

# FOOD WASTE MANAGEMENT

Betrimex focuses attention on holistic food waste management. By optimizing production processes, recycling and reusing by-products, and collaborating with partners to transform waste into valuable products, Betrimex aims to reduce our environmental footprint while generating economic value.

## ZERO WASTE STRATEGY IN THE VALUE CHAIN

Betrimex positions **the Zero Waste Strategy** as a core compass guiding our entire coconut value chain. This strategy spans every stage, from the cultivation of raw materials to production, consumption, and the recycling and reusing of by-products. The goal is to minimize food waste generated during production. Betrimex strives **to create a closed-loop production ecosystem that maximizes resource efficiency** while delivering economic and social benefits to local communities.

#### Effectiveness of raw materials in each production stage





### **RESOURCE OPTIMIZATION - REDUCING MATERIAL WASTE**

To enhance resource efficiency and minimize material waste throughout our production processes, Betrimex has implemented a comprehensive set of optimization initiatives, with a focus on reducing input material losses.



### Loss analysis by production stage

- Apply Lean and Kaizen methodologies to identify and analyze loss points across each production phase.
- Develop Value Stream Mapping (VSM) to clearly distinguish between direct and indirect forms of material loss.

#### Raw Material Loss Control Program

- Establish a structured raw material loss control framework, including:
- Assign specific KPI targets to each operational team.
- Conduct weekly measurements and tracking of material losses.
- Analyze root causes using Ishikawa diagrams and the 5 WHYs method.

## Improvement of Standard Operating Procedure (SOP) and equipment operation techniques

- Optimize the speed and pressure settings of oil presses to maximize recovery efficiency.
- Refine filtration processes in coconut milk production to minimize material losses.





Significantly reduced losses of coconut water, coconut milk, oil residue, and coconut pulp, resulting in the conservation of hundreds of tons of raw materials.



Increased coconut milk recovery rate to 80%, greatly enhancing the efficiency of raw material utilization.

Through these efforts, Betrimex not only minimizes material waste but also improves overall production efficiency, lowers operational costs, and advances towards our sustainable development goals.



## PROACTIVELY TRANSFORMING COCONUT BY-PRODUCTS INTO HIGH-VALUE OPPORTUNITIES

Betrimex proactively forges strategic partnerships with organizations, businesses, and farming communities to develop innovative solutions for utilizing coconut by-products. Key initiatives include:



### Value chain collaboration with farming households

Coconut by-products (such as shells, husks, fibers, and leaves) are purchased directly from farming households and recycled into value-added products to create additional income streams for local communities.



### Utilization of coconut fiber and coir

In partnership with local enterprises, coconut fibers and coir are processed into organic growing media for sustainable agriculture and industrial crop cultivation.



#### Biochar production from coconut shells

Dried coconut shells are converted into biochar, a renewable energy source used in production processes, to reduce carbon emissions.



### Research and production of handicrafts from coconut leaves and fibers

Betrimex utilizes readily available coconut leaves and fibers to develop handcrafted products, contributing to the preservation of traditional craftsmanship and generating employment opportunities for rural women.

### **APPLYING AI IN PRODUCTION CHAIN AUTOMATION**

As part of our strategy to automate and digitize the coconut value chain, Betrimex has pioneered Vietnam's first Al-powered coconut counting solution, a breakthrough application of computer vision and artificial intelligence (AI) in the coconut industry. After 70 days of intensive research and testing, the system is now fully operational. It significantly enhances the speed and accuracy of coconut counting while seamlessly integrating with the SAP system.

A standout feature of this initiative is the use of components repurposed from existing equipment, contributing to achieving **the "Zero Waste" goal and reducing emissions**. The coconut counting machine not only optimizes the production process but also unlocks the potential to increase output by 2-3 times using the same resource base - a clear demonstration of Betrimex's dedication to sustainable innovation.



Reduced manual labor by 50%, doubled counting speed to 30,000 coconuts per hour, and reduced error rate to below 0.02%.

### **FUTURE COMMITMENT**

Betrimex is firmly committed to achieving Level 2 Zero Waste by 2040, ensuring that **100% of coconut value chain by-products are recycled or reused,** laying the foundation for a fully circular coconut economy. The company will continue expanding our partner network, investing in R&D for coconut-based products, and implementing training and community support programs to pave the way for a truly circular economy within the coconut industry.

