistribution of cultivable land among small farmers, focus on food production for local markets, and development of artisan and small-scale industry. This concept of food sovereignty is shared by La Vía Campesina.

Veracel, and many other pulp companies in the global South, have been reported to FSC by CEPEDDES, leading to a questioning of both specific company management of the plantations and basic principles for certifying intensively-managed plantations. FSC has suspended its certification to two Indonesian pulp companies, Asia Pulp and Paper and Asia Pacific Resources International Limited, because of non-compliance with rules related to the sustainability of their operations (Smart Wood, [2010](#)). The environmental licensing of plantation operations is being questioned by Brazilian public prosecutors (Kröger, [2011b](#)). This criticism highlights plantations are not correctly licensed due to the infringements of the interest clauses within environmental licensing laws that require an Environmental Impact Assessment (EIA) to be undertaken by a different company to the one receiving the deal for pulp mill construction. The EIA for Veracel was by the Finnish consulting company Pöyry, which also received a construction contract, contrary to the licensing conditions. Many grievances have been generated by the overstepping of legal procedures (CEPEDDES, [2008](#); Kröger, [2010](#), [2011b](#)).

## Cleavages in understanding sustainability

## Company reporting

The Brazilian and Chilean companies differ little in their profile. "Sustainability" was used as a catchword, as indicated by the title "sustainability report" or similar, and in that, the concept of sustainability was not fully analysed. However, the policies and practices the companies consider sustainable were emphasised, and provide an idea of what the companies mean by calling their activities sustainable. Three areas were prominent: the use of a renewable raw material; responsible waste and emission management; and corporate social action. Although the Nordic companies were similar, Stora Enso does provide a deeper presentation of ethical issues related to sustainability and conflicting stakeholder interests both in the report and on its website, whereas, UPM mixes target groups and embellishes its text with many unqualified "sustainable" labels, which might reflect editorial practice rather than company policies. The companies might consider the use of GRI reporting and several cases of stakeholder dialogue as guarantees that relevant aspects were covered by the reports.

### Two different outlooks

This overview highlighted how sustainability is interpreted differently by different actors. Veracel and other companies considered sustainability as a combination of technical solutions for solving the specific issues identified by certifiers and other business-oriented platforms (GRI), and then add measures aimed at creating local goodwill. In Brazil, infrastructure and social services are not well developed and there is more need for social action than in Nordic countries; however, in the past, Nordic companies also had to assume similar responsibilities in their rural surroundings. The underlying value is a globalised neoliberal economy where property rights and market power give companies a prerogative in land acquisition and establishing industries without the need to consult local communities, as long as the global framework (including Dow Jones Sustainability Index formal requirements) is observed. This does not imply companies ignore specific issues covered by their definition of sustainability, as failure to address these issues could stop production and seriously imperil investments.

Conversely, critics envision another type of development and sustainability to the neoliberal approach and advocate a small-scale, socially equitable model, where distributive justice has a central role and the benefits of development reach all inhabitants of the region (Bell & Morse, [2003](#); Böhm & Brei, [2008](#); Cronkleton et al., [2008](#); Lélé, [1991](#); Littig & Griessler, [2004](#)). However, even without this difference in values, a change in perspective from corporate performance to local livelihood generates a different framing of "sustainability", particularly with reference to the "social pillar". The main difference is the fundamental issue of how sustainability and sustainable development is understood from a local community perspective.

