Supply chain expectations for tool to calculate sustainability of white fish products at a batch level

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Report

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Summary:
The aim of the EU project 'Whitefish' is to give the white fish sector the possibility to market their products with information regarding the sustainability impact of the batch to which each specific fish belongs. The Batch Based Calculations of Sustainability Impact (BCSI) tool should be easy to use in terms of input of data, easy to interpret, available through web applications and offer customization options. The BCSI should be detailed enough to be reliable, simple enough for ease of use and general scientific acceptance is desirable.

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1   Introduction

The aim of the EU project 'Whitefish' is to give the white fish sector the possibility to market the products with information regarding the sustainability impact of the batch to which each specific fish belongs. A batch is referred to as the smallest traceable unit throughout the fishery chain. This assessment of sustainability will be carried out using a method called 'Batch Based Calculations of Sustainability Impact' (BCSI).

In order to create the BCSI in the most appropriate manner for the use of the industry, the input of the small and medium sized enterprises-associations/groupings (SME-AGs) involved in the Whitefish project is required. The purpose of this input is to identify what the SME-AGs wish to get out of the BCSI, what it should contain, how detailed it should be, how it should be made available and for whom. It should be kept in mind when considering the requirement specification that the BSCI will have to include components from each of the three pillars of sustainability, as shown in the figure below.
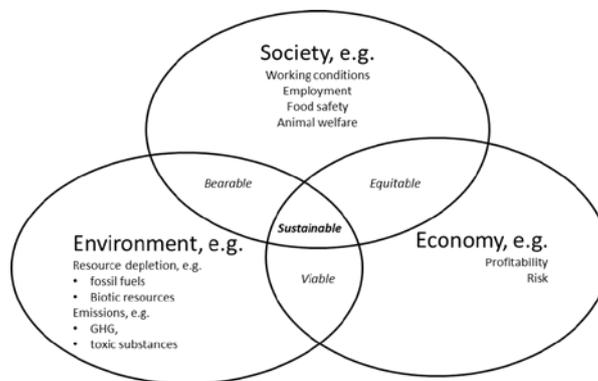

Figure 1   The three pillars of sustainability modified from Hunkeler & Rebitzer (2005), Kloepffer (2008) and Remmen et al., (2007)

When assessing sustainability it is important to include information from what has been called the triple bottom line or the three pillars of sustainability; Society, Economy and Environment, see Figure 1 (Hunkeler & Rebitzer, 2005; Kloepffer, 2008; Remmen *et al.,* 2007), taking into account social, environmental and economic aspects. The BCSI being created in this project aims to develop a similar comprehensive approach. The conventional method of calculating sustainability impacts in food chains is to focus only on a specific part of the contributing factors, namely the environmental aspect. Life Cycle Assessment (LCA) is going to be a key component in the BCSI. LCA is a widely used method to determine the environmental impact of a product by listing all resources used over the entire life cycle and assigning related emissions and impacts to the appropriate environmental impact categories (i.e. provides measurable results for the environmental pillar shown in Figure 1). The first design of the BCSI will be based on the application of LCA, which will be discussed below.

LCA can be applied to any product. Figure 2 demonstrates how an LCA is applied for a consumer product i.e. inputs and outputs from different stages in a products lifecycle are considered and given value according to accepted science based methodology.
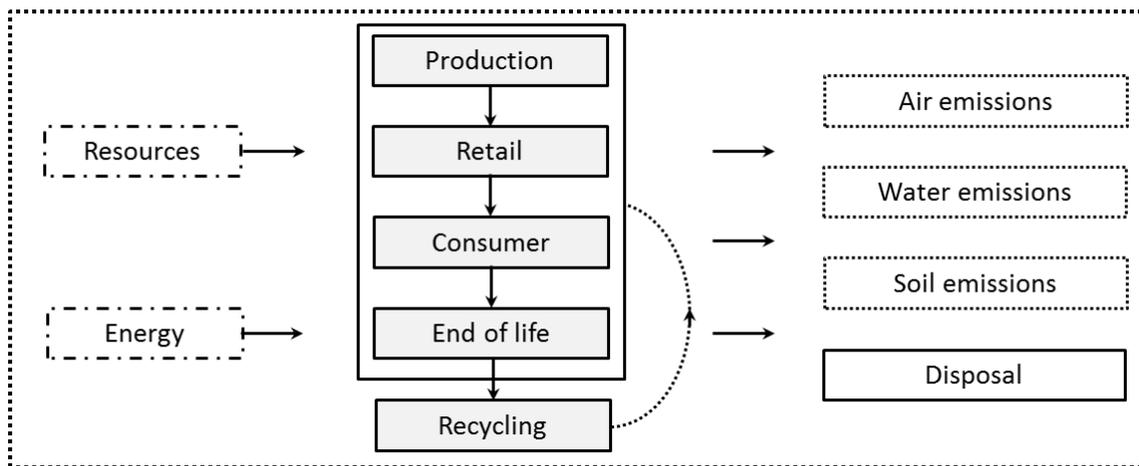
Figure 2   Example of an LCA for a consumer product

