NACE CODE A01, A03, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, D35, E38, E39

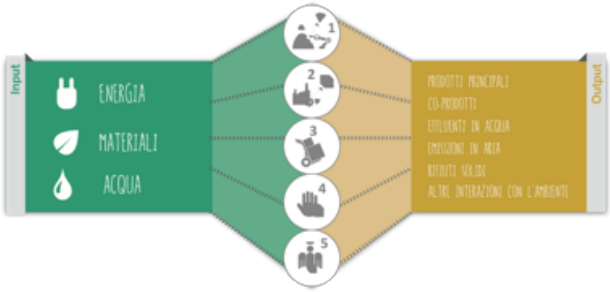
LIFE CYCLE THINKING AND SUSTAINABILITY ASSESSMENTS

Innovations and Benefits - The sustainability of products or systems implies an estimate of the impacts on the environment, workers, local communities, consumers and actors of the supply chain. Being able to model the supply chains in the technological, market and socio-economic relationships allows to identify the intervention priority without causing impact transfers along the supply chain and between different environmental sectors.
Life Cycle Thinking (LCT) is the approach with which to analyze the environmental, economic and social sustainability of products, services, technologies and systems, considering all phases of the life cycle (extraction of raw materials, production, use, distribution and end of life). Life Cycle Assessment, Life Cycle Costing and Social-LCA are the main tools for applying the LCT approach.

Use - The laboratory has more than ten years of experience on:

- **Environmental certification of products and organizations** - environmental product declaration (EPD), product environmental footprint (PEF) and organization environmental footprint (OEF), other voluntary systems;
- **Development of methods and tools to assess the sustainability** of products, services and new technologies to support companies in the fields of research, innovation, product development, production scaling-up and marketing;
- **Assessment of the environmental impacts of nanotechnologies** through the integration of risk assessment and the LCA life cycle;
- **Evaluation of complex systems scenarios** (waste management systems, transport, etc.).

Applications and ongoing Activities - The activities are carried out in the frameworkt of national and international projects, collaborations with Ministries and contracts for companies and include studies with LCT approach for the assessment of sustainability of emerging technologies and / or for the comparison with conventional scenarios, carried out at micro and meso level in the various sectors: agro-industrial and zootechnical supply chains, innovative technologies (e.g. nanotechnologies and energy technologies), innovative materials (plastics with additives, paints and concrete), lithium batteries, use of drinking water, management and valorisation of waste and wastewater. Finally, simplified SW of LCA and Ecodesign for SMEs have been developed.



Characteristics:
The Life Cycle Thinking service can be flexibly adapted to different needs and contexts

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