



# ESDEVENIMENTS ESPORTIUS SOSTENIBLES

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# The importance of the environmental footprint in the football world

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# Who we are?



## Sant'Anna School of Advanced Studies – Pisa (IT)

Italian public university operating in the field of applied sciences: Biorobotics; Management; Law; Politics and Development; Life sciences; Economics; Communication information and perception technologies.



Within the Institute of Management, the **Sustainability Management (SUM) laboratory** combines knowledge of business management and policy making with the principles of sustainability, through scientific research and empirical investigation in the following areas:



Environmental management and industrial symbiosis, Energy and resource efficiency, Circular economy and natural capital, Life cycle thinking, green marketing, stakeholders' engagement, Climate change, etc.



# The interest on environmental protection in football is raising quickly



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## SPORT

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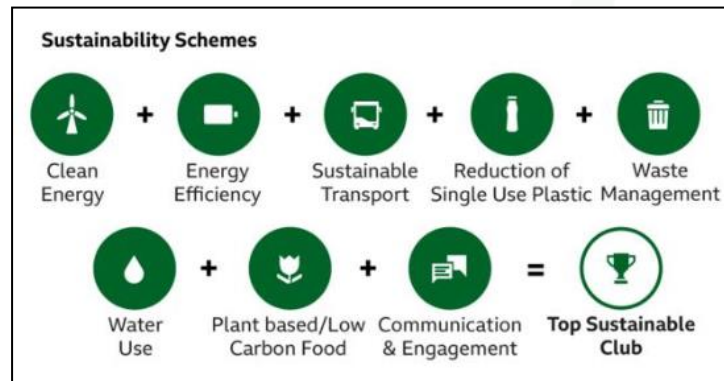
Premier League > Scores & Fixtures Table Top Scorers All Scores & Fixtures All Teams Leagues & Cups

### How green are Premier League clubs?

By Jack Skelton & David Lockwood  
BBC Sport

Top Stories

European finals likely to be in August  
12h European Football



Premier League Sustainability Rankings			
Rank	Club		Score
1	Arsenal	●●●●●●●●	8
1	Manchester City	●●●●●●●●	8
1	Manchester United	●●●●●●●●	8
1	Tottenham Hotspur	●●●●●●●●	8
2	Brighton & Hove Albion	●●●●●●●●	7.5
2	Newcastle United	●●●●●●●●	7.5
2	West Ham United	●●●●●●●●	7.5
3	Everton	●●●●●●●●	7
3	Sheffield United	●●●●●●●●	7
3	Aston Villa	●●●●●●●●	7
4	Burnley	●●●●●●●●	6.5
4	Chelsea	●●●●●●●●	6.5
4	Liverpool	●●●●●●●●	6.5
4	Wolverhampton Wanderers	●●●●●●●●	6.5
5	AFC Bournemouth	●●●●●●●●	6
5	Norwich City	●●●●●●●●	6
6	Leicester City	●●●●●●●●	5.5
6	Southampton	●●●●●●●●	5.5
7	Crystal Palace	●●●●●●●●	4.5
8	Watford	●●●●●●●●	2.5





# The interest on environmental protection in football is raising quickly



**French professional League and WWF join forces to boost sustainability in football**

Written by Beatriz Rios | EURACTIV.com  
April 29, 2019



# Environmental and carbon footprint: two important topics



## The carbon footprint: Can we make football greener?

Football seems to be a low-impact past time in terms of the environment but Director of the Institute for Media and Creative Industries at Loughborough University London and environmental writer **Professor Toby Miller** reveals that the beautiful game is beginning to build up a huge carbon footprint...

