

Batch Based Calculations of Sustainability Impact

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Sustainable and responsible harvesting of fish is can only be shown to be achieved when good overall information about the sustainability of the stocks and environmental impact of harvesting is available. However this impact is poorly documented and the information is not currently easily available to stakeholders in the supply chains. A method for assessing the sustainability of fisheries is by using Life Cycle Assessment (LCA). Assessing the situation using this method can be a challenging process because of the many and complex data elements involved. In the context of a supply chain with multiple actors and batches which vary with input there are further challenges. In order to address these challenges a simpler tool which could be used internally by all actors in the supply chain would be advantageous.

Fuel usage is a major factor requiring consideration this being the fishing fleet's single greatest contributor to greenhouse gas emissions. In addition to fuel usage a number of other factors such as those related to economic and social impacts of harvesting seafood products need to be included when investigating sustainability. Environmental, economic and social impacts were also identified as being important when calculating and communicating the Sustainability Impact (SI) of products for stakeholder use.

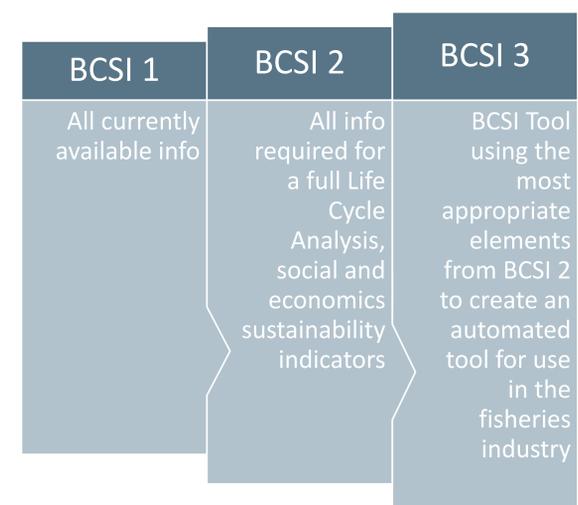


Figure 1. The method development for the BCSI – from the initial BCSI1 through developmental processes to BCSI 3

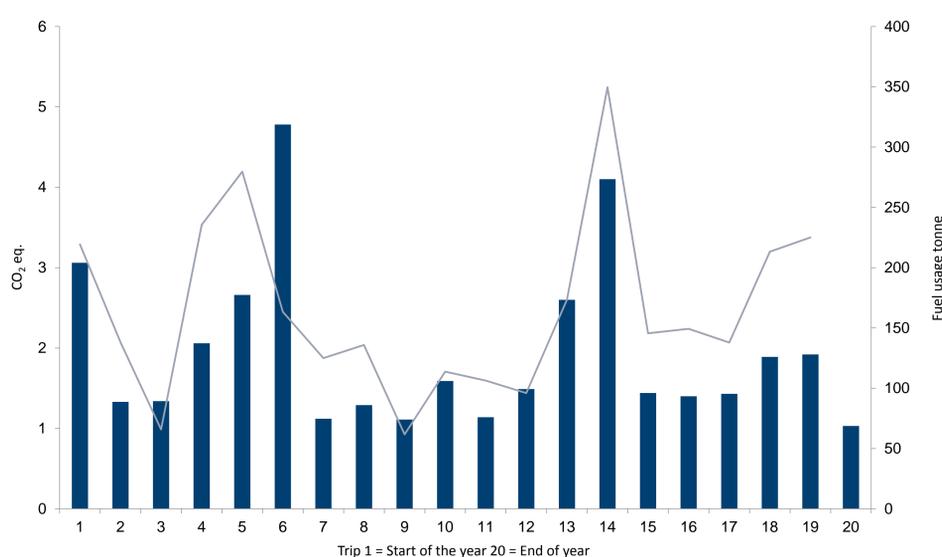


Figure 2. Shows the relationship between fuel usage and CO₂ equivalence - the bars represent kg CO₂/kg fish landed and the line represents the fuel usage for one vessel used in the study.

A **Batch based Calculation of Sustainability Impact (BCSI)** was created by using Life Cycle Assessment (LCA) methodology together with expert and industry consultation. It has been possible to create a tool with a limited number of relevant factors which will allow companies to calculate the sustainability impact (SI) for their products on a batch level (a batch is often defined as a trip) see fig 1.



Stakeholders expect the BCSI tool to be easy to use in terms of input of data, easy to interpret, available through web applications and offer customisation options. The BCSI should be detailed enough to be reliable, simple enough for ease of interpretation and general scientific acceptance is desired.

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References: Tyedmers, P.H., R. Watson & D. Pauly (2005). Fueling Global Fishing Fleets. *Ambio*, 34: 8, pp. 635-638. | Groen, E., Ziegler, F., Bokkers, E., Karlsen, K.M., Veldhuizen, L., de Boer, I., Donnelly, K., Sund, V., Krewer, C. (2013). Variability in fuel efficiency of a North East Atlantic demersal trawl fishery. The 6th International Conference on Life Cycle Management in Gothenburg, Sweden, August 25th-28th 2013 | White Fish Project D4.1-BCSI first run impact assessment from case 1 and 2