

How to assess the social value of a steel product?

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1. Context and scope

Sustainable development (SD) has been on the rise on governments and firms' agendas since the mid-1970s. At first, they have paid more attention to environmental issues (at that time, social risks were more under the control of welfare states and private insurances) but the development of economic globalisation have triggered some concerns on the social - or societal¹ - pillar of SD. As a consequence, governments have launched programs (Agenda 21, SNDD...), NGOs have grown (Oxfam, HRW...), while corporations have begun to claim they were socially responsible or were able to improve their CSR by themselves; however, ongoing discussions also show that their effective implementation still raises some issues [Capron, Quairel-Lanoizelée: 2007]. ArcelorMittal² illustrates well this trend by publishing its first CSR report in 2007 and assuming that the expectations of society for corporations to be accountable and part of the solution is growing considering the current global trends that are shaping the world - the balance of the global economy is shifting, water and energy systems are under pressure and the world's resources are squeezed as never before [ArcelorMittal: 2013].

Such efforts made by corporations raise several criticisms and comments either to object to them or to improve them. This research project addresses the second issue, in order to enlighten the company about decision-making processes and making them more efficient and relevant, while testing the limits of the technical tools of SD management (at the level of a company or a sector). The purpose of this contribution consists therefore in providing a response to ArcelorMittal's need for assessing its social contribution to society, according to its current CSR strategy and to the SOVAMAT initiative it has launched in 2005³: beyond the rising constraints and challenges faced

1 Hereunder we use the term 'social' in its broadest meaning, including both professional relationships within corporations and relationship beyond the field of the economy (gender inequalities, happiness...).

2 ArcelorMittal is the world's leading steel and mining company, operating in more than 60 countries. Steel products are integrated in all major goods of the western way of life (automotive, building, food packaging...).

3 SOVAMAT ("Social value of Materials")'s overarching objectives are to identify the role of structural materials (steel, concrete, cardboard, wood, etc) in a post-carbon society and to prepare the stakeholders of the materials value chains for the subsequent changes to come.

by the society, it must deal with the paradox of Condorcet who has demonstrated that no decision can combine everyone's preferences.

Identifying the focal and priority points for progress and the relevant objectives for each of these points, is a twofold issue (as with any governmental action or industrial quality strategy [Chanteau: 2011]): ethical relevance on the one hand, and efficiency on the other. Given the fact that such issues are intertwined, it leads us to test a systemic methodology : i) the focus group methodology, taking into account the scientific literature regarding stakeholders theory and multi-stakeholders CSR practices; ii) linked to the Social Life Cycle Assessment (SLCA) methodology, which takes into account the globalization of the value chains.

LCA has indeed done much to enforce a transverse approach that cuts across business boundaries throughout the whole life cycle of a product and the stages of its supply chain [UNEP: 2011]. But whereas early work on LCA has been mainly focused on assessing environmental impacts of products, enabling the measurement of their ecological footprint⁴, which is by definition always expressed in a negative way – because it is today not possible to produce and develop without polluting the environment - it is challenging to also assess the social contributions of an industry, which are both negative and positive [Birat et al: 2008].

This comprehensive assessment of impacts generated by the production of steel and the use of steel products might provide necessary knowledge to decision-makers to tackle unavoidable trade-offs between pros and cons, synchronic and diachronic approaches, micro and macro levels of analysis, etc. Since this research project has been launched in June 2014, this paper is basically programmatic and will contribute to ongoing work on the significance and the limits of SLCA methodologies [Macombe (dir): 2013].

2. Main text

2.1 Defining the objectives of the method, a matter of evolving concepts: towards the assessment of social footprint or social value of a product?

As pointed by Parent & al [2010], the result of a social assessment varies, depending on the SLCA approach used. It is therefore essential to define exactly what the main objectives of the present research project are, which will determine which methodology will be developed to meet such objectives.

Therefore, some key preliminary questions needs to be, if not resolved yet, at least formulated.

