

IMPACT SHEET: Circular Economy Cocoa: From Bean to Bar

Promoting circular economy approaches in the cocoa and agri-food sector



Turning cocoa waste and resources into value, resilience and greener growth.



PROJECT BACKGROUND

The EU funded SWITCH-Asia project “Circular Economy Cocoa: From Bean to Bar” (2022–2026) was implemented by Helvetas Intercooperation gGmbH and the Community Development Center (CDC) across Vietnam’s Central Highlands, South East and Mekong Delta. The project demonstrated how cocoa and wider agri-food value chains can adopt circular economy, regenerative agriculture, resource-efficiency, waste valorisation, digital traceability and greener packaging approaches while creating new business opportunities for farmers, cooperatives and MSMEs.

CHALLENGE

Circular economy is increasingly recognized as a way of reducing the environmental footprint of production and consumption, attracting increasing attention from consumers, businesses and policymakers around the world. While the approach is an emerging topic of discussion for government and business in Vietnam, awareness remains low and has not yet triggered a systemic transition from a conventional/linear economy to a more sustainable circular economy. The cocoa sector was selected because it is large and prominent enough to convincingly prove these concepts and achieve meaningful results, but small and cohesive enough to be a pioneering case. Like other agri-food subsectors, challenges exist at the farm production level (soil degradation and erosion, chemical overuse, water pollution, poor product quality), in factory processing (use of fossil energy, water use, generation of waste), and later in the lifecycle (harmful packaging choices). All of these are driven by a business and policy environment that does not yet recognize or prioritize circular economy models. Cocoa production has the potential to do no environment harm if properly managed, but best practices are not widespread. Regenerative and circular economy approaches are needed to enable sustainable economic growth and increase farmers’ incomes in Vietnam’s cocoa subsector, while decoupling this growth from rising carbon emissions, soil erosion and landslides, water pollution, hazardous chemical use, and solid waste generated by environmentally unfriendly packaging. Cocoa enterprises are still not aware of the circular economy but are willing to make the necessary changes if they are shown how it can be done productively and profitably. It is, therefore, essential to have circular economy success cases that convincingly demonstrate how regenerative agriculture and circular economy can be implemented across product lifecycles. A well-documented example, backed by policy, economic and technical research, is a precondition for the adoption of the circular economy by businesses, financial institutions, and policymakers.

PROJECT OBJECTIVES

To develop and adopt less polluting and more resource-efficient and circular products, processes, and services by MSMEs, thereby allowing their integration into global greener value and supply chains. The project addressed numerous issues facing the

Vietnamese cocoa and wider agri-food sectors. These included phasing out the use of hazardous chemicals in production, reducing the resource intensity of production and processing, introducing environmentally friendly bio-based packaging, and recirculating cocoa waste products as energy sources and raw materials for agricultural inputs and packaging. Digitalization of traceability also contributed to the development of more efficient and environmentally sound cocoa supply chains.

The specific objectives include:

- Transition the cocoa/chocolate subsector to regenerative and circular economy approaches at key points of the product lifecycle;
- Leverage change in the cocoa subsector to trigger the uptake of circular economy approaches in the wider agri-food sector;
- Prove the feasibility of closed-loop and circular production, providing an example for others to follow and informing supportive policies.

TARGET GROUPS

- **Advisory service providers & supply-chain businesses:** Develop training materials and provide farmers with inputs, advice, technologies, collection, and fermentation services, both directly and through supply-chain partnerships.
- **Cocoa and chocolate processors:** Drive the adoption of regenerative practices, strengthen sustainable supply chains, and invest in low-impact technologies, equipment, and packaging.
- **Research, academia and technology providers:** Develop and adapt IT, packaging, and other innovative solutions to reduce environmental impacts; conduct research, support innovation, and contribute to policy dialogue.
- **Policy makers and government bodies:** Contribute to policy development, institutional coordination, and resource allocation to support circular economy initiatives.
- **Non-cocoa agribusinesses & finance sector:** Promote and finance circular economy transitions, applying lessons from the cocoa sector to other agri-food sectors.