Littig and Griessler raise several issues illustrating the case presented here. Under the subtitle "The myth about the three pillars of sustainability", they write:

While the idea of the three pillars is not really in dispute, the same cannot be said for key objectives, operationalisation, and the *definition of indicators* within the three pillars. Ecological objectives seem to be the least disputed, followed by economic goals, but there is clearly a lot more disagreement about the objectives of the main social objectives of sustainable development ( ... ) In case of objectives and indicators, *it seems to depend on who defined them*. Often, they comprise a theoretically unfounded selection of assumptions, goals, and indicators of social-political provenance. (Littig & Griessler, [2005](#), p. 67) (*our italics.*)

The core issue surrounding Veracel and other fast-wood projects is the social issue. Any land use change generates questions about social sustainability. In Bahia, land use change per se is not the central issue: the main issue is how these changes influence livelihoods and lifestyles. One tempting development alternative is transformation of land use for commercial forestry, similar to in Nordic countries; however, first-comers impose structural constraints on the replication of their industrialisation trajectories by late-comers, who generally occupy lower positions in the international division of labour (Kröger, [2008](#), [2010](#)). In the Nordic countries, forestry-based development spanned several generations and “economically redundant” people were absorbed by industry in major urban centres (Palo, [2006](#)). In many parts of Brazil, these “redundant” rural people are, generally, landless and, currently, have no easy alternative. Any socially sustainable development must involve a majority of the existing population and not simply seen it as an obstacle to business development (Littig & Griessler, [2004](#)). To achieve this, both state and industry need to take joint responsibility; if transnational companies are included, it is a shared responsibility of both the receiving and sending countries.

In advocating the livelihood rights of local people, another conceptual distinction is presented by Biart

A final point to pay attention to is the confusion ... between desirability and sustainability. The Brundtland objective leads ... to focusing on how to increase welfare so that various generations can meet their needs ... sustainability approach ... aims to determine the minimal social requirements for long-term development ... and to identify the challenges to the very functioning of society in the long run (Biart, [2002](#), quoted by Littig & Griessler, [2005](#), p. 69)

along with a note of caution:

The analytical aspect of social sustainability ... is not to be understood as an attempt to claim a justified minimum of social rights and defend them against the primacy of neoliberal economic policy and/or the ecologic primacy ... (Littig & Griessler, [2005](#), p. 69)

The increased prominence of social sustainability as an expert-defined and non-political (forestry) practice underlines the vagueness and partiality in defining sustainability per se. With an adherence to the theme of forest policy science, an examination of sustainability should include the underlying values and presuppositions, the diversity of understanding among different groups, and the power relationships after the final agenda for a sustainability assessment is written (Boulanger, [2007](#)), who also emphasises, quoting Ortega-Cerdá ([2005](#)), the formulation of sustainability indicators should be a collaborative process.

We consider the use of “sustainability” as a catchword or banner (Littig & Griessler, [2005](#)), and the lack of recognition of “sustainability” as a cognitive category, a strategy for losing initiative in a discourse defined by other actors. Instead of clarifying the meaning of “sustainability”, the companies focus on CSR, with an agenda for matching marketing needs, their own perceived local goodwill, and narrow environmental criteria defined by allied actors, such as certifiers or industrial consultants. Large-scale agribusiness companies generally tend to use CSR as a tranquiliser in situations where national governments are unable or unwilling to enforce control (Dauvergne & Neville, [2010](#)). However, there is a risk involved: the purpose of sustainable industrial management is not to improve public image, but to ensure sustained business. Analysis of criticisms of Veracel and other pulp and paper companies (Kröger, [2005](#), [2010](#), [2011a](#); Kröger & Nylund, [2011](#)) has generated the

concern current strategies are suboptimal, for both the local societies in which the companies operate and the companies' own long-term performance. The reports are treated as marketing tools, aimed at creating goodwill. However, some managers, sometimes, appear to realise avoiding critical issues is not sustainable in a phase where public criticism is gaining momentum in the media. Fieldwork data on Veracel's zone of influence and analysis of NGO campaigning on the Internet supports the conviction that more openness would strengthen business sustainability and assist in solving underlying contentious issues.

