

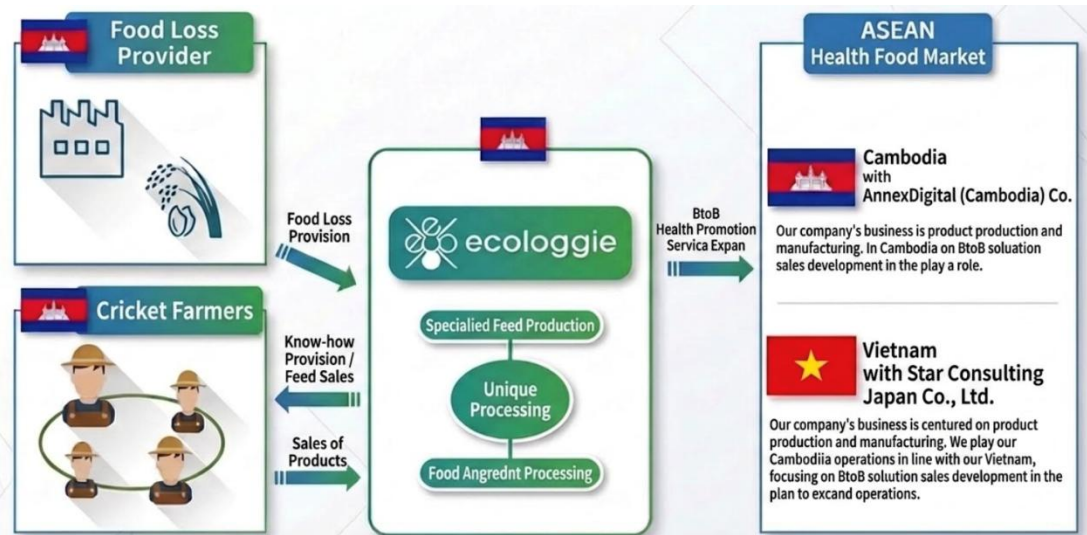
ecologie Inc.

Demonstration for the establishment of an environment-friendly food production system using insect crickets in the Kingdom of Cambodia

Objective of the project

We aim to establish a "decentralized cricket farming model" by outsourcing cricket farming to small-scale farmers in the ASEAN region, purchasing all their products, and generating stable income for them. We will also develop a "visualization" system to trace the process from raw material processing to product commercialization of crickets and quantify the reduction in environmental impact. This will improve farmers' profitability and create a new market in ASEAN with high-value-added health foods.

Cooperation with local companies/governments



Targeted economic/social issues

In Cambodia and other ASEAN countries, farmers' incomes have been stagnant, while there are persistent structural issues, such as climate risks, high electricity/logistics costs, and talent shortages.

Although agriculture accounts for about 30% of Cambodia's GDP and 50% of its workforce, farmers rely heavily on low-value-added crops like rice.

With only 1-2 harvest opportunities a year causing slow cash flows, and constant exposure to disasters like droughts and floods, improving farmers' livelihoods, diversifying agricultural practices, and promoting commercialization have become urgent tasks.

Meanwhile, health issues like obesity, hypertension, and high blood sugar are worsening in the ASEAN region, driving demand for nutritious health foods. Furthermore, to address global environmental issues, it is urgent to build sustainable food production systems to replace livestock farming, which consumes vast amounts of water and electricity and emits greenhouse gases.

Crickets and other insects are gaining attention as a next-generation food source with low environmental impact due to their short breeding periods and high feed efficiency. With a traditional insect-eating culture, the ASEAN region has the potential to solve these issues simultaneously.

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Demonstration period

October 2023 – December 2025

Details of demonstration

1. We strengthened collaboration with cricket farmers, mainly in Cambodia, and demonstrated the decentralized production model. We collected detailed data from 10 partner farmers on feeding, watering, ventilation, and yields, and purchased all farmed crickets. Additionally, we identified "mid-season drainage" in local rice farming, which is the main revenue source for almost all cricket farmers, as the most promising measure to reduce methane emissions.
2. In collaboration with a development partner, we developed a "visualization" system ensuring full supply chain traceability from cricket procurement to processing and commercialization. We designed and implemented algorithms comparing crickets protein sources with those of traditional livestock and allocating methane reduction effects from mid-season drainage to each product, enabling quantitative visualization using real data.
3. For the health food market research, we jointly developed and conducted a monitor demonstration of a "BtoB health care service" for local companies. By providing health condition reports to employees, we verified the acceptability and implementation barriers of cricket-based foods as a health.

Project outcome/ future plans

1. Decentralized cricket farming model

We established an advanced data collection system and full-purchase operation with 10 farmers, creating a model that sustainably improves their cash income. We will continue providing guidance and guaranteeing purchases to expand their stable side income.



(Site of cricket breeding farmer in Takeo Province, Cambodia)

2. "Visualization" system

We implemented traceability from cricket procurement to commercialization and began inputting real data. We identified mid-season drainage as a key methane reduction measure and completed defining requirements for an algorithm for comparing crickets with livestock and allocating effects per product. We will accumulate data, fully implement the system, and use these metrics for sustainable marketing.

3. Health food expansion

We shifted from BtoC to a BtoB healthcare service model, confirming high acceptability and potential demand through monitoring programs with Japanese companies.

We established a service model for monetization and will launch a paid service in 2026, strengthening the presentation of benefits to HR and management with decision-making authority, while expanding to Vietnam and other markets.