Social Life Cycle Assessment: looking for consensual indicators

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ABSTRACT

This paper aims to identify relevant social life cycle assessment (SLCA) indicators, based on the study and comparison of well-known and commonly used sustainability standards in the food sector (FLO, ESR, IMO, ETI, UTZ, Rainforest Alliance and Globalgap). The choice of relevant SLCA indicators is based on: (i) their realism and applicability (they must be easily verified by a third party); and (ii) existing consensus among the standards on "minimal requirements" to certify sustainable practices in the food sector. Our main contribution to the debate on the choice of significant and relevant SLCA indicators is to identify areas of consensus between the different standards studied and to question the definition of a socially sustainable product.

Keywords: Social LCA, Methodology, Social standards, indicators, Food sector

1. Introduction

Consumers are increasingly concerned by the conditions of production and trade of the goods they buy, and are ready to pay more for products with such desired attributes as food safety, environmental protection, respect of human and labour rights, animal welfare, etc. In the food industry, private firms have reacted to these new concerns by developing various strategies, including the development of certification systems and labelling.

Underlying such strategies, methodologies have been developed to assess and communicate the impacts of transnational production and trade flows "from the farm to the fork". Among these methodologies, Life Cycle Assessment (LCA) has been enjoying growing popularity over the last decade. Based on a holistic and systemic approach, LCA is a relevant tool to collect information about potential and real impacts of a product over its entire life span (UNEP-SETAC, 2009). Traditionally designed to evaluate environmental impacts, LCA tools have only recently focused on social issues. Both the current development of ethical trade and the growing interweaving of social and environmental issues make it important to question LCAs ability to address social impacts. Several attempts to design a Social Life Cycle Assessment (SLCA) were made, but no consensus has yet been reached.

In a review of different SLCA approaches, Jorgensen *et al.* (2008) reveal two main approaches in the choice and formulation of indicators. In the *top-down* approach, indicators are selected based on international acceptance and representativeness of globally recognized societal values (Dreyer *et al*., 2006; Kruse *et al.*, 2009). The formulation of these macro-level indicators is particularly helpful to avoid modelling too many insignificant impacts (Weidema, 2006). The main problem of this strategy is that the selected indicators are but loosely connected with the real world (Kruse *et al.*, 2009). In an attempt to better take into account local realities, the *bottom-up* approach identifies indicators at the micro-level (Kim and Hur, 2009; Kruse *et al*., 2009), based on industry, stakeholder interests and/or data availability (Kruse *et al.*, 2009). The problems of this approach are a heavy reliance on *ad hoc* indicators and high site specificity.

Another issue is related to the measure and aggregation of indicators across life cycles to allow a comparison of supply chains. Norris (2006) develops an approach to assess the social attributes of a supply chain – the Life Cycle Attribute Assessment (LCAA). LCAA is a quantitative methodology based on practical reporting and aggregation of attributes across a life

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cycle analysis. Instead of calculating quantitative impacts, LCAA provides performance in a relative way within the supply chain (Andrews *et al.*, 2009). According to Norris, process attributes can be whether or not a company is certified as following best management practices, as prohibiting child labour, etc. Andrews *et al.* (2009) apply this approach to the Quebec greenhouse tomato supply chain. The authors focus on local labour and select seven indicators, including: workplace insurance for employees, medical insurance for employees, wage above one or two times the minimum wage, annual health and safety incidence rate published by the company, etc. The authors consider these indicators as analogous to midpoint indicators in environmental LCA and consider them as good proxies of improved management of community impacts. However, Andrews *et al.*(2009) highlight the need of further research on the definition of indicators. Indeed, the choice of indicators has many implications for the analysis of the product system's performance. Academics in the field of LCAA underline the need to emphasize the connection with indicators in the field of certifications.

Drawing on this proposition, we contribute to the debate on the definition of relevant indicators by analyzing well-known food sector standards. To do so, we compare existing indicators belonging to: fair trade standards (FLO, ESR and IMO); private ethical standards (ETI); and ethical indicators from more general sustainability standards (Rain Forest Alliance and Utz) and one private standard (GlobalGap). Many of these standards are developed to regulate international trade flows of food products between developed and developing countries. As a result, many indicators bear the mark of this peculiar focus. Still, we think that the broad spectrum of indicators used by standards is little explored by the literature on LCA, and may be useful to define a socially sustainable product through consensual indicators.