⁴ EC – JRC & IES [2011] *Product environmental footprint guide*, Italy

2.1.1 Assessing the “social footprint” of a product

The SLCA UNEP methodological Guidelines [SETAC: 2009] are based on the ISO 14040 standard regarding environmental LCA. LCA is used as a tool enabling the assessment of ecological footprint of products⁴. In order to achieve this goal, the concept of “functional unit” is used so that comparison with another product can be established, or comparison with a previous LCA conducted on the same product.

“To imprint” literally means “to mark deeply something”. While it is clear that “something” refers to the bio-physical environment in a LCA and though it is sometimes possible to aggregate multiple causes (e.g. the gas emissions in the worldwide atmosphere), the LCA easily reaches its limits when two or more dimensions are tackled at the same time (e.g.: biodiversity and energy consumption). The existing literature [Ekener Petersen, 2013] has proved it’s even harder to define it in a SLCA especially when “something” is such as multidimensional and ever evolving as within and between various “societies”. However, the qualifying term “deeply” could tend to define more precisely the scope of “something” and might refer to the concept of “materiality”, whose significance has increased in the field of CSR reporting. Materiality assessment is in fact often used to set goals, choose between new business models, and determine the most important areas of improvement.

Crutzen [2009] defined the concept of social footprint as “measurable parameter(s) enabling the assessment of progress towards the achievement of a social goal”, which implies to define “social goal”. She detailed that it is the “contribution to social conditions improvement on a regional or global scale”. But is the notion of ‘improvement’ as universal as Crutzen’s definition implies? ‘Who’ would be entitled to state it?

UNEP, as a global and inter-governmental body, has provided an answer by introducing the concept of stakeholders’ ‘wellbeing’ as constituting one of the ultimate social consequences [SETAC: 2009, p.43], implying that there could be others that will need to be identified and/or adapted. The concept of «well-being» is in itself still a key issue of research and policy (see OECD) in order to define the scope of what is the «social quality» of a product.

This proves that the definition of « social » aspects clearly depends on the point of view of the person/actor defining it. Any attempt for defining this dimension would provide a simplified vision and an adopted position regarding the reality (since all impacts can’t be considered, and also because it is necessary to focus on the causal relationships for a specific impact). Designing⁵ the definition of the objectives and the scope of the research project will therefore be one of the main challenges of our research project in order to focus the assessment on the relevant features that matter for steel products and production⁶.

⁴ By analogy with the methodology developed by Ostrom [Ostrom, Basurto : 2011]. For a synthetic outlook, see Chanteau & Labrousse [2013].

⁶ And by doing so, taking the risk to choose parameters that are specific to the activities of a company.

Besides, there is today a gap in the literature regarding the concept of “social footprint”, creating a doubt regarding the fact that SLCA is a relevant tool to assess the social footprint of a product. This has given way to other approaches (like the ‘social value’ approach: see below 2.1.2) or at least to the idea that the translation of the LCA methodology to SLCA is not sufficient.

2.1.2 Assessing the “social value” of a product

In its 2013 CSR report, ArcelorMittal attempts to illustrate how it contributes to the world through its products, by creating value [ArcelorMittal: 2013]. The creation of value for its stakeholders has been a key concept for its business strategy. It should consist in creating value for all its stakeholders affected by steelmaking process and steel products.

This contribution is nowadays difficult to measure, not only because of methodological problems (data collection, quantitative vs qualitative data, etc) but also because measuring “something” implies to define the reference/baseline enabling to conclude that steel products are at the origin of a change in comparison to this reference, change that can be either positive or negative. The results of this research project and discussions regarding SLCA methodologies will therefore be heuristic.

2.2. Defining a method for qualifying the social impact parameters to be selected

The challenge consists in defining the quality of the product that will be assessed. It is therefore necessary to combine the relevance of the approach (which kind of ‘social quality’) and the feasibility (how to measure the social quality and to identify social criteria) and how to sustain it throughout time [Chanteau: 2011].

The method leading to the production of indicators has to determine:

- the selected criteria (and the reasons underlying their selection);
- the reliability of the value assigned to those criteria (means of gathering information, margins of error, etc.);
- the conditions for weighting criteria, and methods of aggregation;
- the conditions for integrating the impacts throughout the value chain and life cycle of the product.