### Concluding remarks

The cleavage in understanding sustainability is widening. In 1991, Lélé ([1991](#)) suggested the philosophy behind mainstream sustainable development suffered from an incomplete understanding of the problems of poverty. When social sustainability became a prominent theme in academic publication, IUCN (Borrini-Feyerabend, [1997](#)) published a manual on social sustainability in conservation, with emphasis on local participation and addressing local needs. The need for public participation has many advocates (e.g. Boulanger, [2007](#); Cronkleton et al., [2008](#); Fraser et al., [2006](#); Littig & Griessler, [2005](#)), and the ethical obligation of sustainable development in addressing the needs of the local society is emphasised (Littig & Griessler, [2004](#); Peet & Bossel, [2000](#)). In a discussion on environment in forest policy, rather than sustainability per se, Larson and Ribot ([2007](#)) stress the "uneven playing field", where policy permanently excludes rural poor from the natural wealth around them. However, contemporary company models for assessing sustainability take a narrower perspective on sustainability, as highlighted in Veracel's 2009 Sustainability Report. Even from within industry, GRI is criticised for being too narrow (Isaksson & Steimle, [2009](#)). Yet, Veracel has chosen a very narrow interpretation of the GRI Core indicator 501. Another initiative in industry-related sustainability, the computerised tool ToSIA (Lindner et al., [2010](#)), has similar restrictions in social criteria i.e. social criteria are reduced to the CSR perspective of corporate benevolence and good-will building. Similar questions are discussed for the car industry by Mikler ([2004](#)), and the changing understanding of CSR is analysed by Grafström et al. ([2008](#)).

The understanding of sustainability is a central cleavage separating corporate and local population views in new large-scale plantation-based pulp investment areas. The emphasis on sustained local livelihoods and a sustainable pulp industry stems from premises, but the actors share the same territory and social space. The cleavages in the understanding of "sustainability" and "development", and lack of reconciliation or recognition, as reflected in the pulp companies' annual reports, have a decisive impact on the ideological politics which influence forest policy and investment outcomes. The questions and discourses dividing understanding of sustainability shape the trajectory of forest policy, forestry and forests. Conflict resolution or "sustainable development", in this context, will be difficult to achieve before the cleavage has been bridged through developing a collaborative and locally constructed definition.

### Summary

We wish to move a step forward from the earlier discussion, and synthesize our experience as follows:

- "Three pillar" sustainability is more of a social interpretation and a politically conditioned definition than the "one- or two-pillar" idea covering only timber and biodiversity.

- The conventional business understanding of the “three pillars”, in business frequently called “bottom lines”, represents a limited and biased picture of sustainability.
- Conflicts are inevitable if an important group influenced by forestry practices disagree about the sustainability of the introduction of new forest/land resource management systems.
- Sustainability considerations are not an *end* in themselves, but are a *means* for developing policies, i.e. they have to lead to action. If a conflict can be transformed into a discourse, it may result in greater sustainability from both parties’ viewpoints.
- To ensure long-term sustainability of company operations, sustainable business development of the pulp and paper industry needs to include local perspectives in management strategies more than at present, and not just consider the “sustainability profile” as a marketing tool.

## References

1. Aracruz 2008 . Annual and sustainability report . Retrieved March 17, 2010, from <http://www.aracruz.com.br>
2. Arauco 2009 . Sustainability report . Retrieved November 20, 2010, from [http://www.arauco.cl/file/file\\_3420\\_report\\_2009\\_ingles.pdf](http://www.arauco.cl/file/file_3420_report_2009_ingles.pdf)
3. Ascher, W. 2007. Policy sciences contributions to analysis to promote sustainability. *Sustainability Science*, 2: 141–149. [[CrossRef](#)], [[Web of Science ®](#)]
4. Bacchetta , V. L. 2009 . La industria de la celulosa y la crisis mundial. Desensillando hasta que aclare . Retrieved October 17, 2009, from <http://www.ecoportal.net>
5. Bell, S. and Morse, S. 2003. *Measuring sustainability: Doing by learning?*, London: Earthscan.
6. Biart , M. 2002 . Social sustainability as part of the social agenda of the European community . In: T. Ritt , *Soziale nachhaltigkeit: Von der Umweltpolitik zur Nachhaltigket?* [Social sustainability: From environmental policy to sustainability]. *Informationen zur Umweltpolitik 149* , pp. 5 – 10 . Wien , , Austria : Arbeiterkammer Wien .
7. Böhm, S. and Brei, V. 2008. Marketing the hegemony of development: Of pulp fictions and green desert. *Marketing Theory*, 8: 339–366. [[CrossRef](#)], [[Web of Science ®](#)]
8. Borrini-Feyerabend , G. 1997 . *Beyond fences. Seeking social sustainability in conservation* , Vol. 1 . A process companion. Switzerland and Cambridge , UK : IUCN, Gland .
9. Boulanger, P.-M. 2007. Political uses of social indicators: Overview and application to sustainable development indicators. *International Journal of Sustainable Development*, 10: 14–32. [[CrossRef](#)]
10. CEPEDES Centro de Estudos e Pesquisas para o Desenvolvimento do Extremo Sul/BA . 2008 . Violações socioambientais promovidas pela Veracel Celulose, propriedade da Stora Enso e Aracruz Celulose [Socio-

