

Implementing corporate social responsibility into netchains in a transparent way: opportunities and challenges

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Contents

Contents	3
1 Introduction	4
2 Definitions	4
2.1 Corporate social responsibility	5
2.2 Transparency	6
3 Possible approaches.....	7
3.1 Product-oriented approach.....	7
3.1.1 Lifecycle analysis.....	7
3.1.2 Chain information systems as a link between LCA and CSR	10
3.1.3 State of the art.....	11
3.2 Company-oriented approach	12
3.2.1 CSR as a strategic option	12
3.2.2 State of the art.....	13
4 Discussion.....	15
5 Conclusions and recommendations.....	16
References.....	17

1 Introduction

Today, liability and responsibility are two important topics in agrifood chains. Liability is mainly connected with food safety, which is of higher importance in the animal than in the plant production chain. Responsibility concerns how a product is produced, and has an ecological and an ethical dimension: is the product produced in an environmentally and socially sound manner? In contrast to liability, responsibility is not a legal concept but a moral or political one. The focus of this paper is on responsibility, but it is closely connected with liability.

Currently, responsibility is mostly defined and implemented at the corporate level – which is why it is often referred to as corporate social responsibility (CSR). Here, ‘social’ refers to ethical and environmental aspects, which are usually considered to be outside the scope of the core business of a company. However, the term CSR indicates that social and environmental aspects should in fact belong to the core business of a company (SER 2000). Later on, we describe in more detail what exactly is meant by CSR.

Many products are a result of several companies operating in a netchain¹. A socially and environmentally aware consumer who buys a product may not be very interested in the companies involved in the chain, but he or she will be concerned that the product has been produced in a socially and environmentally sound manner. A socially responsible company within a chain needs to know that the products it is supplied with have been responsibly produced. In other words, the whole netchain needs to be transparent; that is, there should be a shared understanding of as well as shared access to all relevant product information (Hofstede, 2002). We will come back to the term transparency in more detail.

Because a netchain consists of several companies there are unavoidable information decoupling points, which means that valuable information can become lost. Hence, an integrated netchain approach to responsibility is most desirable. This, however, is a very ambitious integration level. The central problem in this paper can be formulated as:

How can CSR be implemented in integrated netchains in a transparent way?

The question can be subdivided into three subquestions:

- How can CSR be made transparent in a netchain?
- What are the difficulties of implementing CSR?
- What are the practical implications of CSR?

To answer these questions we first take a closer look at what is meant by CSR and transparency. We then discuss the possible approaches to integrate CSR and transparency into a netchain, as well as the state of the art in this field. Our discussion of these approaches leads to a conclusion concerning what steps and research are needed in order to incorporate CSR into netchains.

2 Definitions

In this section we briefly define and describe the two main concepts of this paper, namely CSR and transparency. The subsection on corporate responsibility is largely based on previous work carried out by colleagues at the Agricultural Economics Research Institute (van der Schans et al., 2002; Goddijn et al., 2003; Vogelzang et al., 2003; Versteegen and van der Lans, 2003). The subsection on transparency is largely based on a paper by Hofstede (2002).

¹ Following Lazzarini et al. (2001), we use the term netchain to mean ‘a directed network of actors who cooperate to produce products or services’.

2.1 Corporate social responsibility

CSR has recently become a hot topic both for companies and governments. However, already in 1953 Howard R. Bowen published his *Social Responsibilities of the Businessman* (Bowen, 1953). And in 1970 Milton Friedman wrote an article 'The Social Responsibility of Business is to Increase its Profits', illustrating that this apparently was a topic for discussion (Friedman, 1970). Then in 1979, Carroll introduced a conceptual model for corporate social performance to integrate the ideas on CSR developed so far (Carroll, 1979). Carroll defines CSR as:

the social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time.

One could argue whether CSR is about legal or supra-legal requirements (van der Schans et al., 2002). Both the Dutch government and the European Commission take the position that CSR is about supra-legal requirements (SER, 2000; European Commission, 2002). Many companies, however, maintain that complying with legal standards is already an act of social responsibility. In any case, both government and industry seem to agree that CSR as such should be voluntarily implemented in a company's strategy, and be subject to discussion with the relevant stakeholders. This, in other words, pleads for market- or self-regulation of CSR. This sounds reasonable, but Noreena Hertz warns in her *The Silent Takeover* of undesirable situations in which such topics as social security, health care and education become dependent on companies (Hertz, 2002). Dutch NGOs therefore argue for more active government involvement in CSR (see www.mvo-platform.nl). Furthermore, Graafland (2000) developed an economic framework to clarify the relationship between ethical principles and profit. It shows that governmental financial incentives often have an opposite effect, because the intrinsic motives for CSR are undermined. It thus seems that the role of the government in relation to CSR is a problem that cannot easily be solved in an unambiguous way.