2.2.1 Based on a literature survey

A survey will be conducted on the concept of “wellbeing” presented here above in order to draw operational options for the definition of parameters required to characterize a ‘social quality’. It also covers the field of the ‘theory of value’ in economics which encompasses a range of approaches to better understand how, why and to what degree people value ‘things’. The current study will therefore provide a review on the different conceptions of ‘social quality’, including (but not comprehensive):

- compliance with core ILO conventions that define the concept of «decent work» (reference used for example for joining the UN Global Compact, for SA8000...);
- measurement of subjective well-being developed by the OECD in the 1990s;
- the framework of EUROSTAT indicators for the European Union sustainable development strategy (SDS);
- World Bank development indicators databases including the Millennium Development Goals (but not integrated in CSR management systems to date);
- local or national versions of human development indicators as developed by UNDP since 1990 (HDI, GDI, IP1, IP2...);
- different types of sustainable scorecards and other indicators of human development and wellbeing [Gadrey, Jany-Catrice: 2012; Van de Klerck: 2009].

This research project will also establish a survey of the literature and feedback on SLCA, still incomplete, in order to adapt them to the purpose of the present study: the attribute SLCA, the impact pathway approach and the SLCA based on the capabilities approach.

2.2.2. Based on a participatory approach

Literature review solely will not be sufficient for defining concepts and parameters. Each field of natural sciences provides quantitative answers on its specific subject study. The social dimension is, on the opposite, an aggregate assessment. The social representation of the product will be determined by the decision-maker (consumer, government, social responsibility investments funds ...), not only by producers or suppliers themselves or by some external experts [Trebeck: 2014]. The assessment of the social impacts of a product needs to assess a social quality based on this social representation.

In order to deal with this issue, the work will be built on the focus groups methodology [Kitzinger: 1994, 1995] already tested for institutions in the aluminium industry. As mentioned hereabove, the concept of “social impact” is not unequivocal nor those of ‘wellbeing’, ‘social justice’ or ‘wealth’. The use of representative panels made up of internal and external stakeholders groups will reduce the existing risk in terms of legitimacy and credibility of the approach in case of unilateral choice. By involving stakeholders in the construction of these indicators, the use of these representative panels offers a method less likely to suffer criticism given the social issue addressed by the research project, and in the meantime, enables ArcelorMittal’s insiders to also take a position on their preferences, as any other social group. This work will be launched as an ‘action research’ on a representative industrial site of AM producing final products and will be developed in two stages: development of a scope and development of a short list of indicators.

2.3. A two-step case study for integrating the whole life cycle of the product

The integration of impacts throughout the whole value chain of the product, from its primary components, represents a key challenge within the frame of social impact assessment. It constitutes in fact an important empirical problem for data collection and homogenization, as the upstream and downstream of the product involve legally independent companies in different countries (around 60 for ArcelorMittal). Few existing case studies in literature have in fact analyzed the use phase in a life cycle based approach, and this research project would be innovative in such an area [Ekener Petersen, 2013].

2.3.1 Case study - step 1

Given the current state of knowledge and the complexity of production systems, it is first more realistic to limit the assessment on the upstream segment of the value chain, ranging from mining to a steel coil, especially due to the diversity of products processed and manufactured from a coil, and the diversity of its co-products. In addition to the expected result, it allows to test the method on a first perimeter.

This first step will be conducted on an identified site and according to the capabilities approach [Garrabé, Feschet: 2013]. But, due to time constraints, it would be applied to a single indicator which could be the level of income since its contribution to wellbeing is well established in the literature surveys and since data prove in principle to be available. The technical and operational feasibility of the approach will therefore be assessed, especially by identifying all the methodological difficulties that may occur in the implementation of the method.

2.3.2 Case study – step 2

This first step as well as the tasks described in paragraph 2 should thus allow the testing of the comprehensive assessment of a steel end product on its whole value chain and life-cycle, which is far more complex because of the multiplicity of uses and modes of use. A specific steel product will be selected in one of the following areas of activity: packaging, auto, or construction.

The aim of this 2-step approach is to explore and to maximize the potential of elaborating a comprehensive assessment technique of social impacts based on a life cycle and value chain approach.

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