CIRF CASE STUDY 2

From Coffee Waste to Community Nutrition

MOULINS DU NIL BLANC LIMITED (MNB) has built a symbiotic relationship with smallholder coffee farmers in Rwanda's Rubavu and Nyabihu Districts by transforming coffee waste into an input for mushroom production, creating a source of nutrition and income.

In Rwanda, many coffee farmers rely on their annual harvest as their sole livelihood, while land availability constraints restrict opportunities to diversify and expand crops. During coffee processing, large volumes of coffee waste are generated at wash stations and in the processing plants (coffee pulps and husks). MNB collects and repurposes those wastes as a medium for growing oyster mushrooms. The company then produces and sells compact mushroom production systems (tubes) that enable farmers to grow a short-cycle, highly productive and nutritious crop perfectly suited to their constraints. Once the mushroom substrate is spent, MNB closes the loop by converting it into compost and organic fertilizer for horticultural use.

MNB joined CIRF to enhance their circular business model, by strengthening post-harvest handling, enhancing value addition practices, increasing its market and client base, and overall furthering their mission to reduce waste and build resilience in their community.

SCOPING

CIRF began by conducting a circularity assessment of MNB's operations to identify key areas for improvement and targeted technical support. At the time of joining the program, MNB was facing significant post-harvest losses due to market instability, poor handling practices, and limited infrastructure and processing technology. Based on these findings, MNB received technical assistance to strengthen its capacity in post-harvest management, processing and value addition with the goal of extending the shelf-life of fresh mushrooms and reducing overall waste.



Community Impact Story

As a leader in the mushroom value chain in their district, MNB provides extension services and supplies production equipment to farmers and grower groups in their community.

The farmers who use MNB's mushrooms tubes have benefited from increased market connections through CIRF's market research. They report at least twelve new connections to and increased purchases from coffee shops.

MNB is expanding into the agro-tourism sector, since Rubavu is tourist destination. They opened up a coffee shop and demo farm with a farm to table concept, where they provide tours demonstrating coffee waste to mushrooms circularity.

SCALING

Under CIRF's technical assistance, MNB refined its product strategy and strengthened circular practices across its operations. Initially, MNB planned to introduce dried mushrooms as a new product line, but market testing showed low customer demand due to cost and value perceptions. The company instead pivoted toward fresh, ready-to-eat products like mushroom sambuusas and mushroom soup and also began developing packaged processed products like wet mushroom (packed in water or oil), ravioli, frozen mushrooms and cassava leaves for future expansion. MNB has developed prototypes of cassava leaf and mushroom powders, now awaiting certifications and shelf-life testing. To scale production, the company is seeking financing to upgrade its equipment, including cooling systems, pasteurization steamers, and packaging machinery—all key requirements for certification from Rwanda Standards Board (RSB).

CIRF's assistance led MNB to increase its production capacity, from 214 to over 1500 kgs of fresh mushrooms per quarter and from 400 to 1,400 mushroom tubes daily in 2024. Through the project's market linkages component, MNB expanded its customer and supplier base, with its prepared mushroom products now sold in cafés, hotels, and supermarkets.

CIRF also helped MNB identify supply chain shortages of cotton husks, spores, and farm waste. Despite this progress, current production at 10,500 mushroom tubes and 1500 kg of fresh mushroom per quarter still falls short of market demand, with an estimated 67-80% gap between supply and potential demand.

IMPACT

MNB utilizes about 4000 kgs of waste annually and has developed two new products—sambuusas and mushroom soup, with several others in the pipeline. MNB has expanded its customer base by 17 new clients, increasing monthly revenue by approximately 20% revenue (180,000 RWF, monthly). To support this growth, MNB has added two new staff positions with a lab technician and a chef. They have achieved a dramatic rise in sales of fresh mushrooms from 114,704 RWF in 2024 to over 6 million RWF as of September 2025.

Circularity in Business Operations

At the start of the program, on average, MNB purchased 14 steres of firewood monthly, a cost of 224,000 RWF. CIRF helped link MNB to a UNDP-Ministry of Environment program to acquire a solar heating unit which is used to pasteurize the mushroom substrate. With a functional renewable energy supply, firewood purchases dropped to 2.6 steres and the employees were reassigned to other tasks, with 338,000 RWF in cost savings.

With training to improve their traditional compost and vermicompost production, MNB also transitioned to 100% regenerative agricultural practices in their three-hectare farm, with costs savings of 90,000 RWF annual from the reduction in overhead for mineral fertilizer and 68,000 RWF per year reduction by replacing pesticides with vermiliquid and biopesticides.

These changes have led to nearly 20% reduction in operating costs.