The 'Whitefish' project uses the LCA methodology to determine the environmental impact of the cod and haddock fisheries from the North East Atlantic. The life cycle of a product implies a chain of successive events. An LCA quantifies the use of resources and emissions to the environment during the life cycle of a product.
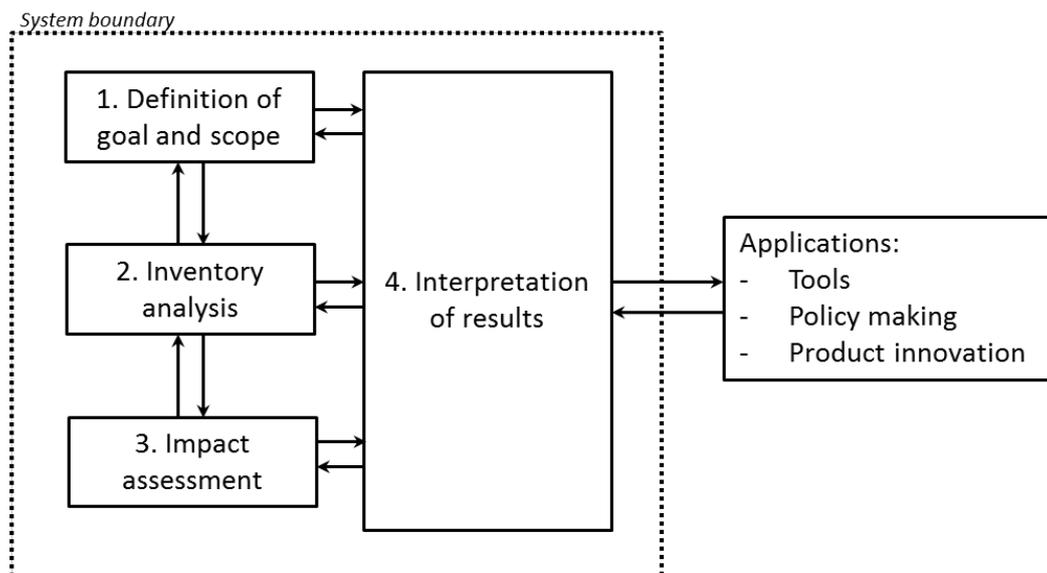
Figure 3   The LCA Framework

Currently the LCA framework does not include social and economic aspects. In this these factors will however also be included in order to cover all three pillars of sustainability (Figure 1). The final version of the BCSI will therefore include these factors with the aim to give consumers and other supply chain actors a complete and simple manner in which to judge sustainability.

An important first step in the development of the BCSI, is to establish a requirement specification that is established on inputs from those that are going to use the BCSI and thereby establish what both consumers within the supply chain and what the expectations of end consumers demands maybe.

2   Consultation on the BCSI requirements

Stakeholder workshops were held at the beginning of the 'Whitefish' project where the SMEs and SME-AG partners were introduced to the methodology that may form the basis of the BCSI and were asked to give initial inputs for their requirements from the BCSI. The stakeholders include representatives from throughout a white fish supply chain from fishermen to producer/supermarket to independent organizations interested in promoting responsible fisheries.

3 Results

The companies involved answered a number of different questions regarding the BCSI. The answers are summarised here.

3.1 Overall expectations with regards to the BCSI

The interviewees expected to achieve several related goals through the use of the BCSI. These revolved around documenting the environmental aspects of their products both with regards to documentation for customers and that of documentation internally within a supply chain. They also expressed the desire to be able to use the BCSI as a marketing tool and as a tool for 'enhancing (improving) the environmental load of their products', and improving the environmental impact of individual companies.

Through the development of the BCSI the interviewees hope to gain a better understanding of factors contributing to the environmental impacts of their products. The interviewees also expressed the desire to understand how actors in the supply chain can affect the environmental burden of their products. In addition, the interviewees would like to be able to quantify the environmental impact.

When the interviewees were questioned as to what answers the BSCI should supply, one of the dominating answers was analysis and calculation of the environmental impact of their current practices. The BCSI should be able to supply answers to questions regarding sustainability both within supply chains and to end consumers, for example in decision making processes when choosing raw materials. Some of the interviewees would like the BCSI to be applicable in certification settings and other formalized uses. The BCSI should also clarify the social and economic impacts of sustainability as well as the environmental impacts.

