



Terms of Reference

CARBON FOOTPRINT AND CARBON NEUTRALITY FOR COCOA-CHOCOLATE PRODUCTION OF MAROU CHOCHOLATE J.S.C IN VIETNAM

Project: Circular Economy Cocoa - “From Bean To Bar”

HELVETAS is an independent organization for development based in Switzerland with affiliated organizations in Germany and the United States. Helvetas has been active in Vietnam since 1994, working in various areas typically Agriculture, Bio-conservation, Forestry, Eco-Tourism, and Rural Economy.

1. BACKGROUND

Context

Under the SWITCH-Asia programme of the European Union, HELVETAS is undertaking the Project “Circular Economy Cocoa: From Bean to Bar” with the main objective to develop circular economy solutions in cocoa and other agri-food sectors, leading to equitable economic growth decoupled from harmful environmental impacts. The Project has been implementing since 2022 in 06-07 cacao provinces in Central Highlands and Mekong Delta of Vietnam. In a partnership with Marou Chocolate JSC in Vietnam, HELVETAS Vietnam is seeking for experienced and qualified consultants to **conduct a carbon-footprint analysis** and develop a **carbon neutral action plan** for the cocoa-chocolate production of Marou in Vietnam. The objective of this study is to enhance the efficiency and sustainability of cocoa production as well as to promote the circular economy approach in the supply chain of the company.

Carbon footprint of products (CFP)

A carbon footprint is a measure of the total greenhouse gas (GHG) emissions caused by an individual, organization, event, or product, expressed as carbon dioxide equivalent. Measuring and reducing a carbon footprint is one way to act on climate change, which many organizations have adopted regarding their environmental performance. Regulators, public interest groups, and organizational peers are now requesting independent assurance (no greenwashing) that an organization has prepared **carbon footprint reports** in accordance with international standard ISO 14000, providing confidence in the claims made by organizations regarding their environmental performance.

Carbon neutrality action plan (CNAP)

A Carbon Neutrality Action Plan is a comprehensive strategy designed to reduce and offset greenhouse gas emissions to achieve a net-zero carbon footprint. The plan typically includes a range of initiatives and policies aimed at reducing carbon emissions from various sources, increasing energy efficiency, and promoting the use of renewable energy.

2. OBJECTIVES

In a partnership with Marou Chocolate JSC in Vietnam, HELVETAS Vietnam is seeking for experienced and qualified consultants to conduct a **carbon-footprint analysis** and develop a **carbon neutral action plan** for the cocoa-chocolate production of Marou in Vietnam. This study is to enhance the efficiency and sustainability of cocoa production as well as to promote the circular economy approach in the supply chain of the company.

Data generated from the study will be used to develop new business models to address the existing problems of the cocoa subsector in Vietnam include:

Cocoa Production: Conventional cocoa production in Vietnam uses harmful chemicals, water intensive and causes negative impacts on soil and water quality and biodiversity. Unrealized opportunities exist to sequester CO₂ while improving productivity and resilience in integrated, dynamic production systems with suitable tree-crop/livestock combinations with organic-fertilizer, bio-pesticide, and biochar.

Logistics and Post-harvest: In supply chains where cocoa is fermented before being sent to processors, cocoa husks, juice and sweating from fermentation create large waste streams that can be repurposed for value-added production of biochar, animal feed, or raising black soldier fly larvae for fish or poultry rearing.

Chocolate making process: The mid-lifecycle steps of cocoa processing require large energy inputs, especially for heat during roasting and electricity for operations. Process energy efficiency needs to be optimized and energy sources need to be shifted from conventional main electricity, wood, or liquified petroleum gas to renewable sources such as solar power and carbon-neutral energy from waste. Cocoa bean shell waste streams can also be redirected, ideally as input for bio-based packaging for cocoa and chocolate products.

3. SCOPE OF WORKS

The scope of works of this consulting package are identified as below:

- Measure and quantify carbon footprints along the value chain of cocoa and chocolate production of Marou in Vietnam by using LCA software (SimaPro or OpenLCA), or other suggested software.
- Compare to identify the best farming practices among complex/simple agroforestry system vs monocropping with agricultural practice (conventional vs organic) in the aspect of carbon emissions in different regions.
- Measure and quantify the carbon footprints of logistics and each production line of chocolate products (dark chocolate bar vs milk chocolate bar vs Marou bar vs Couverture drop bag).
- Develop a carbon neutrality roadmap with specific action plans to achieve carbon neutrality by 2030 and net zero by 2050 for the relevant stakeholders
- Write the Carbon footprint and Carbon neutrality reports, following ISO 14000.