environmental infringements committed by Veracel Celulose, property of Stora Enso and Aracruz Celulose] . Centro de Estudos e Pesquisas para o Desenvolvimento do Extremo Sul/BA , Eunápolis , BA : .

11. CEPEDES Centro de Estudos e Pesquisas para o Desenvolvimento do Extremo Sul/BA . (No date) . Manifesto publico contra a certificação pelo FSC do manejo florestal da empresa Bahia Sul Celulose [*Public statement against the FSC certification of the forest management of the company Bahia Sul cellulose*] . Retrieved November 15, 2010, from [http://www.cepedes.org.br/artigos/manifesto\\_fsc.pdf](http://www.cepedes.org.br/artigos/manifesto_fsc.pdf)

12. Cheney , H. , Nheu , N. & Vecellio , L. 2004 . Sustainability as social change: Values and power in sustainability discourse . Sustainability and social science: Round Table Proceedings . Melbourne, CSIRO Minerals, Retrieved November 15, 2010, from [http://www.minerals.csiro.au/sd/pubs/chenev\\_et\\_al\\_final.pdf](http://www.minerals.csiro.au/sd/pubs/chenev_et_al_final.pdf)

13. CMPC 2009 . Sustainable development report . Retrieved April 14, 2011, from <http://www.cmpc.cl/wp-content/uploads/2010/04/REPORTE-CMPC-INGLES-BAJA.pdf>

14. Cronkleton , P. , Taylor , P. L. , Barry , D. , Stone-Jovicich , S. & Schmink , M. 2008 . Environmental governance and the emergence of forest-based social movements . Bogor: Center for International Forestry Research, Retrieved November 15, 2010, from [http://www.cifor.cgiar.org/publications/pdf\\_files/OccPapers/OP-49.pdf](http://www.cifor.cgiar.org/publications/pdf_files/OccPapers/OP-49.pdf)

15. Dauvergne, P. and Neville, K. J. 2010. Forests, food, and fuel in the tropics: The uneven social and ecological consequences of the emerging political economy of biofuels. *Journal of Peasant Studies*, 37: 631–660. [[Taylor & Francis Online](#)], [[PubMed](#)], [[Web of Science](#)®]

16. Escobar, A. 1995. *Encountering development: The making and unmaking of the third World*, Princeton, NJ: Princeton University Press.

17. Fibria C. S. A. 2009 . Sustainability Report . Retrieved November 15, 2010, from [http://www.fibria.com.br/rs2009/shared/rs2009\\_en\\_031110.pdf](http://www.fibria.com.br/rs2009/shared/rs2009_en_031110.pdf)

18. Fraser, E. V. D., Dougill, A. J., Mabee, W. E., Reed, M. and McAlpine, P. 2006. Bottom up and top down: Analysis of participatory processes for sustainability indicator identification as a pathway to community empowerment and sustainable environmental management. *Journal of Environmental Management*, 78: 114–127. [[CrossRef](#)], [[PubMed](#)], [[Web of Science](#)®]