More recently, CSR has been connected with the 3P (people, profit and planet; Elkington, 1998) bottom line of sustainable development (SER, 2000). 'People' aspects mainly refer to labour circumstances, the use of illegal labour (including that of children), community relations and contributions to charities. 'Planet' refers to environmental aspects and is related to the depletion and pollution of soil, water and air, and more recently to climate change. 'Profit' aspects include a company's contribution to investments, employment, taxes, etc. One could also add such issues as fair trade, which is often related to developing countries. While most 3P aspects are obvious at first sight, it is not always easy to quantify them because sustainable development is a normative concept, closely connected with values (Wolfert, 2002). These values, and derived norms, can vary from country to country, and even from individual to individual. Therefore, communication and discussion with stakeholders should play a central role. Now, CSR can be defined as:

A company's active and explicit contribution to sustainable development in cooperation with its stakeholders.

Keijzers et al. (2002) refer to CSR as a development model with three stages. These are, in order of increasing ambition level:

1. reorganization;
2. control;
3. integration within decision-making processes.

Firstly, companies try to reorganize in order to meet legal requirements. Often this is difficult enough, given that laws and regulations applying to a company are generally complex and sometimes contradictory or not publicly enforced anyway. Secondly, companies try to look for win-win situations such that, for example, they outperform environmental rules without substantially reducing profits ('pollution prevention pays'). Thirdly, companies try to integrate the experiences they have gained in

pilot projects into the mainstream of their business operations. They also look for opportunities to increase their social performance by cooperating with other parties in the netchain.

Thus, CSR is a complex issue and is subject to much discussion, because of its voluntary nature. It is also a very dynamic concept, because it is context-sensitive and a matter of continuous improvement. Nevertheless, CSR is widely recognized as an urgent issue that has to be implemented.

2.2 Transparency

Hofstede (2002) defines the transparency of a netchain as:

the extent to which all the netchain's stakeholders have a shared understanding of, and access to, the product-related information that they request, without loss, noise, delay and distortion.

In particular, he points at the clause 'that they request', which emphasizes that transparency is a demand-driven concept. With regards to CSR it is about the question what information needs to be collected and reported in order to examine whether a company's production profile is environmentally and socially sound. This is closely connected with another important part of the definition, namely 'shared understanding'. In practice, this is always a very difficult issue. The environmental dimension seems to be relatively easy, given the widely accepted norms on emissions of carbon dioxide, nitrate, ammonia, etc., and the use of fossil energy, PVC, etc. Still, it becomes very complex within netchains, many of which involve many actors operating in different parts of the world. Therefore, lifecycle analysis (LCA) seems to be an appropriate instrument to approach this. We will come back to this later.

The social dimension seems to be more difficult, because values are involved and these can be rather subjectively bound. One should bear in mind, however, that in most European countries there is a structural interaction between organizations of employers and those of employees on a number of social issues. The more easily definable social issues are therefore tackled in sectoral socio-economic institutions, whereas less easily definable social issues remain the responsibility of individual firms. Things become even more difficult when worldwide chains are considered and cultural differences come into play.

For example, certain forms of child labour may be quite normal and even acceptable in one country while they are not in another. This brings home the point that while certain principles may be universally adhered to, the way they can be worked out in practice tends to differ across contexts. This imposes additional requirements on the issue of transparency in connection with CSR, because a certain level of performance can only be evaluated properly if the context in which this performance is realized is taken into account.

Another important part of the definition is 'shared access'. Here, we should first ask ourselves whether actual access is always necessary. Most of the time, a consumer or a company in the netchain simply takes it for granted that a product has been produced in a responsible way. There is a need for actual access to information only at certain moments, for example when new choices have to be made or there are reasons to be suspicious. This means that although information should be available, it does not necessarily have to be about the product itself. Most of the time, a certificate, logo or simply the name of a company is enough.

In complex, worldwide netchains, 'enabling technology' in the form of an appropriate electronic information system is indispensable. Although technically this may be a complex thing to realize, it is in fact simply a matter of information and communication technology. However, for several reasons (e.g. competition) companies are not always willing to provide all information. This means that in order to cooperate in a netchain, companies need to overcome certain 'political' differences (interdependency and power) and organizational challenges (hold-up situation, i.e. one company can block the organization of transparency for a complete netchain, in order to improve its bargaining position in the netchain). And, are consumers always interested in particular information? This brings us back to the previously-mentioned demand for transparency. It is clear that in the case of food safety the demand for access to information is much higher because the consumer's personal health

is involved. However, because environmental and social matters usually do not directly affect a consumer, the demand for access to this information is usually lower.

In conclusion, transparency is an ideal concept but difficult to realize as a result of technological complications and of the political and organizational complications of companies. The following sections describe some possible ways to overcome these problems.