This study focuses on product carbon footprint for cocoa-based products produced by cocoa farmers, fermenters, processors, and factories within the project area in Vietnam to assess emissions associated with production and carbon storage in the products throughout their life cycle. This assessment starts from the extraction of raw materials through processing, transport, use and disposal.

The primary data collection is presumed to be the major data collection method hence the tools should be prepared and discussed intensively with the Project Manager (Helvetas) and piloted in field. 2

- Target groups: The target groups include the cocoa farmers, cocoa collector/fermenters (with at

least 9 different fermenters) and cocoa/chocolate processors.

- Target location: 03 regions include Central Highland (Daklak, Lam Dong), Southeast region (Dong Nai, Ba Ria-Vung Tau), Mekong Delta (Ben Tre, Tien Giang) and chocolate factory in Ho Chi Minh City.
- Sampling: No specific requirement for sampling methods or sample size, the Consultant will propose the most appropriate ones, at least 50 farmers at 3 different regions.

The Consultant will work in close collaboration with the Helvetas's Project Manager and a representative of Marou Chocolate and other relevant stakeholders, if necessary.

4. METHODOLOGY

The Consultant(s) are required to propose appropriate qualitative and quantitative research methods for the study. However, the methodology used in principle should follow **the international ISO 14000 series standards** providing the basic requirements and methods for the assessment of the product carbon footprint and carbon neutrality.

5. REQUIRED QUALIFICATIONS

The consulting firm/team is suggested to be comprised of more than one consultant.

The main responsibilities of the team leader are:

- Develop the methodology for the research based on providing a robust evidence-base.
- Provide overall strategic guidance and be responsible for the overall study process.
- Develop the structure of the data template and list of needed data for product carbon footprint and carbon neutrality.
- Allocate tasks to the team members, supervise and guide the team members in implementing their tasks and be responsible for the overall quality control of the study.
- Coordinate with project partners and other stakeholders.
- Develop the carbon neutrality roadmap with action plan to achieve carbon neutrality by 2030 and net zero by 2050.
- Proficiency in and the use of LCA software (SimaPro or OpenLCA) is preferred.
- Write the Carbon footprint and Carbon neutrality reports, following ISO 14000 standards

The team leader should have the following qualifications:

- A specialist with significant professional experience in the implementation and application of product carbon footprint.
- Minimum of a master's degree in environmental (or relevant) sciences and minimum of 10 years' experience in conducting environmental or value chain studies relevant to carbon footprint measurement.
- Extensive quantitative and qualitative work, data analysis and modeling.
- Understanding cacao production and processing technologies, sustainable development and agricultural policies in Vietnam (would be an advantage).
- Understanding circular economy and regenerative agriculture (is preferred).
- Very good communication skills and professional working efficiency in English.

Other team members should be:

- A specialist in environmental and agricultural sciences or other relevant expertise.

- Excellent experience and knowledge of academic research on environmental impacts.
- Familiar with carbon footprint and neutrality standards and methods.
- Understanding raw materials and agricultural supply chain.
- Understanding cacao production and processing technologies (is helpful).
- Very good communication skills and professional working efficiency in English and Vietnamese.

6. DELIVERABLES

The Consultant is supposed to deliver the following deliverables on time at professional quality:

- A Final Consulting Report covering the 04 above-mentioned issues of the scope of work. The final report should be reviewed and approved by Marou & HELVETAS Vietnam (in English).
- A full set of cleaned data collected during the contract implementation process, both quantitative and qualitative.
- A presentation (Powerpoint) to summarize key fact findings and recommendations.

7. SUGGESTED TIME

The timeframe for this consultancy is between **July 1st, 2024 - December 30th, 2024** including both desk research and field works. The consultant must ensure the completion of the entire study and deliver required deliverables within this timeframe.

8. FINANCIAL AND FIELD TRAVELS

Financial proposal should be prepared in the unit of actual working days with the proposed rate of each individual consultants. The field travel plan of the consultants would be proposed in the Technical Proposal and attached to the contract afterward. Travel costs including airfare, airport taxi and ground travel, per diem and accommodation for field trips will be supported by the Project subjected to EU-based cost norms.

Candidates, who are interested in this work, please send your Technical Proposal, Financial Proposal and the team CVs to tuan.nguyen@helvetas.org and c/c: helvetas.vietnam@helvetas.org by **June 25, 2024**.