Although born in Leicester and still a Foxes fan, I cut my teeth at Craven Cottage watching Fulham in the old Third Division. I think



MAY 29, 2019 | MIKE HOSEY | CLIMATE CHANGE, SUSTAINABILITY

## Football's Environmental Footprint

The last few months have had so many ups and downs. One of the closest Premier League title races in years is over, the Manchester City domestic treble, and we are just all-English Europa League and Champions League final. For those of

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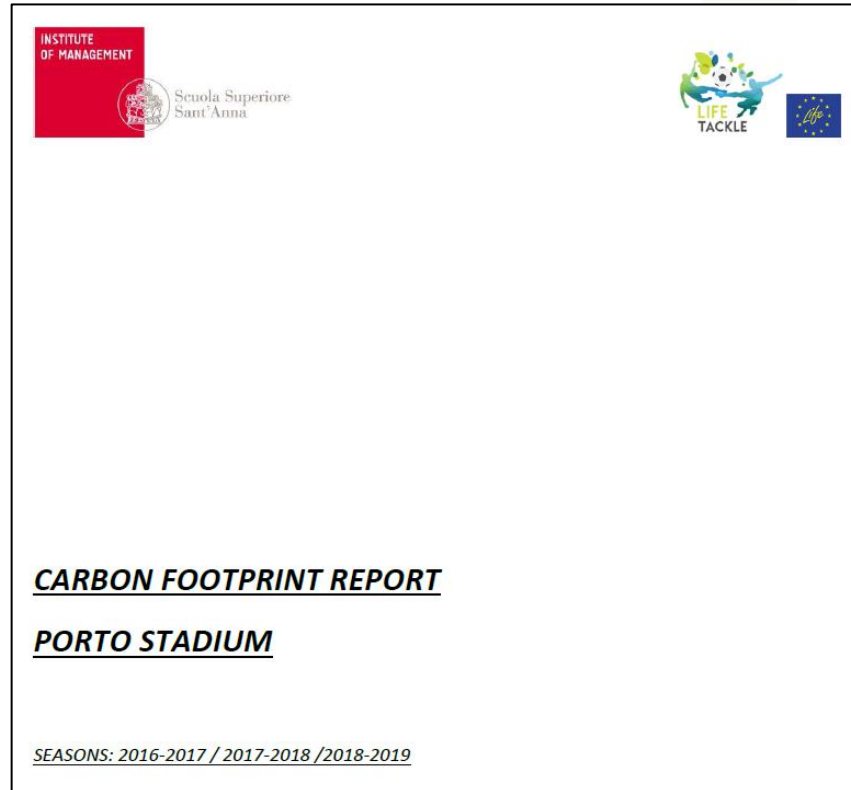
**Green living blog**  
Carbon footprints

## What's the carbon footprint of ... the World Cup?

Staging the global football frenzy will create more carbon emissions than a billion cheeseburgers.



# Environmental and carbon footprint: two important topics







# Why environmental footprint in football?



In the last years the proliferation of several methods has created a lot of confusion...







# Why environmental footprint in football?

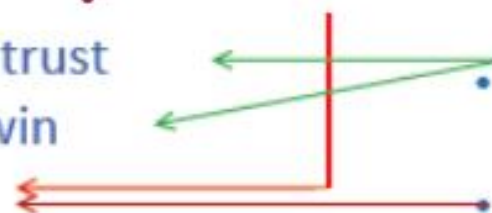


- More than 400 environmental labels in the world
- Only for GHGs, 80 leading reporting methods and initiatives

## Issues:

- What is green?
- How do I prove that my product or company is green?
- If I choose one approach, will it be accepted by everyone?
- Do I have to prove I'm green in different ways to different clients?
- Will consumers and business partners understand my claim?
- Does green mean more expensive?

Confusion, mistrust  
Free-riders win  
Costs





# Why environmental footprint in football?



## COM 2013, 196:

1. There are too many reference standards to calculate the footprint, this creates confusion and lack of trust in the consumers/citizens;
2. Some methods give too much flexibility also for the calculation of the same impact, it implies that the results obtained from two different methods are not comparable;
3. Some methods are focused on only one environmental impact (e.g., carbon footprint, water footprint, etc.) and the other impacts are not considered



# What do we need?



- Same calculation rules for everybody
- Same/similar reporting requirements for companies
- Agree on what do we mean with “green”, and when a product can be considered better from the environmental point of view than another
- A consistent policy framework that can support the competitiveness of organisations at EU and country-level based on the environmental performance of products
- The capability of distinguish the peculiarities of each product (harmonisation does not mean that all the products are equals!)