PROJECT ACTIVITIES

Regenerative and circular cocoa production

The project provided technical assistance, training and demonstrations to farmers, cooperatives, collectors and fermenters on regenerative, integrated and closed-loop cocoa production. Activities covered intercropping, agroforestry, biocomposts, organic inputs, soil and water management, waste valorisation, improved fermentation and sustainable collection/transport. By mid-2026, 4,015 farmers (2,787M; 1,228F) had been directly benefited through more than 80 training/

coaching and consulting activities, 12 fermenters/collectors had adopted sustainable practices, and 18 MSMEs applying new CE approaches in 04 agrifood sectors (cocoa, coconut, coffee, and cashew).

Circular processing, resource efficiency and digital traceability

The project supported cocoa and chocolate processors and agri-food MSMEs to reduce waste and improve energy and water efficiency through tailored technical assistance and technology demonstrations. Solutions included waste-to-biochar, waste-to-energy, renewable energy, bio-based packaging, biodegradable pallets and waste valorisation. A waste-to-energy solution and two bio-based packaging production lines were established and functioned. Digitalisation was advanced through farm data management and traceability systems, with around 3,200 cocoa farmers registered in digital systems operated by cocoa companies.

Replication, investment and policy uptake

The project generated evidence and case studies on the economic and environmental benefits of circular economy solutions and promoted their replication beyond cocoa. Four (04) case studies were completed, while partnerships with government, research institutions, financial institutions, MSMEs and cooperatives supported knowledge exchange and market uptake. Policy dialogues contributed to 04 policy initiatives proposed with the Ministry of Agriculture and Environment. More than €5.8 million in private-sector investment was mobilised for circular economy initiatives across cocoa and other agri-food sectors.

LESSONS LEARNED

The project faced several technical and market-related challenges in introducing circular economy practices. At the beginning, practical and locally adapted technologies for cocoa waste valorisation, renewable energy, bio-based packaging, resource efficiency and digital traceability were limited. Many MSMEs and cooperatives also lacked the technical capacity and experience to assess technologies, develop viable business models and integrate them into existing operations. These challenges were addressed through technical assessments, expert support, tailored coaching, pilot testing and demonstration of a portfolio of solutions. The project worked with research institutions, technology providers and businesses to adapt technologies to local conditions and generate practical evidence of their technical and commercial feasibility.

Secondly, weak linkages among actors in the value chain and the whole market system also constrained the uptake and scaling of circular economy solutions. In addition, the relatively low awareness and understanding of circular economy among communities and businesses, combined with limited capacity and high initial investment requirements, made enterprises cautious about adopting new technologies. The project responded by strengthening value-chain partnerships, organising training and communication activities, facilitating B2B and research-business linkages, and supporting enterprises to develop

commercially viable models. Investment and finance were increasingly integrated into the approach, helping demonstrate the business benefits of resource efficiency, waste valorisation and regenerative practices and mobilising private-sector investment for scaling.

The project demonstrated that successful circular economy adoption depends on combining technically feasible solutions with clear economic incentives and viable business models. Private-sector engagement is critical, as MSMEs and agri-cooperatives are the actors who ultimately invest in and sustain changes in farm production and factory processing practices. Practical solutions are therefore more effective when developed with enterprises and value-chain actors and linked to their real business needs. A “pilot - demonstrate - scale” approach proved effective: testing solutions under local conditions, demonstrating their technical and economic feasibility, documenting evidence and business cases, and then facilitating replication and “crowding-in” by other businesses and sectors. Strong partnerships among private companies, cooperatives, researchers, technology providers and local governments, together with continued technical support and market linkages, were essential to turn individual pilots into scalable circular economy models.

