Enhancing soil health and resilient agricultural systems through biochar-based fertiliser

DATE: 23 July 2025

NAME OF CLIENT	HUSK CBF PTE LTD
WEBSITE	https://www.huskventures.com/
REGION	ASIA
COUNTRY	CAMBODIA (25%) AND VIETNAM (75%)
SECTOR	AGRICULTURE
SIGNING DATE	30 DAYS FROM PUBLICATION AT WEBSITE
TOTAL FINANCING	€121,305 GRANT
FUND	ORIGINATION FACILITY "OF"

- **Who is our (prospective) client?**

Husk CBF PTE Ltd. ("Husk") is a mission-driven agri-tech company focused on regenerative agriculture and soil health through the production of biochar-based fertilisers. Founded in Cambodia in 2019 Husk is now expanding its operations into Vietnam. The company transforms agricultural waste – primarily rice husks – into climate-resilient, crop-specific biochar fertilisers through a pyrolysis process that also sequesters carbon. Their long-term goal is to make climate-resilient, cost-effective, and regenerative fertilisers accessible to smallholder farmers across Southeast Asia.

Husk operates on a "B2B2C" model - distributing their products through farmer cooperatives, agricultural companies, and retail distributors to reach smallholder farmers. Their fertilisers address issues that are widespread in southeast Asia – low soil fertility, compaction, salinity, and nutrient depletion –

challenges that are forecast to worsen with climate change. To meet this need, in Cambodia, Husk already operates two pyrolysis units, and the DFCD Origination Facility is supporting them to raise investment and launch its first factory in Vietnam.

- **Why do we fund this project**?

Cambodia and Vietnam face rising climate risks that threaten agricultural productivity, soil quality, and rural livelihoods. Soil health and quality is already low across many agricultural ecosystems in southeast Asia, reducing the returns to agriculture and makes smallholders vulnerable to market and climatic shocks. Increasingly erratic rainfall, longer dry periods, and declining soil fertility are further compounding challenges for millions of smallholder farmers, who often lack the resources to adapt. This is a negative feedback cycle - in both countries, degraded soils reduce the resilience of agricultural systems and the people who depend on them and increases their vulnerability to climate change.

Husk's work directly addresses these root causes by offering regenerative, climate-resilient fertiliser solutions that build soil health over time. The production and application of biochar into the soils offer multiple potential benefits, including improved soil health and water retention, soil pH conditioning, and enhanced nutrient uptake and activation. It is a widely recognised – albeit context dependent – solution to several challenges in agriculture that is likely suitable across millions of hectares in southeast Asia.

The company's model aligns with SNV's commitment to strengthening climate-resilient, inclusive agricultural systems that restore ecosystems and improve rural incomes of smallholder farmers. This project also builds on SNV's prior engagement with Husk through the Innovations Against Poverty (IAP) programme[i] in Cambodia, and offers strong potential for replication and scaling in other climate vulnerable regions. By supporting Husk at this stage, DFCD and SNV can help de-risk and bolster private-sector solution that contributes to long-term soil regeneration, reduces emissions from synthetic fertilisers, and improves the adaptive capacity of farmers – particularly in areas most exposed to climate and environmental shocks.

- **What is the intended funding objective (type of activity)?**

The DFCD grant will support Husk to adapt the model that it has proven model across Cambodia and scale into Vietnam. Husk's products are highly tailored to specific crops and farming contexts, and their product lines and accompanying guidance on application for farmers are developed through ongoing R&D in collaboration with regional universities.

The objective of DFCD's support is to increase their investment readiness and capacity to scale through technical validation, supply chain partnerships, and market development for biochar fertiliser products in new markets and agricultural contexts zones. An estimated 25% of the support will help market growth in Cambodia and 75% in Vietnam. By supporting these activities, it is envisioned that Husk will be better positioned to raise investment into developing new production facilities and ultimately produce, distribute and market impactful and effective products to more farming households in Cambodia and Vietnam.