3 Possible approaches

In theory, two approaches to incorporating transparency on CSR into a netchain can be distinguished, namely a product-oriented and a company-oriented approach. In practice, however, combinations of the two approaches are more likely.

3.1 Product-oriented approach

The most ideal situation in this approach is that the 3P sustainability aspects can be unambiguously allocated to individual products. LCA – a product-oriented tool commonly applied to environmental problems – seems to be an interesting instrument for netchains, because it considers the whole lifecycle and therefore the whole netchain of a product. Hence, we will take a closer look at this instrument. We will then consider chain information systems as a possible starting point for collecting product-related data and see whether connections can be made with CSR. Finally, we will provide some illustrations from practice.

3.1.1 Lifecycle analysis

An LCA is commonly used to determine the environmental impacts of a product. Such impacts are expressed per functional unit of production (e.g. per 1000 kg of tomatoes). According to the ISO standards, a complete LCA takes into account the following aspects of environmental sustainability (Guinee et al., 2002):

- Use of biotic (material) and abiotic (natural) resources;
- Landuse (competition, loss of biodiversity, loss of life support);
- Land desiccation;
- Climate change;
- Ozone layer depletion;
- Human toxicity;
- Ecotoxicity, water and soil;
- Photochemical pollution;
- Acidification;
- Eutrophication;
- Waste heat;
- Odour, air and water;
- Noise;
- Ionic radiation;
- Casualties.

Effect indicators are selected to determine the contribution of production chains to these environmental categories. By introducing indicators for measuring environmental performance, the environmental impact of products becomes clearer and easier to trace. After inventarization of the flows that enter and leave the system, the potential impacts on natural resources, the environment and human health are assessed. The assessment of impact is always expressed, with help of the effect categories, in terms of potential rather than actual impacts. This is for at least three reasons, namely:

1. The reference for the assessment of the impact is the functional unit, which has an arbitrarily chosen magnitude.
2. In practice, an integration over space and time is performed, generally to just one time moment and to a global level; this means that no attention is paid to the time patterns of emissions or to site-specific concentration.
3. There is no one-to-one relationship between the processes of the production system and the system's impact, because of the existence of multiple processes, namely of processes which are shared by more than one system.

Some examples of effect indicators are global warming potentials (for the contribution to the greenhouse effect) and ozone depletion potentials (for the contribution to the depletion of the ozone layer).

An LCA is mainly focussed on the environmental aspects of products and has hardly any links with economic, social or other aspects (Guinee et al., 2002). At first sight, human toxicity could be linked with social sustainability. However, the 'human toxicity' category concerns the effects of toxic compounds in the environment on human health. Sometimes the health effect of exposure to toxic compounds at workplaces are also incorporated into LCAs. If so, these risks are mostly grouped together in a larger effect category (e.g. casualties while performing labour). Because an LCA is aimed at potential environmental effects with no attention to space and time, no attention is paid to toxic emission under labour circumstances. Thus, the only link with social sustainability in LCAs could be the number of casualties.

The importance of including social aspects in chain analyses can be illustrated by the fact that the Life Cycle Initiative Group of the United Nations Environmental Program (UNEP), in combination with the Society of Environmental Toxicology and Chemistry (SETAC), pays attention to social aspects. The Life Cycle Initiative Group is to investigate opportunities for including the social and economic dimensions of products and services in lifecycle assessment and lifecycle thinking. As a first step, a task force will prepare a feasibility study on this topic. Based on this study's findings, a concrete work plan will be established (Udo de Haes and Sonneman, 2003).

In Sweden some initiatives have already been taken to integrate the work environment into an LCA. One of the methods to do so is the Swedish WEST method (Antonsson and Nilsson, 1999), which is based on assessing nine different work environment factors (six physical and three psychological/social factors). These are:

- Risk of accidents;
- Physical work load;
- Noise;
- Chemical health risks;
- Vibration;
- General physical environment;
- Working atmosphere;
- Work content;
- Freedom of action.

The WEST method is used to estimate how a particular work situation or workplace affects an individual relative to the effect on him/her had he/she not performed that work.

Another Swedish method (Antonsson and Nilsson, 1999) was based on the collection of data for four impact categories, namely deaths due to work-related accidents, workdays lost due to work-related accidents and diseases, hearing damages, and allergies and eczema. Data for these impact categories were collected from the Swedish statistics on work-related accidents and diseases. The number of such accidents and diseases in the four impact categories in different parts of the lifecycle was calculated based on the amount of material, number of transports, etc. in each part of the

lifecycle in relation to the total amount/number produced in the sector. A normalization was made for each of the four impact categories to check whether the number of injuries and diseases in any part of the lifecycle deviates from a value calculated from average statistics on injuries and diseases in Sweden. In addition, a sensitivity analysis was made to control how sensitive the result is to uncertainties in the statistics. A case study showed that it is possible to make a working environment LCA that harmonizes with an LCA for the environment. The method has been further developed in respect of normalization. Normalization makes it possible to identify the parts of the lifecycle which pose extra risks as well as to distinguish the parts of the lifecycle that make large contributions to the results, mainly because they represent a large part of the lifecycle and not because the risk is very high. Also the sensitivity analysis is a development of the method which gives a good basis for controlling the effects of uncertainties in available statistics and calculations.