19. Gonçalves , M. T. 2006 . Plantações e política florestal no Brasil: Análise da formação e da institucionalização de demandas (1960–2000) [Plantations and forest policy in Brazil: analysis of growth and institutionalization of demand (1960–2000)] . Sociedade Brasileira de Economia e Sociologia Rural, XLIV Congresso, Fortaleza July 23–27, 2006. Retrieved November 15, 2010, from [http://www.ciflorestas.com.br/arquivos/doc\\_plantacoes\\_19602000\\_27351.pdf](http://www.ciflorestas.com.br/arquivos/doc_plantacoes_19602000_27351.pdf)

20. Grafström , M. , Göthberg , P. & Windell , K. 2008 . *CSR: Företagsansvar i förändring [CSR: Corporate responsibility in a process of change]* . Malmö : Liber AB .



21. Grober , U. 2007 . Deep roots – A conceptual history of ‘sustainable development’ (Nachhaltigkeit) . Wissenschaftszentrum berlin für Sozialforschung. Retrieved November 15, 2010, from <http://www.umweltethik.at/download.php?id=373>
22. IMA/LIMA Instituto de Meio Ambiente e Laboratório Interdisciplinar de meio ambiente . 2009 . Avaliação ambiental estratégica dos planos de expansão da silvicultura de eucalipto e bcombustíveis no Extremo Sul da Bahia [*Strategic environmental assessment of the plans to expand the silviculture of eucalypt and biofuels in the Extremo Sul da bahía*] . Rio de Janeiro : Instituto de Meio Ambiente e Laborató rio Inter-disciplinar de Meio Ambiente .
23. Isaksson, R. and Steimle, U. 2009. What does GRI-reporting tell us about corporate sustainability?. *The TQM Journal*, 21: 168–181. [\[CrossRef\]](#)
24. Juvenal , T. L. & Mattos , R. L. G. 2002 . O setor de cellulose e papel. BNDES 50 anos–histórias setoriais [The cellulose and paper sectors. BNDES 50th anniversary – sectorial histories] . Retrieved November 15, 2010, from [http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes\\_pt/Galerias/Arquivos/conhecimento/livro\\_setorial/setorial04.pdf](http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/conhecimento/livro_setorial/setorial04.pdf)
25. Kajikawa, Y. 2008. Research core and framework of sustainability science. *Sustainability Science*, 3: 215–239. [\[CrossRef\]](#), [\[Web of Science®\]](#)
26. Kröger , M. 2005 . The intercultural encounter between the Brazilian landless farmworkers’ movement and Veracel cellulose: Symbolic Power Analysis . Unpublished master’s thesis, Latin American Studies, University of Helsinki, 2005 .
27. Kröger , M. 2008 . Finland, Brazil and state-business relations: The case of Brazilian pulp investments . Brazilian Studies Association Conference , BRASA2008, March 27–29 , Tulane University : New Orleans .
28. Kröger , M. 2010 . The politics of pulp investment and the Brazilian landless movement (MST) . Doctoral Dissertation, University of Helsinki. Acta Politica No 39 .
29. Kröger, M. 2011a. Promotion of Contentious Agency as a Rewarding Movement Strategy: Evidence from the MST-Paper Industry Conflicts in Brazil. *Journal of Peasant Studies*, 38: 435–458. [\[Taylor & Francis Online\]](#), [\[Web of Science®\]](#)
30. Kröger , M. 2011b . Veracel faces legal battles and risks profitability: Logging bans threaten the supply of eucalyptus in the pulp mill; law suits mount to a closure risk . Report to Maattomien ystävät ry. Retrieved November 15, 2010, from <http://maattomienliike.files.wordpress.com/2011/04/lawsuitsveracel2011.pdf>
31. Kröger , M. & Nylund , J.-E. 2011 . The conflict over Veracel pulpwood plantations in Brazil–application of Ethical Analysis . *Journal of Forest Policy and Economics* . doi: 10.1016/j.forpol.2011.07.018 . [\[CrossRef\]](#)
32. Larson, A. M. and Ribot, J. C. 2007. The poverty of forest policy: Double standards on an uneven playing field. *Sustainability Science*, 2: 189–204. [\[CrossRef\]](#), [\[Web of Science®\]](#)