# The European environmental footprint



The European Commission has raised the problem... and then has found the solution:

RECOMMENDATION 179/2013 on PEF (Product Environmental Footprint) and OEF (organisational Environmental Footprint)

4.5.2013

EN

Official Journal of the European Union

L 124/1

II

*(Non-legislative acts)*

## RECOMMENDATIONS

COMMISSION RECOMMENDATION

of 9 April 2013

on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations

*(Text with EEA relevance)*

(2013/179/EU)

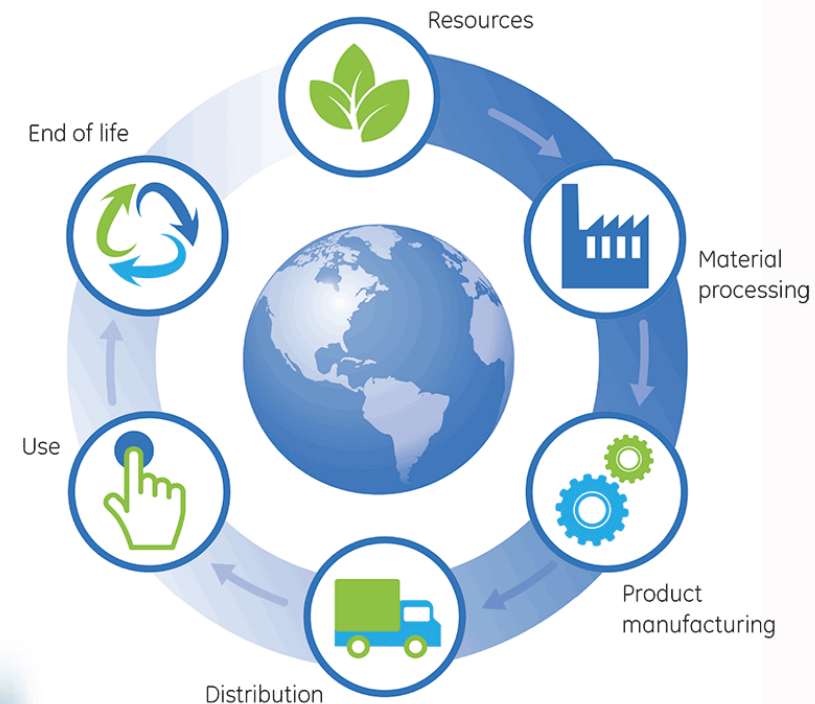




# The environmental footprint is based on the Life Cycle Assessment (LCA) approach

To correctly evaluate the environmental performance, **ALL** the impacts it produces over its entire life cycle must be considered.

LCA considers all the impacts with an approach that is called “from cradle to grave”