EOSTA supplies wholesalers and retailers – both specialized natural food outlets and conventional supermarkets – with organic products. To engage all parties in the organic food supply chain in a dialogue concerning food quality, organic agriculture and ethics in production and trade, EOSTA developed the ‘Nature and More’ protocol. This protocol is designed to enhance the common standards beyond mere essentials, by stimulating mutual awareness and responsibility. This is intended to lead to: a more sustainable environment and agricultural sector, higher socio-cultural wealth and fair trade throughout the supply chain, and a better quality and more healthy final product. The EOSTA protocol comprises three dimensions, namely farming quality, social quality and food quality protocols. Products are scored on various aspects of each dimension. For example, aspects of farming quality are soil fertility, biodiversity, CO2 emissions and BRC/EurepGap. The social aspects include education, social care, medical care, housing and fair trade. Health, vitality, taste and residue-free are elements of product quality. The different aspects of the three dimensions are aggregated to three scores, which are presented as a bar graph on products (an example is presented below).

Source: www.eosta.com



Box 1 The EOSTA ‘Nature & More’ protocol

In conclusion, an LCA is primarily directed at the environmental aspects of sustainable development; there are few examples in the area of human health that could be related to the people aspect. One explanation why LCA is not very suitable for the people and profit aspects is that these aspects are usually more connected to processes and people than to products. An illustrative example of this is the difficult integration of organic labels (e.g. EKO) and fair-trade labels (e.g. Max Havelaar) (Roosen and van der Hoff, 2001). Another explanation is that the people and profit aspects are often difficult to

quantify at the product level. However, in the scientific development of LCAs in increasing attention is being paid to integrating social aspects into them.

3.1.2 Chain information systems as a link between LCA and CSR

Another product-related development in the netchain is the growing number of chain information systems (CISs). A CIS is defined as a system (usually an ICT system) that is used by chain actors to share information. Currently, most CISs are developed to trace and/or track products throughout a netchain. Tracking provides information about the current position of a product in a chain, while tracing provides information about where products have been and under which circumstances. Food safety and legislation are important drives in the growing attention to CISs and to tracing and tracking. Until now, the most important reasons for companies to pay attention to tracing and tracking is to comply with laws and to prevent or limit damage claims. Beside this defensive use, companies use tracing and tracking in a more positive way, namely to better control the production processes (a shift from tracing to tracking).

While an LCA is used to assess product impacts on the environment and its development is largely based on a scientific background, the development of a CIS is based on practice and gathers large amounts of information about products at various stages of their lifecycle in the netchain. Hence, it is reasonable to look for possible ways to match these two concepts. Research has been conducted by the research institutes LEI and ATO² on how LCAs and CISs could be used to assess and implement sustainable development in netchains. The problem description and research method are schematically shown in Fig. 1.

