Reviewer's report

**Title:** Integrating occupational health in life cycle assessment: introducing the work environment disability-adjusted life year

**Version:** 2  **Date:** 2 December 2012

**Reviewer:** Andrew Watterson

Reviewer's report:

This is a very clear, well argued and well presented paper on an important and neglected topic that is new and well defined. The methods used are appropriate and in several respects their application is novel and generally well described. There is substantial detail provided to replicate the work. The framework offered is generally sound and controls well for most of the challenges raised by the proposed analysis. The types of data to be generated by the method proposed would usually be sound and well-controlled. Where in some places inevitably they would not be, because of how data are externally collected, the problems are recognised and addressed by the authors. This issue, however, is flagged and commented on elsewhere in the review. The manuscript adheres to the relevant standards for reporting and data deposition. The discussion and conclusions are well balanced and generally but not always adequately referenced and supported by the data. The title does not accurately describe the paper and there is a small problem with the abstract: again matters flagged elsewhere in the review. The writing is acceptable and has been generally carefully proof read.

Minor essential revisions.

1. The title of the paper does not reflect the content. The paper is essentially a study or case study of US data although the methods proposed have great value elsewhere in the world. The use of non-US data is touched upon in the discussion, The authors should therefore either amend their title or, and I imagine this will be quite time consuming, add further text and references on non-USA data sets that provide injury and illness data.

2. The paper rightly refers to the limited consideration of occupation in LCAs. However, the abstract indicates there has been no consideration of OH in LCAs. The abstract should be corrected.

3. Around p13, there is discussion of the multiplier effect that is then commented on in the discussion section on p33. This discussion should be expanded a little and more fully referenced either in the body of the paper or in the section around p33 perhaps with some references on the strengths and weaknesses of the professional judgements that are made to adjust for known limits of injury and disease data collected and which cells will be more or less accurate.

4. Around p20, there is discussion of the problems of picking up sequelae in the calculations. The illustrations provided in the text have in places been truncated
as the supplementary table provided in the appendix shows. For example, the full table cites neurological problems possibly attached to fractures. Such information should probably be listed in the text. Additionally the sequelae for respiratory diseases and stress look distinctly narrow and could either be expanded or discussed further to illustrate problems with this method.

5. Finally the discussion touches on the LCAs but is surprisingly brief. Perhaps the authors could comment further on this and expand a little. For instance data collection and accuracy of estimates of diseases and injuries in the cycle could vary widely - mineral and other raw material extraction data for injury and illnesses from developing countries would often be very poor? And migrant and precarious labour in other parts of a LCA could often vanish off the injury and disease recording radar?

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare I have no competing interests