This paper is organized as follows. First we describe the standards chosen and the method we use for comparison. We then present the results of our analysis. Finally we discuss the results by comparing them to the propositions found in the current literature.

2. Methods

Within the SLCA literature, there are two ways to qualify the hierarchical organization of indicators: (1) drawing on environmental LCA, some authors such as Weidema (2006) use the hierarchical organization based on *endpoint, midpoint and inventory indicators*; (2) UNEP SETAC (2009) identifies *impact categories, subcategories and inventory indicators*. A useful parallel is found at the international level where standards are negotiated: stakeholders express their codes of conduct in terms of *principles, criteria and indicators*. We assume that this hierarchical organization is comparable with that used in the LCA literature. This will facilitate our analysis and discussion within the debate on the definition of indicators. In addition, by using existing standards, we get rid of the problem of measure since the standards go together with checklists for certification bodies to assess stakeholder compliance. As a consequence, they already focus on easily available data that can be estimated at the inventory level and for which criteria may be relevant to assess.

In our analysis, we use seven sustainability standards that are currently used in the food sector. For the sake of comparability, we use the codes of conducts for the certification of coffee, which is a common product for all the selected standards. The Fairtrade labelling Organisation (FLO) is a group of international fair trade organizations created in 1997. FLO develops and reviews fair trade standards aimed at supporting small and vulnerable farmers in developing ountries. Ecocert is a French certification body that created its own fair trade standard in 2007, called *Echanges Equitables, Solidaires et Responsables (*referred to as ESR hereafter). IMO is a Swiss certification body that launched in 2006 its own social and fair-trade certification called *Fair for Life*. All three standards seek to improve the livelihoods of small producers and plantation wage workers. We use in this research the codes of conduct

of plantations, since they give more indicators for wage workers. The Ethical Trading Initiative (ETI) is an alliance of companies, trade unions and voluntary organisations created in 1998. ETI works to improve the lives of workers across the globe. Global Good Agricultural Practices (GG) was created in 1997 by European retailers. This standard promotes good agricultural practices and improved farm management techniques. Rainforest Alliance (RA) is an international NGO created in 1987 to fight tropical deforestation. Its standard does not prohibit the use of agrochemicals but requires integrated pest management, the maintenance of shade cover and/or the restoration of native forest reserves. It also expresses concerns for the rights and welfare of workers and the interests of local communities. Utz certified is an independent multi-stakeholder initiative created in 1997 to promote responsible production and sourcing practices. Its standard covers good agricultural practices in coffee production and worker welfare, including access to healthcare and education. The last three standards are not socially oriented but have developed a social section in their codes of conducts. All the standards, analyzed here, claim to have all representative committee to negotiate and decide the certification design (including producer's organizations). The documents used are listed in the references.

Firstly, we identify the set of common criteria (equivalent to midpoints or categories) present in each standard according to a series of principles (equivalent to endpoints or categories) stated in their codes of conduct. We then compare these standards, based on their score for each criterion. The score is obtained by adding the number of compulsory indicators for a given criterion. It is equal to two if the indicator is compulsory and is null otherwise. The scores are then expressed as the percentage of the total score of the given standard. We show the comparison results in a table. Secondly, we identify areas of consensus among the indicators that we call *minimum social requirements to certify sustainable practices in the food sector*. To do so, we sum the number of standards where a given indicator is compulsory. Given that we selected seven standards and that the score of an indicator is equal to two when it is compulsory, the maximum total score obtained for an indicator (all standards included) is 14 and can be considered as a major consensual indicator. To represent these results, we use spider web graphs, where axes are the indicator scores.

3. Results

The three criteria with the largest number of indicator scores are *Health, Safety and Hygiene* (213), followed by *Prohibited labour Employment Practices* (197) and *Conditions of Employment* (106). The results show major differences on standard priorities in terms of social welfare (Table 1). Globalgap focuses only on the Health, Safety and Hygiene criteria. Rainforest Alliance clear focuses on Prohibited labour Employment Practices. The other standards are more diversified. The less used criteria are: Discrimination, Social Benefits and Right to Association.

