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## Term of Reference

**Service Package: Upgrading Coconut-based Biodegradable Pallets through research and development to promote circular economy adoption among MSMEs in the Mekong Region.**

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.

# BACKGROUND/CONTEXT

Under the SWITCH-Asia programme of the European Union, we are implementing 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 is implemented in four (04) years from 2022 to 2026 in 6-7 cacao provinces in the Central Highlands and the Mekong Delta of Vietnam.

Vietnam’s coconut industry has experienced significant growth, with over 200,000 hectares dedicated to coconut cultivation, yielding approximately 02 million tonnes annually. Ben Tre province is the capital of coconut production and the sector is contributing significantly to the income and livelihood of local people. Beyond the primary products, coconut waste - such as husks, shells, and coir - presents substantial potential for creating biodegradable materials. These by-products can be transformed into eco-friendly alternatives to conventional plastics and wood, contributing to environmental sustainability and waste reduction. In a notable development, the project’s partner NetZero Pallet, in collaboration with Can Tho University and the Ministry of Science and Technology, has successfully developed a prototype pallet made from coconut husk fibers.

To ensure widespread adoption for commercialization, especially among MSMEs in the Mekong region, further technical enhancements are necessary. For this purpose, HELVETAS Vietnam is seeking qualified service providers to conduct in-depth research and pilot deployment to improve the product durability, load-bearing capacity, and moisture resistance to meet industrial performance standards. Standardizing production processes is also crucial for scalability and integration into existing supply chains.

# OBJECTIVES

The overall objective of this service package is to enhance the efficiency and sustainability of the coconut value chain as well as to promote the circular economy approach within the agri-food production sector in the country. The specific objective to upgrade the existing coconut-based pallet into a commercially viable, industrial-grade logistics solution made entirely from agricultural waste.

# SCOPE OF WORK

This R&D service package should cover the following components:

1. **Research and Development:**

The R&D targets to improve the current version in 04 critical areas:

* **Eliminating wood content** by optimizing fiber blends solely from coconut-based and recycled biomass sources.
* **Enhancing water resistance** and minimizing material swelling during moisture exposure.
* Improving **anti-fungal and biological durability** under real-world storage and logistics conditions.
* Strengthening the **internal cohesion** to eliminate edge breakage, cracking, and surface delamination during pallet usage.
1. **Prototyping and Performance Testing:**
* Conduct pilot-scale production and field testing in collaboration with MSMEs in the Mekong region to validate real-world performance.
* Gather feedbacks from customers, businesses and stakeholders to improve the products.
1. **Communication and Reporting:**
* Organize a technical workshop to disseminate research findings, share successful pilot results, and engage with stakeholders from academia, industry, and government.
* Write the Final Report for documenting the whole project results with recommendations for future actions.

# REQUIRED QUALIFICATIONS

The Service Provider is recommended to be a company, laboratory, or a consortium composed of two legally registered entities in Vietnam. They should meet the following minimum qualifications:

* Having a demonstrated R&D capacity on bio-degradable packaging materials.
* Having adequate production capacity to create prototypes/samples of bio-materials.
* Proven track record in implementing similar projects on other agri-based waste products.
* Highly committed to innovation and sustainability.

The Service Provider will appoint a Team Leader who will be fully responsible for implementing and documenting the project. This personnel should have the following qualifications:

* Being a specialist with significant professional experience in research and development of bio-degradable materials.
* Having a solid background in bio-degradable materials, ideally with a postgraduate degree (Master’s or PhD) in a relevant field such as material science, chemical engineering, or environmental science.
* Comprehensive knowledge and hands-on experience in bio-degradable materials, material engineering, logistics and warehousing.
* Understanding on sustainable development and coconut industry in Vietnam would be an advantage.
* Strong communication skills and professional working efficiency in English.

# DELIVERABLES

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| **Work tasks** | **Deliverables**  |
| Research and Development | * R&D methodology, structure and implementation plan approved by Helvetas.
* R&D Report with supporting data and documents.
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| Prototyping and Performance Testing | * Sample products and evidences of propotypes used.
* Record of stakeholder’s feedbacks.
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| Communication and Reporting | * A technical workshop to be conducted (costs will be covered Helvetas).
* Project Final Report in English.
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# SUGGEST TIMELINE

| **Activities** | **Tentative timeline** |
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| Submission of proposals | By June 20th, 2025 |
| Short-list and contract negotiation | By June 27th, 2025 |
| Contract implementation  | From early July to end September (3 months) |

# TECHNICAL & FINANCIAL PROPOSALS

Interesting candidates should send their Technical & Financial Proposals to the Helvetas Vietnam – Circular Economy Cocoa Project at the following emails: helvetas.vietnam@helvetas.org and tuan.nguyen@helvetas.org.

* The Technical Proposal should outline the project approach and methodology, team composition and expertise, research and development plan, testing and quality assurance, and estimated timeline for the project.
* The Financial Proposal should indicate the cost breakdown, budget justification, consultant rates, and additional cost considerations of the project.

Deadline of submission: **June 20th, 2025.**