PROJECT ACHIEVEMENT

By the 4th year of implementation, the Project had moved from awareness and capacity building towards the practical adoption, investment and replication of circular economy solutions. Interventions were scaled beyond cocoa to the coffee, cashew and coconut value chains, while innovations and best practices in waste-to-value were promoted, including converting waste into compost, biochar and renewable energy; producing animal feed from processing by-products; applying water-saving irrigation technologies; strengthening digital household data management; and promoting sustainable standards and certification.

- 4,015 people (2,787 men; 1,228 women) were trained on circular economy solutions/practices, with an estimated 70% applying new practices on-farm and 30% reporting increased income.
- 12 cocoa fermenters/collectors adopted sustainable fermentation and transport practices.
- 5 cocoa companies shifted to circular economy approaches, while 13 agri-food companies and 5 cooperatives applied/ invested in CE beyond cocoa.
- 2 waste-to-biochar/energy solutions were implemented and 2 bio-based packaging production lines established.
- Around 3,200 cocoa farmers were registered in digital traceability systems, strengthening supply-chain transparency and market readiness.
- More than €5.8 million in private-sector investment was mobilised for implementing circular economy solutions.
- 4 policy initiatives were developed and proposed at the central and local government level.



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“ Plenty of opportunities for SCP/CE approach remain under discovered. With viable business models and a supportive ecosystem, we can turn these opportunities into practical solutions that create lasting economic value while delivering meaningful environmental benefits. ”

Long-term project sustainability

Sustainability will be maintained by strengthening economic incentives, partner ownership, and the integration of circular economy (CE) practices into conventional business and farming operations. Market-ready solutions, including waste-to-energy applications, bio-based packaging, and biodegradable pallets, provide tangible economic benefits that incentivise businesses and farmers to continue adopting and investing in CE practices beyond the project period. At the same time, trained farmers, cooperatives, MSMEs, service providers, and government partners will retain the knowledge, skills, and partnerships developed through the project, enabling them to continue applying, promoting, and supporting CE solutions within their respective value chains.

The proposed 9-month extension phase and the new EU-funded CircleGrow4C project (2026-2030) are designed to consolidate and scale the solutions that have been validated through the current cocoa project. These initiatives will support their uptake by new MSMEs and farmer groups and facilitate replication across the coffee, coconut, and cashew sectors. This approach will reduce the risk that successful pilots remain isolated demonstrations and instead create pathways for wider market adoption, institutional ownership, and continued investment. By embedding CE solutions into business models, farming practices, value-chain partnerships, and sectoral initiatives, the project will strengthen continuity and sustainability beyond donor support.

Project contributions to Climate Change Mitigation and SDGs

The project contributed to climate change mitigation by promoting circular and regenerative practices that reduce resource consumption, waste, and greenhouse gas emissions across the cocoa value chain. Farmers were supported to adopt more sustainable farming practices, including improved soil and farm management, while MSMEs and value-chain actors introduced solutions for the valorisation of cocoa by-products, such as waste-to-energy, waste-to-biochar, bio-based materials, and biodegradable packaging. These interventions helped reduce reliance on fossil-based inputs and environmentally harmful materials, improve resource efficiency, and create economic value from agricultural and processing waste. The project also strengthened awareness and capacity among farmers, cooperatives, MSMEs, service providers, and other stakeholders to integrate climate-resilient and low-emission practices into their regular operations.

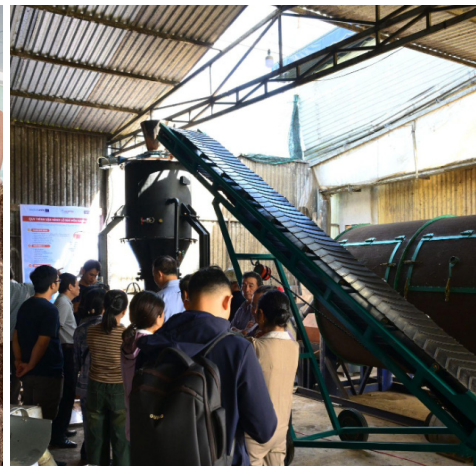
The project made a particularly strong contribution to **SDG 12** – Responsible Consumption and Production by demonstrating practical circular economy models that promote efficient use of resources, waste prevention, reuse, recycling, and the development of more sustainable products and production processes. By connecting farmers, businesses, technology providers, research institutions, and other value-chain actors, the project strengthened collaboration and enabled circular solutions to move from individual pilots towards systematic viable applications. The project's replication of CE approaches across cocoa and other agri-food sectors, including coffee, coconut, and cashew, further supports the transition towards more sustainable production and consumption patterns.