33. Larsson, L.-O. and Ljungdahl, F. 2008. *License to operate. CSR och hållbarhetsredovisning i praktiken [License to operate. CSR and sustainability accounting in practice]*, Stockholm: Ekerlids förlag.
34. Lélé, S. M. 1991. Sustainable development: A critical review. *World Development*, 19: 607–621. [\[CrossRef\]](#), [\[Web of Science®\]](#), [\[CSA\]](#)
35. Lindner, M., Suominen, T., Palosuo, T., Garcia-Gonzalo, J., Verweij, P., Zudin, S. 2010. ToSIA—A tool for sustainability impact assessment of forest wood chains. *Ecological Modelling*, 221: 2197–2205. [\[CrossRef\]](#), [\[Web of Science®\]](#)
36. Littig, B. and Griessler, E. 2004. "Soziale Nachhaltigkeit [Social sustainability]". In *Informationen zur Umweltpolitik 160*, Wien: Kammer für Arbeiter und Angestellte.
37. Littig, B. and Griessler, E. 2005. Social sustainability: A catchword between political pragmatism and social theory. *International Journal of Sustainable Development*, 8: 65–79. [\[CrossRef\]](#)
38. Marchak, P. 1995. *Logging the Globe*, Montreal: McGill-Queen's University Press.
39. Mikler, J. 2004. The international car industry and environmental sustainability: Moving beyond "green-washing"? In: H. Cheney, E. Katz & F. Solomon, Sustainability and Social Science: Round Table Proceedings. CSIRO Minerals, Australia. Retrieved November 15, 2010, from [http://www.minerals.csiro.au/sd/pubs/Mikler\\_Final.pdf](http://www.minerals.csiro.au/sd/pubs/Mikler_Final.pdf)
40. Myllylä, S. & Takala, T. 2011. Leaking legitimacies: The Finnish forest sector's entanglement in the land conflicts of Atlantic coastal Brazil. *Social Responsibility Journal*, 7, 42 – 60. [\[CrossRef\]](#)
41. Nylund, J.-E. 2009. Forestry legislation in Sweden. Report 14. Uppsala: SLU, Department of Forest Products.
42. Oliveira, K. L. 2008. O ananço do eucalipto no território de Extremo Sul da Bahia: recentes transformações na estrutura fundiária e o papel do crédito rural. MSc thesis, Universidad Federal da Bahia, Salvador, 2008. Retrieved 15 November, 2010, from [http://www.bibliotecadigital.ufba.br/tde\\_busca/arquivo.php?codArquivo=2028](http://www.bibliotecadigital.ufba.br/tde_busca/arquivo.php?codArquivo=2028)
43. Ortega-Cerdá, M. 2005. Sustainability indicators as discursive elements. 6th International Conference of the European Society for Environmental Economics, June 14–17, Lisbon. Retrieved November 15, 2010, from <http://www.ent.cat/images/stories/ENT/pdf/articles/indicators.pdf>.
44. Palo, M. 2006. "Coevolution of forestry and society in Finland: From preindustrial to industrial forestry". In *Essays on the history of Finnish forestry*, Edited by: Rauhalahhti, M. 49–99. Punkaharju, Finland: Finnish Forest History Society.
45. Paues, N. 2000. *Celbi, a Swedish pioneer of eucalyptus paper pulp*, Falun, Sweden: Stora Enso.
46. Peet, J. and Bossel, H. 2000. An ethics-based systems approach to indicators of sustainable development. *International Journal of Sustainable Development*, 3: 221–238. [\[CrossRef\]](#), [\[CSA\]](#)