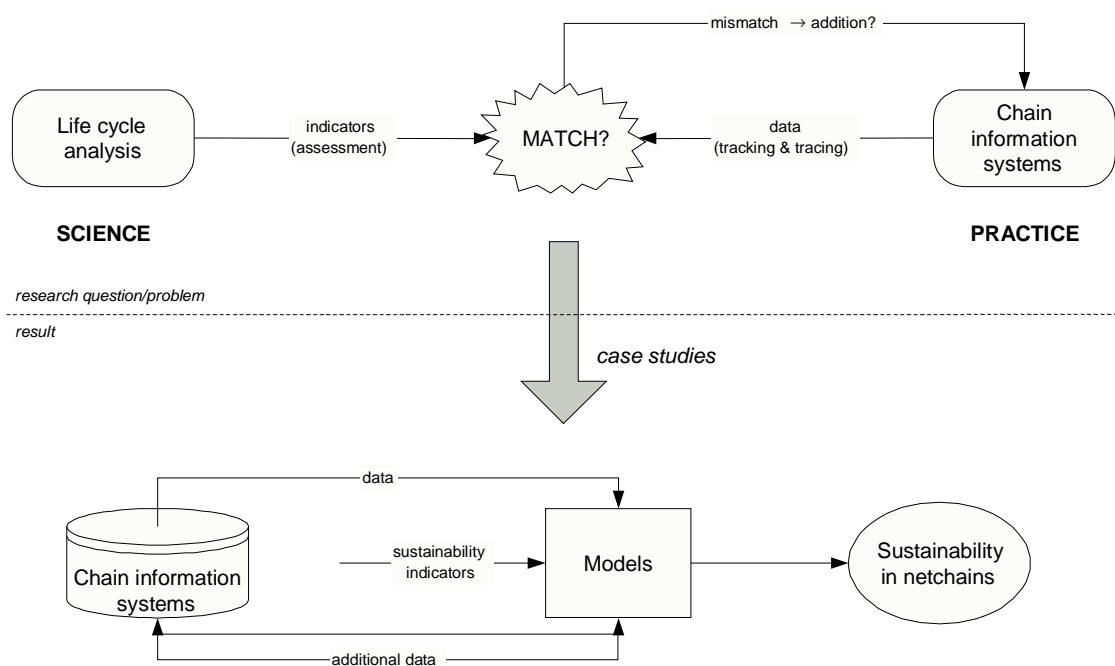


Fig. 1 Schematic representation of research on matching LCAs to CISs

In case studies, two CISs (from both plant and animal production) were investigated to see whether data from the CIS could be matched with LCA sustainability indicators. If they mismatched, an attempt was made to define what data should be added in order to use a specific sustainability indicator. It was concluded that:

² LEI (Agricultural Economics Research Institute) and ATO (Agrotechnological Research Institute) are both research institutes of Wageningen University and Research Center.

- The CISs contained relevant data that could be used for matching sustainability indicators.
- Environmental aspects are the most likely to be matched; there are also possibilities for the profit and people aspects, although this will be more difficult.
- Suitable models and additional data are needed to assess sustainability in the netchain.
- Not all necessary actors in the whole netchain were included, whereas their inclusion is necessary to judge the sustainability of end products.

In general, it can be concluded that CISs, combined with LCA-like techniques, have the potential to play an important role in making CSR transparent in a netchain.

3.1.3 State of the art

Because many products – including food products – have been subject to an LCA, their environmental impact has been assessed. However, not many LCAs are executed completely in accordance with the ISO standards. Mostly, the environmental impacts of products are restricted to the use of resources, climate change, ozone layer depletion, human toxicity, ecotoxicity, water and soil, photochemical pollution, acidification and eutrophication.

Various research projects are aimed at the inclusion of landuse and loss of biodiversity in LCAs. Waste heat, odour, noise, ionic radiation, and casualties are mostly not considered in LCAs. Van Koppen and Meeusen (2001) conclude that if LCAs are used as a tool for sustainability, such other aspects as animal welfare and social justice must be taken into account.

Until now less attention has been paid to the determination of or the possibilities to determine the people and profit aspects of netchain products. Only a few initiatives within agricultural netchains have been found in the literature (see Boxes 1 and 2).

The Environmental Floriculture Project (MilieuProject Sierteelt; MPS) has developed a voluntary system for the assessment of the environmental impact of floricultural companies. The assessment is based on the use of energy and fertilizers, and on the handling of waste. Based on market concerns, these impacts are aggregated to one single score (with a maximum of 100 points per company). Depending on the final scores, a company receives rating A, B, or C, where A is the rating for production with the least environmental impact (the ranges for the various environmental themes depends on the crop cultivated). An MPS-A company is allowed to communicate its A rating at auctions.

MPS recently added a clause to its system for the certification of social aspects. According to this clause, companies must have a social plan. The clause concerns the following elements:

- Labour conditions (e.g. member of trade unions, anti-discrimination, forced labour, minimum age and housing)
- Security and health (e.g. use and storage of pesticides)
- Documentation.

By adding this clause, MPS wants to determine the social impacts of horticultural companies in addition to their environmental impact. The determination as part of the social clause has some similarities with EurepGap.

Source: www.st-mps.nl

Box 2 Illustration of the MPS social clause

3.2 Company-oriented approach

The product-oriented approach can be considered a company-independent method. No attention is paid to differences in environmental and social performance that may exist in practice between the different individual companies that are producing a certain product. Hence, the individual company's unique efforts and competences to realize an above average level of social and environmental performance are not accounted for. In addition, the product-oriented approach suggests that social and environmental impacts can be unambiguously allocated to individual products, whereas in practice a certain flow of inputs and throughputs produces a whole range of outputs, and it remains rather arbitrary how environmental and social impact is distributed among individual products.³ This is especially so for many agrifood production processes, in which by-products and leftovers sometimes make up a large part of the total economic value of production. To start at the company rather than the product level may therefore be a more realistic approach to realize CSR in the netchain. In this way, all companies in a netchain can guarantee and prove that they produce in a socially responsible way.

3.2.1 CSR as a strategic option

However, if one looks at various strategic issues in relation to CSR at company level, one might wonder why companies engage in CSR activity at all. Van der Schans et al. (2002) gathered all kind of motives for CSR and came up with three clusters, namely:

1. CSR as an expression of 'value-driven entrepreneurship' (based on personal norms and values).
2. CSR based on 'clearly-understood self-interest' (risk and reputation management; see also Versteegen and van der Lans, 2003)
3. CSR based on responsibility and dialogue with society ('corporate citizenship').

