

# The social footprint – A practical approach to comprehensive and consistent social LCA

Bo Pedersen Weidema

Aalborg University, Danish Centre for Environmental Assessment,  
Skibbrogade 5, 1., 9000 Aalborg, Denmark  
E-mail contact: bow@lca-net.com

---

## 1. Introduction

The term “social” is here understood as it is used in welfare economics, to signify an accounting that encompasses the entire societal economy, as in “social costs”, combining private costs and externalities. The “social footprint” is thus to be understood as the result of a complete “life cycle sustainability assessment” (LCSA).

The practicality of social footprinting is currently hampered by a lack of focus on materiality of the impacts, an excessive data requirement, and a lack of understanding of the main impact pathways (cause-effect relationships) for social and economic impacts.

To overcome these barriers, a practical approach to accounting and assessment is proposed, without loss of comprehensiveness.

## 2. A streamlined method for data collection and impact assessment

A practical, “streamlined” approach to accounting and assessment of social footprints is proposed, without loss of comprehensiveness. The approach combines a top-down approach to focus the data collection effort on impact categories and inventory data of high importance with a streamlined impact assessment that limits the inventory data requirement and the need for detailed impact pathway descriptions, by focusing on the macro-scale impacts.

### 2.1. Focussing on the important impact categories and activities

While a social footprint should be based on a complete inventory and a coverage of impact categories that in its outset should be both exhaustive and non-overlapping, this does not mean that all impacts need to be recorded in equal detail.

By applying a top-down approach, in which inventory data for an exhaustive set of impact categories are estimated at the global level [1], and assessed by expressing the impact in comparable (monetary) units, it is possible to focus on the relatively few impacts that dominate in global importance, rather than spending time and efforts on obtaining data for a large number of overlapping and largely irrelevant indicators.

Since all social and economic impacts are directly or indirectly linked to either the working time or the value added of the productive activities, the collection of specific data can be streamlined by focussing only on processes with *high value added* or *high number of work-hours*. Before high quality data are available on these activities, it is meaningless to collect better quality data on activities that contribute less to the overall impact.

### 2.2. Streamlined impact assessment of non-production-specific impacts

Although there are many different social and economic impact pathways, it is possible to streamline the impact assessment when several impact pathways have the same endpoint, and the total impact on this endpoint can be measured independently from the contribution from each impact pathway. In this situation, detailed inventory and impact pathway descriptions may turn out to be unnecessary. In practice, this is situation is encountered for a group of impacts that have very high overall importance, namely those that can be classified as non-production-specific impacts, i.e social and economic impacts that are purely location specific and unrelated to company-specific actions and choice of technology, which is in stark contrast to most biophysical impacts.

One such impact is the income redistribution impact. Most productive activities imply a transfer of income between societal groups. The income levels of the donor and recipient groups are typically well known or easy to estimate, and the distributional impact is then calculated by weighting the spending and income by the relative marginal utility of income for these two groups, thus determining the increase (or loss) in utility

caused by the transfer. The income redistribution impact is typically positive (i.e. beneficial) for export-oriented activities of low-income countries.

However, the benefits from the income redistribution impact is typically more than offset by the cost of other non-production-specific impacts, which can be grouped under the heading of “impacts of bad governance”. These impacts are either related to loss of productivity or to loss of well-being, or to both. If the productivity impacts were internalised by the establishment of good governance, this would lead either to higher wages or to higher taxes, until the average expenditure per labour-year would equal the potential GDP/person under good governance. Thus, productivity impacts can be measured as the difference between the actual and the potential labour costs, expressed in utility-weighted monetary units. Non-production-specific well-being impacts can be measured as the number of people affected \* severity \* duration of impact, expressed in Quality Adjusted Life Years (QALY), which may be monetarised. For both productivity and well-being impacts a co-responsibility exists for local enterprises because they benefit from the concurrent low internal costs of labour. Since these impacts are typically country-specific they can be measured at the national level, and distributed over the enterprises in proportion to their value added.

### **3. Discussion and conclusions**

Locating an enterprise in an area with bad governance has both costs and benefits, as described above, and the co-responsibility costs typically outweigh the social benefits of redistributing income, which could be seen as an argument for not relocating enterprises to countries with bad governance. However, this argument is more than outweighed by the potential for positive action, which is by far the largest in countries with bad governance. Imagine that an enterprise that accepts the same overall costs in a poor country with bad governance as in a rich country with good governance. For the amount of money spent, it is possible to change the productivity and well-being in the poor country much more than it will ever be possible in the rich country, thus providing a compelling argument for placing activities in countries with bad governance, provided that it allows the enterprise to follow an active strategy to create shared value.

The beneficial impacts on well-being from actions that remediate bad governance in a country, as well as negative impacts that depend on company-specific actions and choice of technology (examples: occupational health/injuries; land use related impacts such as landscape heritage; some cultural impacts) can also be measured in QALY/worker-hour, using the estimation procedure suggested in [1]. If costs of internalisation/compensation are lower than the damage cost (example: labour rights), these costs may be used instead. Only in a few cases when impacts go beyond the immediately affected population (e.g. heritage values) the additional impact on the existence value needs to be measured by willingness to pay as expressed in choice experiments [2]. However, first estimates point to such impacts as being of minor overall importance.

In conclusion, the most important social and economic impacts can be assessed from a relatively limited number of readily available generic data, allowing comprehensive assessments of social footprints of products at much lower efforts than seen so far.

### **4. References**

- [1] Weidema B P. 2006. The integration of economic and social aspects in life cycle impact assessment. *International Journal of Life Cycle Assessment* 11(1):89-96.
- [2] Pizzol M, Weidema B P, Brandão M, Osset P. 2014. Monetary valuation in Life Cycle Assessment: a review. *Journal of Cleaner Production*, available online 19, September 2014.