47. Polonsky , M. J. & Mintu-Wimsatt , A. T. 1995 . *Environmental marketing. Strategies, Practice, Theory, Research* . Binghamton , NY : Haworth Press .
48. Raykil , C. 2005 . Relatório de pesquisa diagnóstica da situação socio econômica do entorno da fábrica de celulose na microrregião de Eunápolis [Report on diagnostic research on the socio-economic situation around the pulp mill in the microregion of Eunápolis]. Eunápolis, BA: Centro de Estudos e Pesquisas para o Desenvolvimento do Extremo Sul/BA .
49. Ros-Tonen , M. A. F. , Van Den Hoonaard , H. & Zoomers , A. 2007 . *Partnerships in sustainable forest resource management: Learning from Latin America* . Leiden : Brill . [\[CrossRef\]](#)
50. Smart Wood 2010 . Forest management controlled wood assessment report for PT . Riau Andalan Pulp and Paper Forestry Division (Riaufiber) in Pangkalan Kerinci , Riau province , Indonesia . Retrieved November 15, 2010, from <http://www.rainforest-alliance.org/forestry/documents/riaufiberpubsum08.pdf>
51. Stenmark, M. 2002. *Environmental ethics and policy-making*, Aldershot, , UK: Ashgate.
52. Stora Enso O. 2010 . Hard talk about global responsibility . Retrieved November 15, 2010, from <http://www.storaenso.com/globalresponsibility/>
53. Sundström , G. 2005 . Målstyrningen drar åt skogen. Om government and governance i svensk skogspolitik [Management by objectives goes astray. On government and governance in Swedish forest policy] . Stockholm : SCORE, Stockholm University .
54. Suzano 2009 . Pulp and Paper . Sustainability Report 2009 . Retrieved November 15, 2010, from <http://www.suzano.com.br/portal/lumis/portal/file/fileDownload.jsp?fileId=2C90884B2893D172012A104391637172>
55. Taylor, P. L. 2011. Development, knowledge, partnership, and change: In search of collaborative approaches to environmental governance. *Latin American Research Review*, 46: 262–271. [\[CrossRef\]](#), [\[Web of Science®\]](#)
56. UN (United Nations) 1992 . Agenda 21 . New York .
57. UPM 2009 . Annual Report 2009 . Retrieved November 15, 2010, from [http://www.upm.com/EN/ABOUT-UPM/Downloads/Company\\_Info/Documents/UPM\\_AR\\_09\\_en\\_full\\_online.pdf](http://www.upm.com/EN/ABOUT-UPM/Downloads/Company_Info/Documents/UPM_AR_09_en_full_online.pdf)
58. Veracel 2008 . Sustainability report 2008 . Retrieved October 23, 2009, from <http://www.veracel.com.br> (removed 2011, file can be obtained from the authors) .
59. Veracel 2009 . Sustainability Report 2009 . Retrieved November 15, 2010, from <http://www.veracel.com.br/LinkClick.aspx?fileticket=xkXQBmU-kC4%3d&tabid=151&mid=1020>
60. Vicente , J. M. 2008 . Interview of Vicente (bulldozer driver of Aracruz in the 1970s, whose work was to cut rainforest) by Borgen, E. in the documentary film “Rodeado de inimigos” . Norway : Borgen Production .
61. WCED (World Commission on Environment and Development) 1987 . Our common future . Nairobi : UNEP .

62. Wilson , E. 2009 . Company-led approaches to conflict resolution in the forest sector . The Forests Dialogues Research Paper . Retrieved November 15, 2010, from [http://environment.yale.edu/tfd/uploads/TFD\\_Reducing\\_Forest\\_Conflict\\_ResearchPaper\\_Wilson.pdf](http://environment.yale.edu/tfd/uploads/TFD_Reducing_Forest_Conflict_ResearchPaper_Wilson.pdf)

63. World Rainforest Movement 2010 . Retrieved December 9, 2010, from [www.wrm.org.uy](http://www.wrm.org.uy)