Given this diversity of motives, it cannot be taken for granted that CSR as a strategic option will be easy to implement, either within companies at different locations or different levels of organizational hierarchy, or across companies in a netchain.

We should also bear in mind that CSR in a netchain is in fact the highest ambition level in the previously-mentioned CSR development model (Keijzers et al., 2002). This means that companies have to reorganize themselves internally before they can realize CSR goals at the netchain level. In this first phase of reorganization, they have to comply with the statutory obligations. In the second phase – control – they must be able to show actual results (e.g. by pilot projects or show cases). In the third phase, CSR must be integrated into their corporate and competitive strategy, which implies cooperation with other parties in the netchain.

Given the fact that CSR at the company level is essentially a context-dependent and voluntary approach, one should not be surprised that there are many different ways in which companies implement their definition of social responsibility, monitor performance and report the results (van der Schans et al. 2002). Over the last couple of years, several initiatives have been undertaken on defining and measuring sustainability (see e.g. GRI, 2000; OECD, 2000; UN, 2001; Meeusen and Ten Pierick, 2002). The Berenschot consultancy office (cited by Meeusen and Ten Pierick, 2002) investigated the annual reports of several Dutch companies in order to see how far CSR had been incorporated. They distinguish four levels ('transparency degrees') concerning the degree of engagement with CSR, namely:

³ LCA allocates environmental impact among products according to their economic value. Thus, when the price of a product changes, its environmental impact assessment changes.

1. Globally engaged – restricted reporting;
2. Globally engaged – broad reporting – actual activities;
3. Engaged – broad reporting – actual activities – results;
4. Engaged – broad reporting – actual activities – results – external verification.

It was concluded that not many companies have reached degree 3 or 4. For many companies it is still a matter of paying lip-service to CSR.

Another issue is how the actual performance of a particular company should be assessed – taking for granted, of course, that the information provided is both comprehensive and accurate. Can an oil and gas producing company claim that it is environmentally responsible if it performs much better than its competitors (in terms of oil spills, casualties at work, community relations, etc.)? Or is it in principle impossible for an energy producing company that relies on depletable resources (which also contribute to CO₂ emissions) to claim to be environmentally responsible? Should we rather compare such company with a hydroelectric or wind-based energy producing company? Related to this is the question what companies should do when they know their environmental and social performance in a certain field (van der Schans in press): should they try to improve upon their own historical performance, should they try to level performance across locations, countries and industries within the company, should they outperform the average of their sector, or should they consider moving to another other field of industry? The development model proposed by Keizers et al. suggests that at the more ambitious levels companies should try to integrate their CSR strategy into their overall business strategy. This suggests that it is impossible, and in fact not necessary, to improve 3P performance in all directions equally and or simultaneously. A company should choose its fields of excellence in CSR in relation to its unique competences and in accordance with its unique evaluation of the external environment in which it operates. Along these lines, Winsemius and Guntram (2002) argue that there are ‘a thousand shades of green’ when a company bases its competitive advantage on a sustainability strategy.

An important aspect in strategic decision-making concerning CSR is of course the relationship and dialogue with stakeholders. The point is that although a company remains ultimately responsible for the decisions it makes with regard to its social and environmental performance, these decisions are made and the results are evaluated in interaction with both societal actors (NGOs) and commercial actors (Backus and van der Schans, 2000). Here we encounter several dilemmas. The problem is that interaction with NGOs and netchain parties is very time-consuming at the level of the individual company, because stakeholders often lack the resources to meaningfully engage in interaction at that level (van der Schans and Backus, 2000). This is especially so in agrifood production chains where individual actors – especially those in primary production – are both small and numerous. In addition, it is not always possible for NGOs or netchain parties to publicly endorse CSR performance on an individual company basis. It is difficult enough for professional staff members of NGOs to make the complex assessment of an individual company’s CSR performance, let alone communicate this to lay persons in their constituency. Netchain parties will be able to endorse an individual company’s CSR performance in the market only if a certain minimum volume is realized, or a certain standardization and predictability has occurred, etc. Even though the concept of CSR implies that firms are individually responsible, some authors argue that in agrifood especially CSR initiatives need to be defined and implemented at the sector level rather than at the individual company level.

3.2.2 State of the art

If we bear in mind that CSR at company level can best be understood in terms of a development model (as discussed above), the question how CSR can be integrated into netchains can be divided into intra-company and extra-company management problems.