# Life Cycle of a football match



**Pre-match:** logistics, irrigation of the pitch, use of materials, etc.



**Match:** lightening, showers, waste production, logistics, etc.



**Post-match:** water consumption to wash shirt logistics, cleaning of dressing rooms etc.



# The impact categories of the environmental footprint



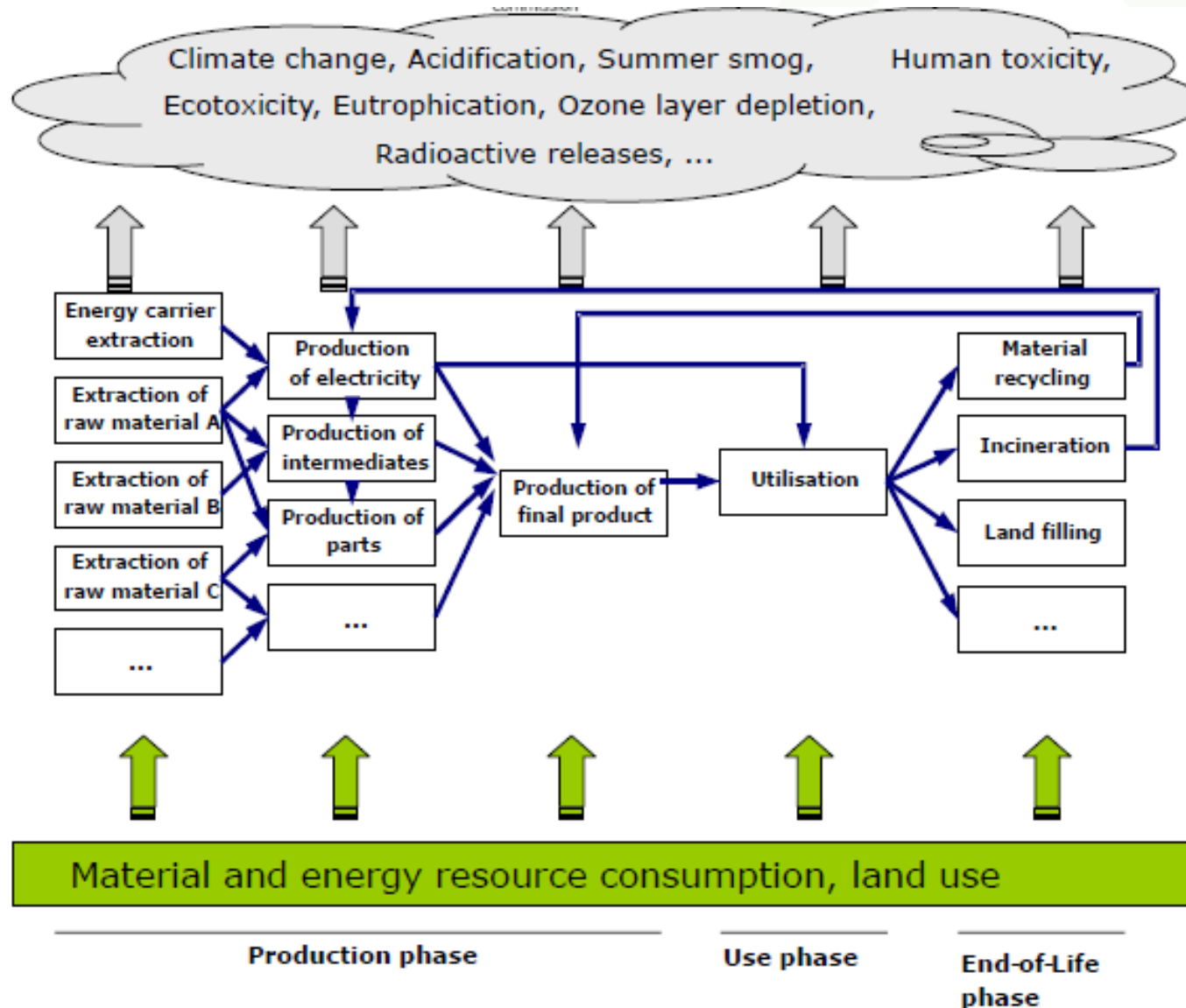
Impact category	Unit
Climate Change (carbon footprint)	kg CO <sub>2</sub> -eq
Ozone depletion	kg CFC <sub>11</sub> -eq
Particular matter	kg PM <sub>2,5</sub> eq
Photochemical ozone formation	kg NMVOC eq
Acidification	molc H <sup>+</sup> eq
Terrestrial eutrophication	molc N eq
Freshwater eutrophication	kg P eq
Marine eutrophication	kg N eq
Water resource depletion (water footprint)	m <sup>3</sup> eq
.....	.....



