

# Tropical fruit and vegetable Life Cycle Assessment by CIRAD

## LCA-CIRAD

### > CHALLENGES

In the context of environmental challenges and the need for more sustainable modes of production, Life Cycle Assessment (LCA) has become the worldwide standard and tool for analyzing the environmental impact of products and services. In LCAs applied to fruit and vegetables, the focus is put on the farm level, where most emissions, environmental issues, and use of resources occur.

**For businesses, LCA is the tool to be used to reduce environmental impacts and waste, cut costs, support marketing claims, identify appropriate performance indicators, or implement Environmental Product Declarations (ISO 14025) and, in future, the mandatory Product Environmental Footprint labeling.**

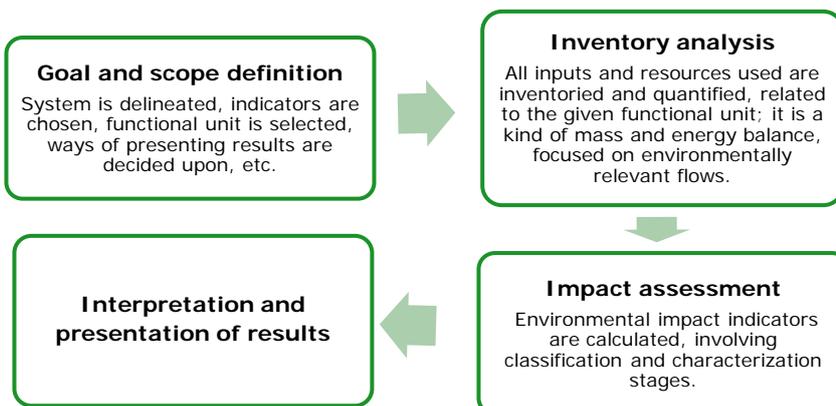
To conduct LCAs of tropical fruit and vegetables, specific challenges are addressed: the limited availability of information and the specific knowledge of supply chains in Southern countries.

### > CIRAD'S EXPERTISE

#### CIRAD researchers: experts in tropical fruit & vegetables and their supply chains.

Over 10 years CIRAD has developed specific expertise and tools for environmental impact assessments. Our experts regularly conduct LCAs of tropical products in southern countries. They use the most advanced tools and data: SimaPro multi-user and Citrix server, and Ecoinvent Lifecycle inventories. They manage and continuously increment a dedicated database on tropical products based on the scientific state of the art and controlled through an internal data quality management system.

**LCA-CIRAD assessments of tropical products facilitate sound eco-design planning. They follow the ISO 14040 2000-6 standards on the four stages of LCA**



### > CIRAD IN A NUTSHELL

CIRAD is the French agricultural research and international cooperation organization working for the sustainable development of tropical and Mediterranean regions. With over 100 countries, it works to generate new knowledge, support agricultural development, and contribute to the debate on the main global issues concerning agriculture, food and rural territories. It has a staff of 1650, including 800 researchers.

**Crop management, agro-ecology and environmental impact assessments are major fields of activity for them.**

Visit CIRAD website:  
[www.cirad.fr](http://www.cirad.fr)

## LCA-CIRAD

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#### CONTACTS

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### > OUR EXPERTS IN LCA OF TROPICAL PRODUCTS

The LCA-CIRAD team comprises almost 20 scientists and a database engineer from nine research units. They specialize in over 16 tropical supply chains and products, including **banana, pineapple, mango, citrus, coffee, cocoa and oil palm**. To carry out LCA studies, they travel to production countries **in Asia, the Indian Ocean, Africa, the Caribbean and Latin America**, where they can rely on their local networks of partners to support the collection of all relevant data.

### > WHAT WE OFFER

- Expertise in Life Cycle Assessment of tropical crops
- Progress and decision making support studies & collaboration
- Critical review expertise, as required by ISO standards
- Training courses in the specificities of LCAs of tropical products

### > PROJECT REFERENCES & PUBLICATIONS

- **VCA4D (2016-2020)**: project implemented by Agrinatura and financed by the European Commission to perform and capitalize 30 value chain analyses in developing countries, with the aim of unlocking and de-risking investments.

- **AGRIBALYSE (2010-2013)**: project financed by ADEME for the creation of a public Life Cycle Inventory (LCI) database for agricultural products consumed in France, including clementine/Morocco, rice/Thailand, and cocoa, coffee and mango/Brazil.

- Environmental impacts of imported and locally-grown fruits for the French market: a cradle-to-farmgate LCA study. Basset-Mens C., Biard Y. *et al* (2016). <http://dx.doi.org/10.1051/fruits/2015050>

- Life cycle assessment to understand agriculture-climate change linkages. Bessou C., Perret S. *et al* (2016). [http://dx.doi.org/10.1007/978-94-017-7462-8\\_20](http://dx.doi.org/10.1007/978-94-017-7462-8_20)



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