Insofar the standards do not adopt all identified criteria (*e.g.* Globalgap only focuses on one criterion), there is no consensus about what indicators represent *a minimum social requirement* (Figure 1). Despite big differences between the studied standards that we will not detail here – *e.g.* in their objectives, scope, style, ownership, promoters, or in the way of ensuring compliance –, there are areas of agreement that we identify as minor consensual indicators.

Within the *Health, Safety and Hygiene* criterion, we identify three consensual indicators: "safety equipments" "risk management policy" and "access to drinking water". Concerning the *Conditions of Employment*, the only indicator retained is "compliance with the national legislation on minimum legal salary". Within the *Working Hours* criterion, the only indicator retained is "number of extra hours". The *Discrimination* criterion shows "no discrimination on salary level" as a consensus. Within the *Prohibited Labour Employment Practices*, we

identify five nearly consensual indicators: “prohibition of child labour” “prohibition of forced labour” “no corporal punishment” “no retain legal document by the employer” and “young workers (in general between 15 years and 18 years) are not allowed to be engaged in inappropriate work (such as, hazardous work, night work…)”. Finally, within the criteria *Right to Association* and *Social Benefit*, there are no consensuses at all.

The studied standards borrow several criteria and indicators to international agreements such as the *Universal Declaration of Human Rights* or the *International Labour Organization* as seen above. Nevertheless, some of these indicators – *e.g.* “freedom of association (conv. 138)” or “collective bargaining (conv. 98)” –, are not considered as priorities by the standards. As the UNEP guideline for SLCA (2009) highlights, international conventions often represent a minimum to attain. Although in many developed countries, the legislation already covers many principles of these international instruments and non-compliance represents a criminal offence, in developing countries this might not be the case. This explains why sustainability standards tend to focus on these minimum levels. Voluntary standards being designed “to avoid blame and shame”, they focus on worker health and safety, on extreme labour practices (child labour, forced labour, corporal punishment) and on compliance with national legislation on minimum legal salaries. Although these standards as unsatisfactory for defining a socially sustainable product, they are certainly more appropriate in the context of developing countries. For instance, the indicators proposed by Andrews *et al.* (2009) – *e.g.* workplace insurance and basic medical insurance for employees – may be not relevant in many developing countries where this kind of insurance does not exist. Additional research is probably needed to include the perception of the main stakeholders, and therefore to use indicators that are meaningful for them in a specific context.

Table 1: Comparison of criteria scores among food standards

	Flo	**ESR**	**IMO**	**ETI**	**UTZ**	**RA**	**GG**	**∑**
Health, Safety & Hygiene	20	24	18	14	23	14	**100**	**213**
Conditions of employment	20	20	26	17	9	14	0	**106**
Working Hours	18	4	16	17	20	0	0	75
Social Benefits	5	0	5	3	11	0	0	26
Discrimination	10	8	5	10	6	0	0	39
Prohibited Labor Employment Practices	15	36	24	28	23	**71**	0	**197**
Right to Association	13	8	5	10	9	0	0	45
TOTAL	**100**	**100**	**100**	**100**	**100**	**100**	**100**	