Beyond SDG 12, the project contributed to other SDGs by combining sustainable agricultural production, private-sector development, capacity building, and inclusive value-chain partnerships. Under **SDG 2** – Zero Hunger, regenerative farming practices, improved farm management, and better access to knowledge and services contributed to more resilient and productive farming systems and improved livelihood condition for cocoa farmers. The project also supported **SDG 8** – Decent Work and Economic Growth by strengthening MSMEs, cooperatives, and service providers, promoting green business models, and creating opportunities to increase the value of agricultural by-products. Capacity building and technical assistance helped businesses improve competitiveness while creating opportunities for income generation and green employment.

The project also contributed to **SDG 9** – Industry, Innovation and Infrastructure through the development and adoption of innovative circular technologies, digital traceability solutions, and improved processing and resource-efficiency systems. Its partnerships among MSMEs, farmers, technology providers, and public-sector actors strengthened innovation and knowledge transfer across the value chain. Contributions to **SDG 13** – Climate Action included promoting low-emission, resource-efficient and climate-resilient farming and processing practices, while **SDG 15** – Life on Land was supported through regenerative agriculture, improved soil health, reduced use of hazardous chemicals, and better management of agricultural waste. By linking these interventions across the value chain and facilitating replication in coffee, coconut, and cashew sectors, the project contributed to a broader transition towards inclusive, resilient and environmentally sustainable agri-food systems.

Impacts at a Glance

Economic Impact	• 4,015 people trained, with 30% reporting increased income. • Estimation of 60% agri-wastes in cocoa are repurposed to value materials/products. • €5.8+ million private-sector investment in CE initiatives by Year 4. • New business opportunities through resource efficiency, waste valorisation, value-added products, greener packaging and other supporting services.
Environmental Impact	• ~70% reduction in cocoa husks discarded into the environment. • ~30% reduction in irrigation water use through advanced technologies. • ~20% reduction in chemical inputs. • 2 waste-to-biochar/energy solutions developed. • 2 bio-based packaging production lines established. • 4 environmental and business case studies completed.
Social Impact	• 4,015 people trained (2,787 men; 1,228 women) on SCP/CE practices. • Capacity building for farmers, cooperatives and MSMEs, strengthening technical knowledge, business opportunities. • Improved working conditions through cleaner production practices and reduced use of chemical inputs. • Women and older people, who form a significant share of cocoa producers, have particularly benefited • More jobs created thanks circular economy related products and services (not yet measurable).
Green Finance	• Early engagement with impact investment funds, and commercial banks and development of investment-ready CE business models to improve access to green finance.
Target Group Engagement	• 18 MSMEs in cocoa and other agrifood sectors engaged and applying CE practices. • 12 fermenters/collectors adopted sustainable practices. • ~45 advisory service providers & supporting services are engaged to the ecosystem. • ~3,200 farmers registered in digital systems.
Policy Development	• 4 policy initiatives developed and proposed with the Ministry of Agriculture and Environment. • Policy dialogue, evidence-based recommendations, cocoa-sector policy engagement and integration of CE considerations into wider agri-food discussions.
Europe-Asia Cooperation	• Knowledge exchange and cooperation connecting Vietnamese cocoa/agri-food stakeholders with European actors and SWITCH-Asia networks.





FUNDING

EUR 1,939,438
(EU Contribution: 80%)



DURATION

2022 - July 2026



PARTNERS



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