

## **LIFE CYCLE ASSESSMENT (LCA)**

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It is an old motto that ‘You cannot manage what you cannot measure’, and it is therefore important that we have tools for assessing the sustainability of our choices when we develop solutions or systems that shall help us determine the needs of the present generations without compromising the ability of our descendants to meet their needs in the next future.

As scientists, we must take a life cycle perspective when we want to assess the sustainability of the technologies that lie in front of us. Very often we face problem shifting where solutions that improve or solve a targeted problem unintentionally create new problems of environmental, economic or social nature somewhere else in the systems affected by our choice.

Life Cycle Assessment (LCA) shows all the potential impact of our choices, through the analysis of the whole life cycle of the system or product that is the object of the study and it covers a broad range of potential impacts for which it attempts to perform a quantitative assessment.

Scientists or science managers who develop decision support, or make decisions where sustainability is a concern, should understand the need to view the solutions in a life cycle perspective and to consider possible trade-offs between environmental impacts and between the three sustainability dimensions.