A company must establish at which development level it has arrived at (or can be brought to) before it can look for extra-company activities at all. CSR becomes relevant only when a company has done its

'internal homework' (otherwise it will be accused of shifting the burden of CSR on to other chain actors). This is all the more relevant because there is evidence that companies may embrace a CSR strategy at corporate level, but find it difficult to implement the strategy at the business-unit level and indeed throughout the organization down to the work floor (van der Schans, *in press*). There is plenty of literature on and many concepts of business development management mainly focused on individual companies or organizations, and far less knowledge on how companies can be developed to bridge the gap between actual performance and present ambition level, and especially on how to move to a higher CSR ambition level. However, it would be interesting to explore the possibilities of using existing business development models for CSR. One direction is to look at risk management concepts. It would be possible to link up with the external financial reporting cycle, so that not only financial data but also sustainability performance, more broadly defined, are reported. The focus of external reporting could also change from looking back (financial report, social and environmental report) to also looking ahead (strategy statement and report which integrates business strategy with CSR strategy). This would provide the information business analysts in particular and stakeholders in general need to assess a company's risk profile for the future. Another direction is to link up with existing quality management concepts. Whereas external financial reporting is not yet common in the agrifood sector, quality management is widespread and implemented by many companies and also in several netchains. An interesting possibility is to look for starting points in the 'INK management model' of the Dutch Institute for Quality (see www.ink.nl), because the higher ambition levels in that model also leave room for incorporating CSR-related aspects. Joining existing models and systems would also reduce administration activities. The first steps have already been made in van Marrewijk's 'European Corporate Sustainability Framework' (van Marrewijk, to be published (see also www.ecsf.org)).

Next, the extra-company, cooperating activities come in sight. In general, netchain cooperation theories largely deal only with the economic performance of netchains, and not much is known about sustainability performance. Again, it would be interesting to see whether general management theories on cooperation can be used for CSR in netchains. Netchain cooperation has two aspects, namely those of content and process. Content aspects deal with the 'what' questions in relation to netchain cooperation (de Graaf, *pers. comm.*): what aspects are brought into the netchain cooperation, what role should each party play, etc.? The process aspects deal with the 'how' questions in relation to netchain cooperation: how do we start and develop a netchain cooperation, how do we organize the process of working together, etc.? An important issue in relation to the 'what' question of netchain cooperation is the selection of chain cooperation partners. The issue here is to match partners with complementary competences (see Prahalad and Hamel, 1990): which complementary competences are needed for netchain cooperation on CSR? Process aspects concern how to start and develop netchain cooperation. An important issue in relation to this is the development of trust in netchain cooperation (Diederer and Jonkers, 2001). One way to establish such trust is to define, standardize, control and certify company responsibilities and procedures, for example with regard to quality or administrative reliability. Netchain-wide quality performance would thus require all companies in the netchain to adopt these certified administrative procedures. There have also been initiatives to include issues other than food safety in certification schemes; for example, the green label covers environmental issues. This is strictly a product-oriented label, although there are moves to include more and more company-oriented aspects in the certification scheme. This is even more relevant when we adopt a netchain approach. In order to guide the product through the chain, a green-label retail outlet is defined as one where a certain percentage of green-label products are sold. The environmental performance of the retail outlet as such is not (yet) part of its green-label definition (Stichting Milieukeur, *pers. comm.*; van der Schans, *in press*; Zimmerman, *in press*).

Another way to establish trust in netchain cooperation is to explicate and communicate each individual netchain participant's vision and strategy in relation to CSR. It is assumed that when companies share their vision and strategy in relation to CSR with other parties in the netchain, this increases the predictability of their behaviour vis-à-vis the netchain parties, and this will affect the level of trust. If we look at CSR initiatives in practice, however, the focus is usually on measuring, monitoring, reporting

and assessing a company's 3P performance. Much less attention is paid to assessing a company's vision and strategy, or to assessing the quality of the systems and practices that are in place to implement a company's strategy. We can see this in, for example, the Global Reporting Initiative guidelines, which pay hardly any attention to systematically reporting vision and strategy, but focus almost entirely on explicating and standardizing 'performance'. Sustainability performance is but one criterion for selecting a netchain partner for cooperation, however, because from a strategic perspective, companies must look for actors in such a way that cooperation will provide CSR with added value. Thus, more attention should be paid to the way companies have formulated their strategy on CSR. The question is whether we can develop concepts or instruments that can match companies in a netchain, based on a common oriented CSR strategy. Several projects have been conducted in the pig and dairy farming sector to help companies to formulate an integrated CSR strategy, and to use this strategy as a basis for horizontal or vertical cooperation (Beldman et al., 2003).

In conclusion, companies must reach a certain internal level of CSR before they can look for cooperation at the netchain level. If companies want to cooperate, the CSR performance (expressed by indicators) may not be the best parameter to look at. Instead, it would be better to look at matching strategies and the motives for implementing CSR. In both intra- and extra-company CSR development activities, it would be prudent to extend existing business development models.

