



Life Cycle Assessment of a Football Match



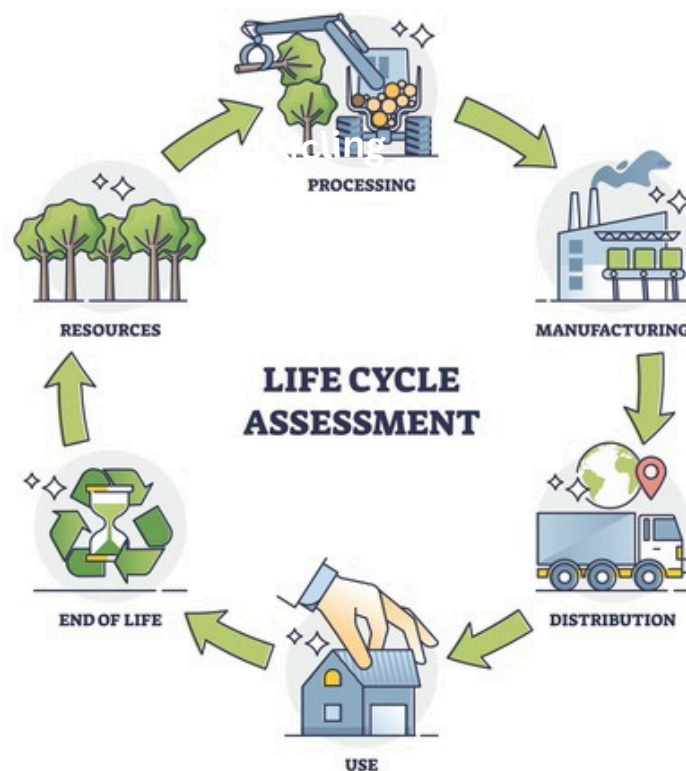
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What is a Life Cycle Assessment (LCA)?

Life cycle assessment (LCA) is a methodology to assess the overall environmental burden associated to the whole life cycle of a product or service.

Being quantitative, standardized and scientific, this methodology allows the production of reliable information about the environmental performance of a product and it overcomes some issues that might arise while focusing on a single life cycle phase, typically the production one.



What is an LCA? (cont.)

It is generally considered the most reliable tool to assess properly the sustainability of a product.

LCA is an iterative process, which consists of 4 main phases:

1. Goal and scope definition.
2. Inventory analysis (Life Cycle Inventory - LCI)
3. Impact assessment (Life Cycle Impact Assessment - LCIA)
4. Interpretation of the results

Today, LCA is defined in two ISO standards:

- ISO 14040:2006 - Environmental management -- Life cycle assessment -- Principles and framework
- ISO 14044:2006 - Environmental management -- Life cycle assessment -- Requirements and guidelines





Goal and Scope

To identify the environmental footprint of a professional football match in a specific season (2022).

The unit of analysis of the study is 1 football match played at Eleda Stadion.

During the 2022 season, a total of 22 matches were played at Eleda Stadion from 11/04/22 to 06/11/22.

Did You Know?



An environmental footprint, isn't just about carbon emissions. For example, it can include:

- Climate change
- Ozone depletion
- Ionising radiation
- Photochemical ozone formation
- Particulate matter
- Human toxicity (cancer and non-cancer)
- Acidification
- Eutrophication (marine, freshwater, terrestrial)
- Ecotoxicity – freshwater
- Land use
- Water use
- Resource use, fossils, minerals and metals



Inventory Analysis

The scope of the study is to assess the environmental footprint of a football match, considering the following system boundaries:

- energy, water consumption and refrigerants gas refills associated to the football match processes (with reference to the stadium facility)
- production and end of life of the sport apparel and equipment merchandised (t-shirt, shorts, balls, sport bags and scarfs) and used by the team (e.g. shoes, t-shirt, shorts, balls, etc.)
- production and end of life of waste materials associated to the football match, and related production of the corresponding materials (paper, plastic, glass, metal)
- production and end of life of food and beverages associated to the football match (bar and kiosk and catering including the menus served at the stadium), including packaging
- production of the chemicals and materials used for cleaning operations and for the pitch maintenance (i.e., fertilizers, cleaning product, turf, etc.)
- transport of the public attending the football match (home team and away team).
- transport of the Malmö FF Staff to the football pitch (away matches)
- transport of the Malmö FF talent scouts throughout the whole season;
- material used for choreographies by home supporters.





Impact Assessment

For Malmö FF the main environmental impacts of a professional football match are:

- Climate change 32.9%
- Resource use, fossils 15.5%
- Resource use, minerals and metals 7.5%
- Acidification 7.3%
- Particulate matter 7.2%
- Water use 6.6%

Most Impactful Activities



59.1% - Supporters' mobility is the key contributor to the overall footprint



25.2% - Followed by food and beverages served at bars, kiosks and catering



9.6% - The third largest contributor was energy consumed at the stadium



Smaller contributions include staff mobility (away matches), waste management, food and beverage packaging



Interpretation Of Results and Recommendations

Supporters' mobility, food & beverages served both at kiosks and at catering, followed by energy consumed at the stadium are the three most relevant contributors to the overall footprint.

These top 3 processes together represent more than 90% of the overall environmental footprint.

Read on for recommendations on these areas.

Transport



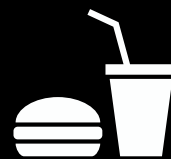
Supporters' mobility is the largest contributor to Malmö FF's overall footprint.

Though mobility is seldom under direct control of the professional football organisation, to lower the total environmental footprint, it is necessary to reduce the use of cars for home supporters as well as flights for guest supporters.

A further boost in the use of public transport could contribute to reducing the impact of home supporters' mobility.



Food



Food and beverages served at bars, kiosks and catering is the second largest impact.

Malmö FF owns its stadium and has a direct influence on the composition of the menu. The inclusion of more environmentally friendly type of food and beverages could be a target for potential improvement actions.



Energy



The third largest contributor was energy consumed at the stadium.

Energy consumption can be reduced through the adoption of LED lights in the stadium and facilities. The LED lights currently installed affect 60% of the organisation's annual electricity consumption.

Malmö FF is in the process of changing as many stadium lights to LED fixtures as possible. The organisation faces the potential challenge concerning the energy cost of hosting additional matches in the European games.



Limitations of the Study & Possible Improvements

A significant share of input data does not reach the “very good” quality rate, mainly due to proxy data used to model food&beverage production and the relevant packaging production, accounting for 29.5% of the total environmental footprint of the professional football match.

Mobility: the model for home supporters is based on a sample representing 0.88% of the total average season value for home supporters.

Two additional data collections regarding mobility were conducted April 2024.





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