# A general scheme that should be redesigned for football



Life Cycle Inventory

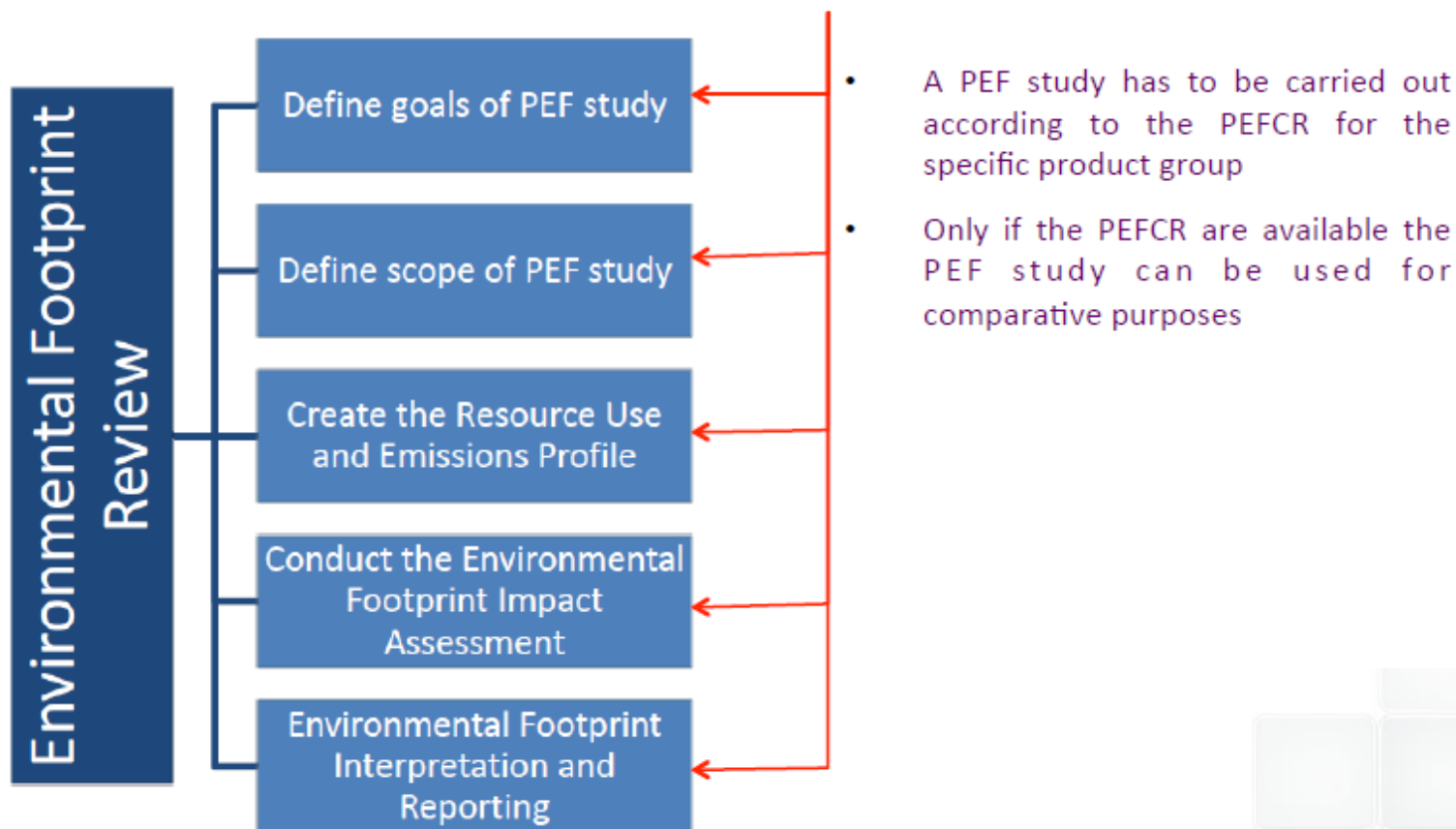


- Data collection may be difficult.
- Football organisations are not accustomed to monitor some aspects
- Secondary data from specific database may help overcoming this issue.