4 Discussion

This paper has explored and discussed two ways to incorporate CSR in netchains in a transparent way. It is clear that these two approaches – a product-oriented and a company-oriented approach – neither oppose nor exist next to each other, but should be regarded as being in line with each other.

A product-oriented approach can then be considered as one way to obtain transparency: in the ideal case it would be possible to indicate for every product at any time and at any place how and how much it contributes to CSR. This is all the more relevant when the analysis is based on the real data of a certain company in a particular time interval, rather than on sector-wide assessments that abstract from time and place particulars. Although it might be considered a more or less unattainable ideal, the EOSTA and MPS examples showed that practical initiatives are already underway. EOSTA's 'Nature and More' concept is aimed at providing the marketplace with greater transparency related to the quality of organic products sold by EOSTA. Products are classified into one of three categories: organic agricultural methods, socially responsible business practices and comprehensive products analysis, including residue tests, assessment of nutritional values and evaluation of sensory aspects. Results from these examinations are made available to traders and retailers, enabling them to select products based on their own criteria in order to further differentiate themselves in the marketplace. In addition to these quality indicators, grower practices are communicated in a picture story to provide the emotional context consumers are looking for in relation to the food they eat. In the EOSTA concept, both environmental and social sustainability aspects are related to products (Box 1). Thus, the EOSTA approach can be seen as a successful method to determine and to communicate social and environmental sustainability in a product-oriented approach.

The Environmental Floriculture Project (MPS) has been successful in determining sustainability on the level of companies. Based on their use of energy, fertilizers and pesticides, companies receive rating⁴ A, B or C, of which MPS-A is related to the more environment-friendly production of horticultural flowers and plants. The MPS-A rating of a flower or plant producing company is communicated at auctions. The MPS system is valid not only for the Netherlands but also for many other European, South American and African countries. Recently, MPS added a social clause to their certification system. The clause contains requirements concerning, for example, labour conditions and labour circumstances. Although the MPS system is more related to processes, MPS has plans together with various foreign initiatives (the Fair Flowers & Plants label) to communicate both the environmental and

⁴ The requirements for the use of energy, fertilizers and pesticides depend on the type of plant or flower produced in greenhouses.

the social rating of plants and flowers. The Fair Flowers & Plants label indicates that both environmental and social aspects are taken into account during the production of plants and flowers. The requirements and procedures apply to the entire production chain, from production to the trade stage of the lifecycle (Agriholland, 2003).

In the Netherlands, the Milieukeur Foundation (environmental quality foundation) develops environmental certification criteria for, amongst others, food products. These criteria are partly based on LCA research. Recently, also Milieukeur added a social clause, based on the requirements in EUREP-GAP, to some of their certification programmes (Milieukeur, 2003).

Because the examples of EOSTA, MPS and a few other initiatives are merely drops in the ocean of the agrifood complex, it is doubtful whether they could be extended to other products and whether they would be widely supported.

A company-oriented approach seems to be more in sight and more realistic in the short term. However, many companies will have to do a lot of work internally before they can start to look at the netchain level. There is a risk that in a company-oriented approach, a lower transparency degree is reached, because CSR is generally based on self-reported, context-specific performance, and although this performance can be externally verified, there is always the problem of how to assess the performance given the special circumstances of place and time. Transparency could be improved by adopting more generally accepted reporting guidelines, and by jointly developing benchmarks that make it possible to assess the performance of a company in a specific time and place with other companies which operate in similar markets under similar conditions (van der Schans, *in press*).

As it will remain more difficult to apply a product-oriented approach to the people and profit aspects of sustainability, they must first be implemented at the company level.

5 Conclusions and recommendations

CSR is both complex and difficult to implement in netchains in a transparent way. Both the product-oriented and the company-oriented approach should be further explored. It must be borne in mind that CSR at the netchain level is also the most ambitious level. In the development pathway, a start should always be made at a lower level – usually the individual company level – and the product level should always be the final target level. It was also indicated that CSR will always be a matter of continuous improvement.

For practical application a start should be made with a more company-oriented approach, especially regarding the people and profit aspects of sustainability. A more product-oriented approach is already feasible with regard to the ‘planet’ aspects.

The following recommendations can be made for further research:

- It should be further investigated how existing CISs can be used in combination with additional data and models.
- Existing business development models should be further explored and tested in order to see how CSR can be incorporated into them. Quality management models seem to be very suitable for this purpose.
- Based on the two previous points, it should be investigated how existing ICT systems (e.g. tracking and tracing, quality management, environmental management, enterprise resource-planning systems) could be further integrated, leading to the positive side-effect that the burden of administration can be reduced.
- Concepts and instruments should be developed to support companies in defining their CSR strategy in order to be able to look for other companies with a similar strategy.

We hope that this paper will contribute to the further incorporation of CSR into companies and netchains.

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