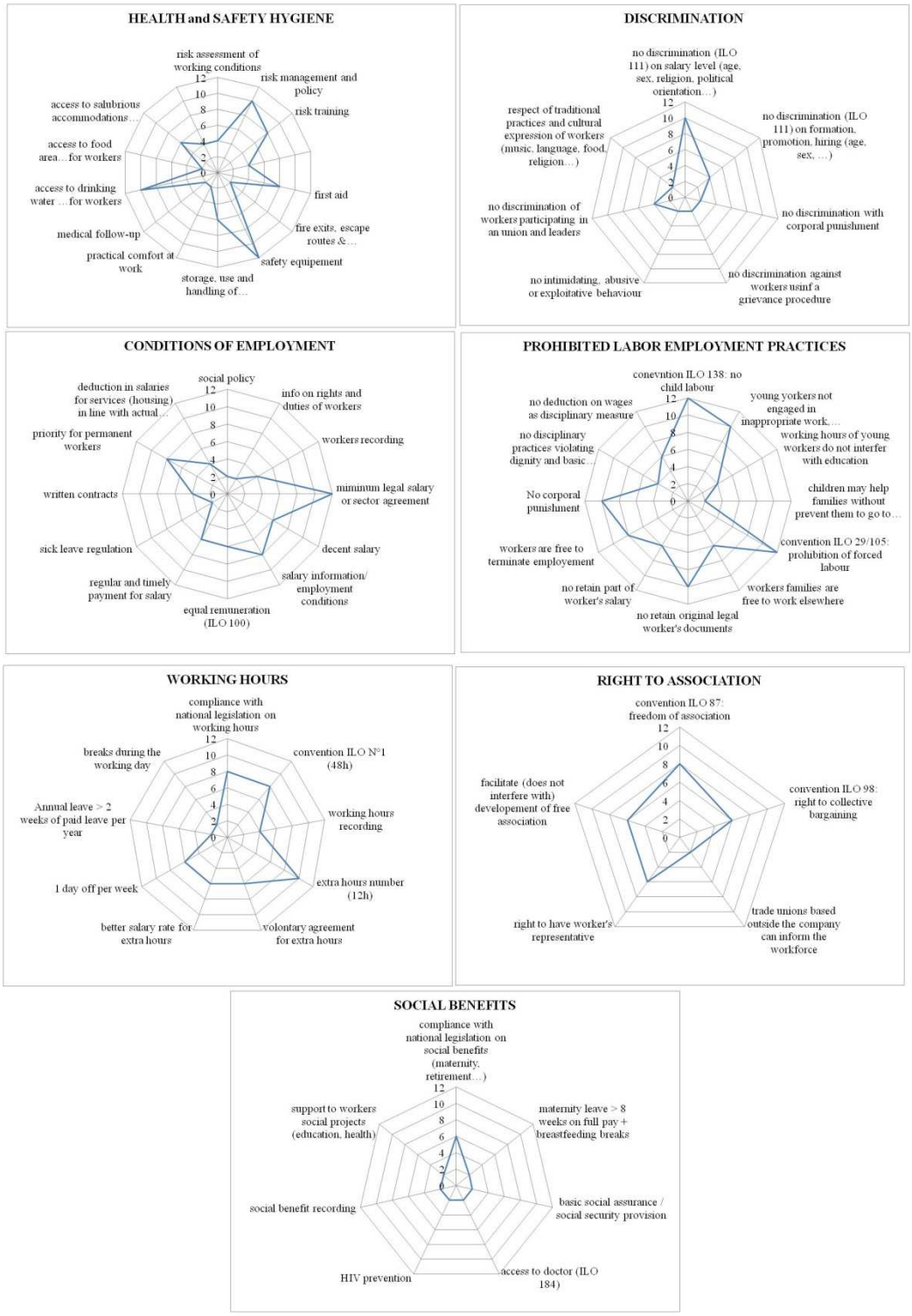

Figure 1: Identification of consensual social indicators among food standards

4. Conclusion

Despite growing consumer concerns about the social dimension of sustainable development, no consensus has yet been reached concerning the identification of appropriate indicators. This paper addresses this issue by studying the indicators used by seven sustainability standards from the food sector. Our hypothesis was that they may help us identify suitable social criteria. This method solves the problem of availability and measurability of the chosen criteria, since these standards are easily verified by third party certifiers. We analyse common criteria and investigate areas of consensus around indicators that we interpret as *minimal requirements* in the certified sustainable food sector. Results show that there is little consensus among the indicators and that the standards seem to be much more oriented towards "no blame no shame" strategies than towards social sustainability. Indeed, the criteria that encompass most consensual indicators are: *Health, Safety and Hygiene* (3) and *Prohibited Labour Employment Practices* (5). This may seem surprising since many of these standards claim to have been negotiated together with the stakeholders (namely producers and producer's organizations). In the end, our results question the ability of sustainability standards to be a basis for defining socially sustainable products. Nevertheless, these instruments have the advantage of focusing on indicators connected with local realities.

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