Figure 1: Examples of Husk's existing range of biochar-based products

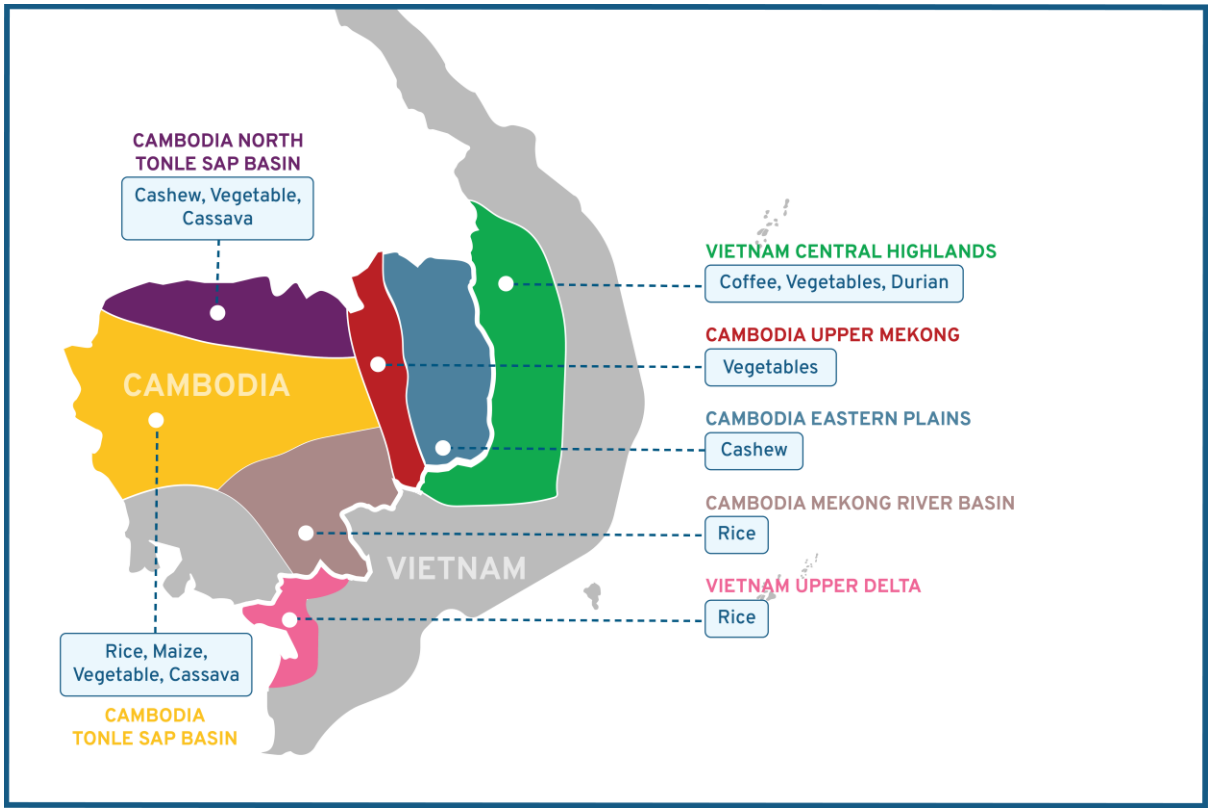
- **The grant will be used for undertaking:**

The Origination Facility grant, alongside Husk's own resources, will fund a set of activities that strengthen and de-risk Husk's ability to expand into new markets and agricultural areas in Vietnam and Cambodia.

These include

1. **Field trials:** Localised R&D partnerships with universities to validate product efficacy and soil health benefits.[ii]
2. **Feedstock supply and mill partnerships:** Development of long-term collaborations with rice mills to ensure consistent, high-quality input for pyrolysis units.
3. **Market adoption pilots:** Farmer and distributor trials to promote adoption of biochar fertilisers and generate sales data to support scale-up.
4. **Environmental and social management systems:** Localisation and implementation of ESG and GESI approaches and enhance mature carbon integrity policy frameworks, building on experience in Cambodia and adapted for the Vietnamese context.

Figure 2: Ongoing and planned trials and pilots being conducted by Husk and their partners to determine applicability and impact of their products in a range of different agricultural landscapes and crops.



- **What are the expected impacts of the company?**

The long term (2030) expected impacts of the proposed commercial investment of €3.425m which the Origination Facility aims to unlock include:

- 125,000 hectares of farmland applying biochar-based fertilizer and with more sustainable farming methods adopted.
- This increases their yields /net income by an estimated 15%.
- Increasing their livelihoods and improving resiliency for them and their family members – an estimated 390,000 people.
- Sequestering 8,500 tCo2eq per year[iii] through the pyrolysis of agricultural waste.[iv]

- **Environmental and social rationale**

The proposed project has strong alignment with DFCD's climate and biodiversity objectives. Soils across Cambodia and Vietnam suffer from low fertility, poor structure, and nutrient depletion – problems that are worsened by climate change. These degraded soils reduce the resilience of farming communities, particularly smallholders, to heat stress, erratic rainfall, and other climate hazards. Husk's biochar fertiliser products address these challenges by enhancing soil health, water retention, and nutrient cycling, while storing carbon in the soil over millennia.

Environmental and social safeguards will be integrated into the project from the outset. Feasibility studies will assess feedstock sourcing, land use, and community impacts. Husk will work closely with

SNV to ensure its ESG and GESI systems meet international standards and are localised for Vietnam. The project is aligned with national strategies for climate-resilient agriculture and is classified as Rio Marker 2 for climate adaptation.

For more information, or to share confidential insights on the intended project, please contact: dfcd@snv.org

[i] https://innovationsagainstpoverty.org/

[ii] Partnerships that will be supported using this grant will include Can Tho University, Nong Lam University, and the Soils and Fertilizers Institute in Vietnam; CARDI and Battambang University in Cambodia.

[iii] Based on third party verified data from the Carbon Standards International (CSI) with whom HUSK registers the carbon credits. This process undergoes annual third party audit and the total credits are then registered on a public platform.

[iv] All these figures are extrapolated from impact monitoring data from Husk's existing schemes.