# Phases of a PEF Study

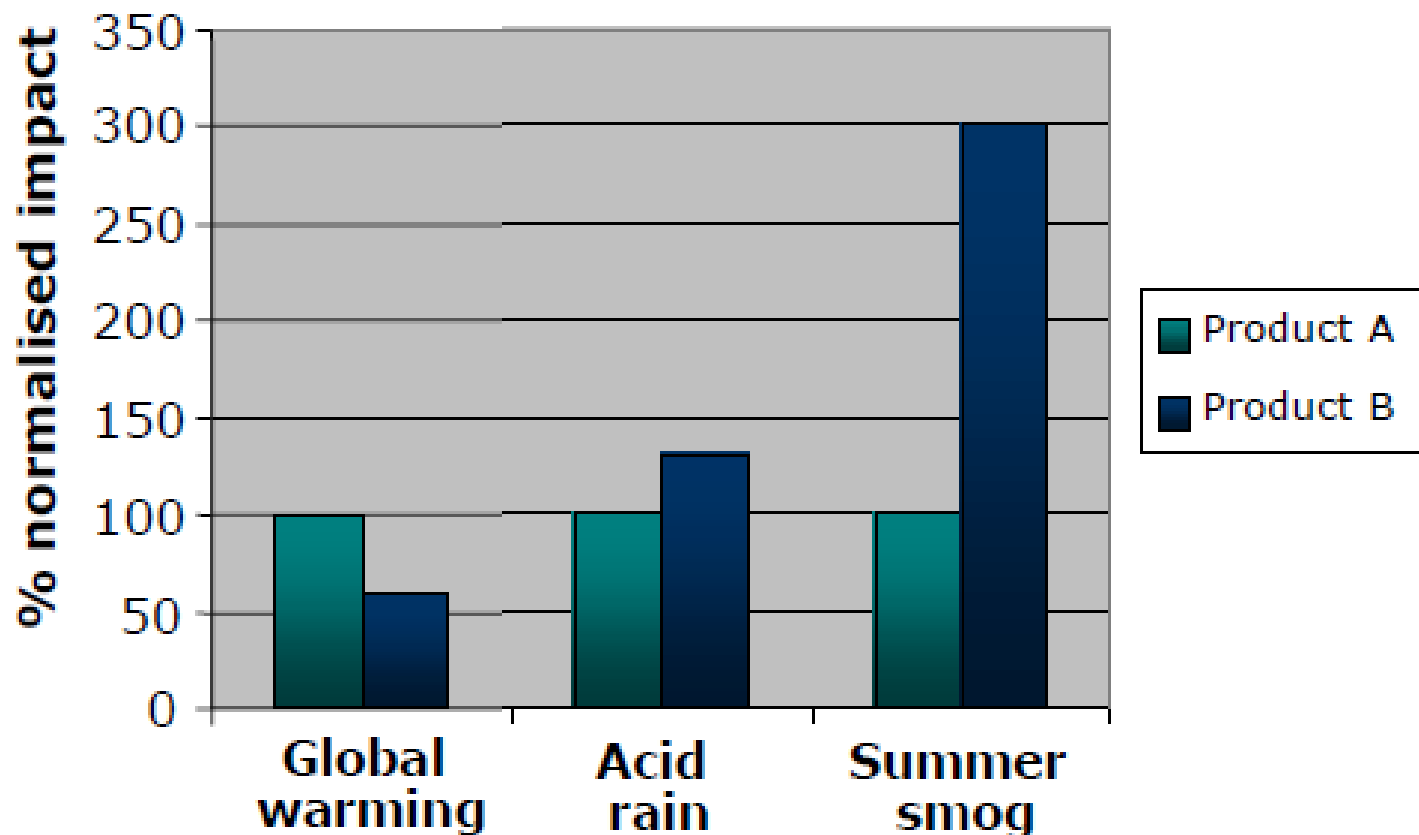




# Impacts' shift



Comparison of two products



Considering single indicators (Mass flow, Energy, Global warming) is often considered to provide clear results.