It was clear from the answers to all the questions that the BCSI would be important in a marketing context.

Some of the interviewees believe that the different parts of the supply chain or for example different sizes of boats will use the BCSI differently. The BCSI could be used to establish industry benchmarks and could be offered as a service within the SME-AG internal web services, in addition to external web services. The interviewees also highlighted the possibility of using the BCSI as a motivational tool to encourage suppliers to improve their environmental performance.

3.2 Elements to be included in the BCSI

The interviewees expected the following elements to be included in the BCSI:

- o Fuel usage
- o Emissions
- o Type of gear
- o Kg fuel usage/kg fish
- o Packaging material
- o Different types of transport, e.g. sea, air or land

The interviewees also expressed the desire for the calculation method to be universal, and not only usable by non-typical companies. The Sustainability Impact (SI) calculations must be seen as fair and comparable by the potential buyers.

3.3   Availability of the BCSI

The interviewees had different perspectives with regards to how the BCSI should be made available dependent upon their position in the supply chain. There was an expectation the BCSI should be easily implemented, easily used and automated. There was an expectation that it could be used as an online tool and as an extension of existing services. The BCSI should be based on a methodology that provides confidence in the validity of the data created.

3.4   Detail of the BCSI

With regards to the level of detail expected in the BCSI the interviewees thought it should be focused on being at a batch level (this is implicit in the name). Beyond this the interviewees expected the tool to focus on the major contributory factors to their environmental impact. The interviewees emphasized ease of use as being important. The desire to input only the minimal amount of new data for each new batch was also important. Other values that maybe constant from year to year should be able to be pre implemented and 'remembered' by the tool. As has been specified by the interviewees earlier the level of detail should be sufficient to provide credibility, but not so complex that mistakes could occur when inputting data into the tool.

3.5   Concerns about the BCSI

The interviewees expressed a number of concerns regarding the BCSI, one of the major ones being the possibility that it could be used for propaganda by competitors or advocacy groups. Another concern was data security, and where data input into the tool maybe used and by whom. Concerns were also raised about the acceptability of the outputs from the tool in a wider context, ease of implementation and suitability for a wide variety of companies. There is a fear that the tool will only be able to be used internally within a company when it is most interesting for external purposes. Finally concerns were raised with regards to the 'usability' of the tool and the possible need for a further project in order to create a tool, which can be used in marketing and not just for internal bench marking.

The industry is expecting to provide input in the form of expert review for the tool. The companies expect to have to provide the same types of data as will eventually be used in the BCSI.

3.6   Motivation for development of the BCSI

When questioned about the motivations for taking part in the project and the development of the BCSI, the same motivations as uses were named and in addition the ability to limit the costs related to achieving a desirable environmental impact and the ability to illustrate this for the market.

Table 1   The importance of the different aspects of sustainability (environmental, economic and social) for profiling the interviewees companies. Responses (R) to questions which are numerical: 1 least important and 5 most important.

Question	R1	R2	R3	R4
How important is profiling the environmental impact of your members/company?	3	4	4	5
How important is profiling the economic impact of your members/company?	2	5	3	4
How important is profiling the social impact of your members/company?	2	2	3	4

*Not all the respondents gave an answer to this section of the questionnaire.

The interviewees were uncertain about the possible importance, they felt that it would be a valuable tool for assisting in marketing. It will only be widely accepted if it is widely used and its potential to create value will be based on its user friendliness and general supply chain perspective.

4   Summary

The results of the investigation into the requirement specification for the BCSI can be summarized as follows. The main motivations and expected uses of the BCSI are concentrated around the following themes;

- o Calculating and reporting environmental impact
- o Marketing (internally and externally)
- o Communication both within supply chain and to final customers

The stakeholders expect the development of the BCSI to assist them in assessing their internal supply chains and also comparing their products (with other companies) with regards to environmental impact.

The data elements the stakeholders expect to be relevant are;

- o Catch volume
- o Catch per unit effort
- o Trip (distance, type)
- o Gear
- o Transport of products
- o Fuel usage
- o Packaging material
- o Type of fishery (eg. coastal vs offshore fisheries)

The BCSI tool should be;

- o Easy to use in terms of input of data
- o Easy to interpret
- o Available through web applications
- o Offer customization options
- o Detailed enough to be reliable
- o General scientific acceptance is desirable

These are the most important points for the 'Whitefish' project to take into consideration when developing the BCSI from the stakeholder's point of view.

5   Bibliography

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