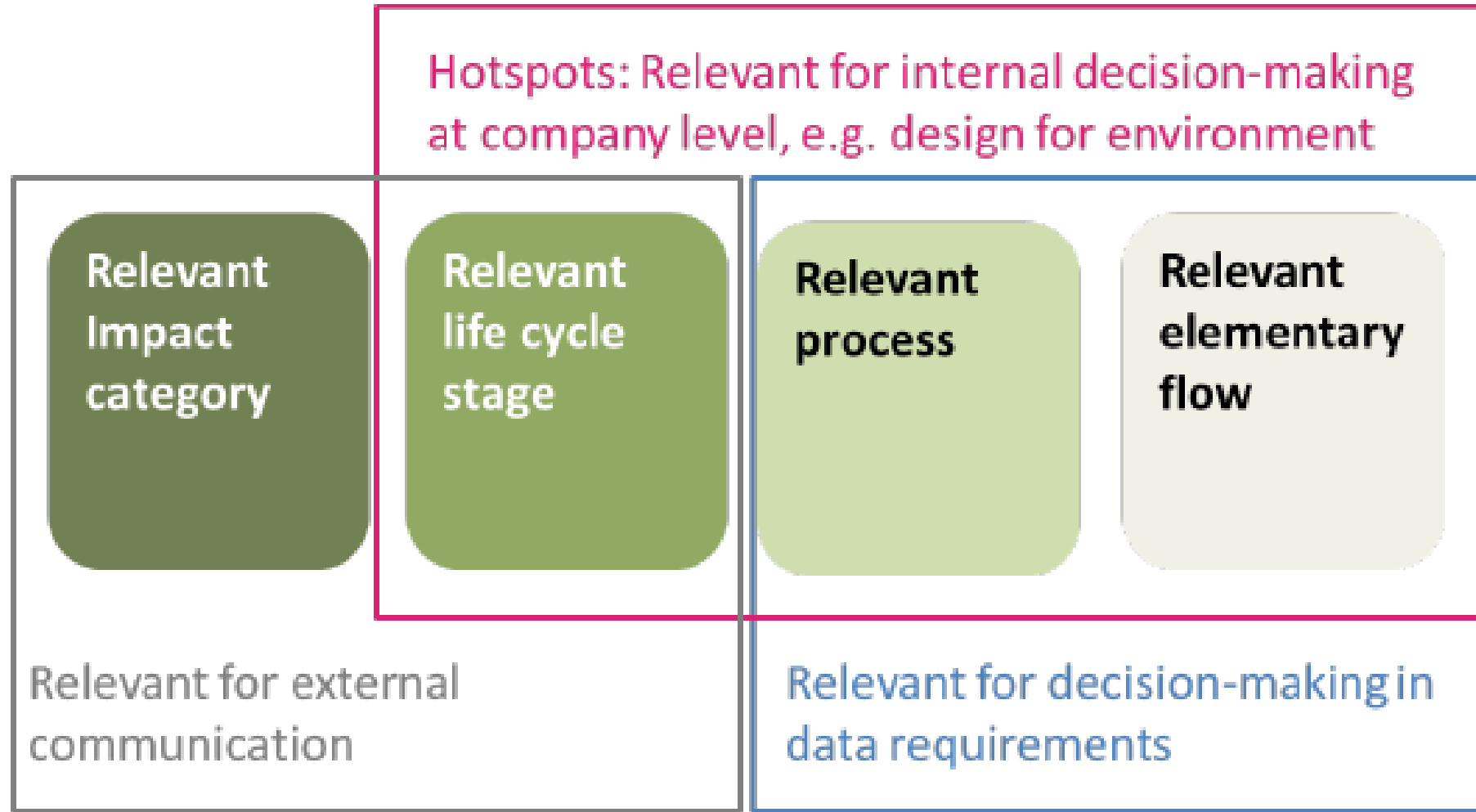
Extending the set of considered indicators leads often to a more differentiated result.

- B better than A!?
- B about equal to A!?
- A better than B!?

Considering all relevant indicators ("the complete picture") is the only way to avoid shifting of problems!



# Hotspots identification





# Procedure to identify the most relevant impact categories



- The identification of the relevant impact categories shall be based on the normalized and weighted results
- Start to the largest to the smallest contribution

**Normalization** is a process to calculate the magnitude of the results of impact category indicators, relative to some reference information. The characterized results of each impact category are divided by a selected reference value, which brings all the results on the same scale

**Weighting** entails multiplying the normalized results of each of the impact categories with a weighting factor that expresses the relative importance of the impact category.





# Comparing alternatives



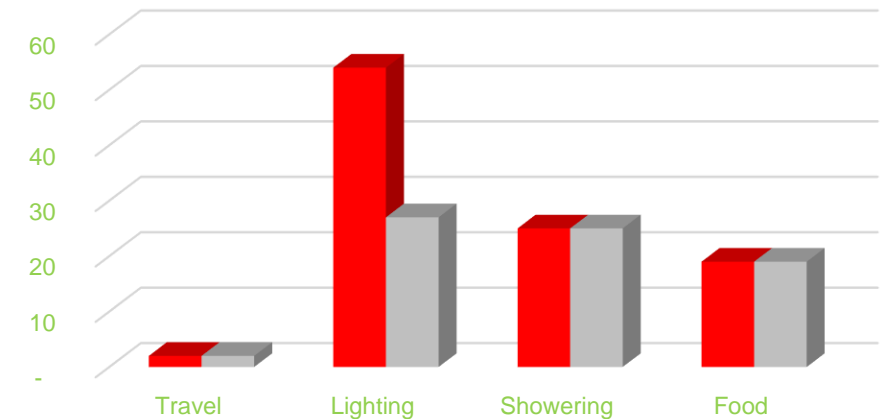
Reporting the results in a comparative way, according to different assumptions, scenarios or actions

	Carbon footprint (kg CO2 eq.)
No LED for lighting	145
LED for lighting	97 (-33%)

The comparison between an ex-ante situation (no LED) and an ex-post situation (LED) could allow:

- To use the environmental footprint as an **eco-design tool** (i.e., if (in the future) I will adopt LED how will be the environmental benefit in my footprint?)
- To evaluate the environmental benefit of the adoption of a specific practices

Football match Carbon footprint (kg CO2 eq.)  
: current scenario vs LED for lighting





# Providing examples to strengthen the communication strategy



	Carbon footprint (kg CO <sub>2</sub> eq.)
No LED for lighting	145
LED for lighting	97 (-33%)

What does it mean to reduce  
48 kg of CO<sub>2</sub>-eq per year?



980 km of a medium car i.e., all the travel of referees in the football season



CO<sub>2</sub> absorbed by a tree in 6 months

1000 hours an electric oven to produce 1200 cakes



Electricity consumption of 26 families of 4 people





# GREEN GOOD GOVERNANCE FOR ENVIRONMENTAL SUSTAINABILITY IN SPORT COACH

The **GREENCOACH TOOL** is a user-friendly benchmarking tool to measure the environmental footprint of the sports organisations. The sport centers will use the tool to rate their environmental current status and get information of what they can do in order to apply changes to reduce their environmental footprint.

For the players, families, spectators and staff linked to the organisation, the GREENCOACH tool will promote suggestions to facilitate the switch to more sustainable transport options.





# GREEN GOOD GOVERNANCE FOR ENVIRONMENTAL SUSTAINABILITY IN SPORT COACH

Creation of a user-friendly online tool (the **GREENCOACH TOOL**) to engage both the sports organisation and the players, families, spectators and staff into sustainability behaviour:

The **GREENCOACH tool** will allow the sports organisation to:

- Easily benchmark where the sports club is on the environmental footprint
- Put all the necessary information for monitoring the reduction of the environmental footprint, and have tips and advice to keep continuously improving







# THANK YOU!

INSTITUTE  
OF MANAGEMENT



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