BSF LOMBOK

IMPLEMENTING CIRCULAR ECONOMY BUSINESS MODELS

ACCELERATING UNITED NATIONS' SDGS

BUILDING RESILLIENT COMMUNITIES

DECEMBER 2021

ANNUAL IMPACT REPORT

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WWW.FEEDWERKZ.COM

WHAT ARE WE

BSF Sengkol (Lombok) is a pilot project of Organic Waste Conversion established in 2020 using Black Soldier Fly in the area of Mandalika, Lombok Tengah.
Developed under a public-private partnership, BSF Lombok is an inclusive circular business model that provides social, economic and environmental benefits to the community while establishing resilient businesses that are compatible with our capacity to regenerate our resources and absorb our waste.

WHAT WE DO

BSF Sengkol Facility creates value out of waste by bio-converting Organic Municipal Waste into Compost and Whole Larva Protein Feed for Chickens and Fish.
BSF treatment method uses Insects, Black Soldier Fly, a natural system of Bioconversion, to help decompose our food without the need of special machines, electricity, nor sophisticated technology which allows the engagement and empowerment of low-income communities.

BSF LOMBOK ORGANIC WASTE CONVERSION

ACCELERATING SDGS

Out of 17 SDGS, BSF Lombok contributes to 12 SDGS

"Developing a circular agriculture based on the production of **black soldier flies (BSF)** as feed and using the BSF waste stream as biofertilizer can support poverty alleviation, food security, economic integration, sustainable communities in rural areas, thus promoting participation and reintegration of former conflict actors to support peace and justice." (K.Barragan, 2020)

ECONOMIC PILLAR

SDG 1: NO POVERTY

By creating new revenue models and jobs that require no high education, allowing locals, both men and women, to easily learn the process and do the job without any minimum pre-skilled requirements.

SDG 2: ZERO HUNGER

By producing both Natural Fertiliser which is proven to increase agricultural yields of local farmers by 30% and Organic Protein Feed which is a cheaper and healthier substitute to Poultry and Aquaculture Feed.

SDG 3: GOOD HEALTH & WELLBEING

By removing Organic Waste safely from landfills which create methane and off-gassing to neighbouring communities.

SDG 8: DECENT WORK & ECONOMIC GROWTH

By providing continuous trainings and job opportunities empowering the local community and creating new business models and revenues out of a market that didn't exist before.

BSF LOMBOK ORGANIC WASTE CONVERSION

ACCELERATING SDGS

ECONOMIC PILLAR

SDG 9: INDUSTRY, INNOVATION & INFRASTRUCTURE

By investing in circular economy business models and innovation in the form of industrial insect farming and waste management systems infrastructure.

ENVIRONMENTAL PILLAR

SDG 6: CLEAN WATER & SANITATION

By removing Organic Waste from public drains and open landfills, by training on BSF treatment of animal manure to avoid Typhoid contamination and by promoting Organic Natural Fertilizer instead of chemical fertilizers which pollute underground water sources.

SDG 12: RESPONSIBLE CONSUMPTION & PRODUCTION

By establishing a production model that emits No GHG and that converts a product of zero value into two end products of great positive impact.

SDG 13: CLIMATE ACTION

By creating clean resilient industries that use Nature as an alley without emitting CO2, avoiding methane production in landfills and returning nutrients back to the soil. By creating alternative protein feed that needs significant less land and water than the traditional soy plantations.

SDG 14: LIFE BELOW WATER

By producing alternative Aquaculture Feed to fisheries which currently account for 30% of the global wild fishing.

BSF LOMBOK ORGANIC WASTE CONVERSION

ACCELERATING SDGS

ENVIRONMENTAL PILLAR

SDG 15: LIFE ON LAND

By returning nutrients back to the soil by producing Natural Organic Fertiliser that improves the soil texture allowing it to hold more water and increase its bacterial and fungal activity.

SOCIAL PILLAR

SDG 5: GENDER EQUALITY

By creating inclusive employment and empowering, which includes women and youth.

SDG 12: PEACE, JUSTICE & STRONG INSTITUTIONS

By creating new revenue models that help low income communities in food security and poverty alleviation therefore contributing to support peace and justice.

BSF LOMBOK ORGANIC WASTE CONVERSION

ANNUAL IMPACT

First Year of Operations 20-21

EMPOWERING PEOPLE

FOCUS ON GENDER, DIVERSITY AND INCLUSION

TRAININGS PROVIDED:

1 — 25 — 0

BAMBOO CONSTRUCTION

Provide skills related to bamboo construction, bamboo structure design, bamboo forestry, cultivation and business.

2 — 23 — 14

BSF WASTE TREATMENT

Provide skills and knowledge on how to operate a BSF Facility, establish the nursery & breeding unit, treating waste and harvesting end products.

3 — 2 — 10

ORGANIC COMPOSTING

Provide skills on composting, to combine the BSF Residue (Frass) with the landscape waste to make the best fertiliser quality & business.

4 — 20 — 0

WASTE MANAGEMENT

Capability Building training for effective waste management system and implementation incorporating the existing players and infrastructure.

5 — 30 — 20

ORGANIC FERTILIZER

Provide knowledge & skills on organic fertilizer vs. chemical fertiliser and how to produce organic fertilizer out of food waste or animal manure.

6 — 160 — 46

POST PROCESSING BSF

Capability Building Training on post processing live BSF larvae into different end products: Protein Palates, Dried Larvae, Insect Oil, etc.

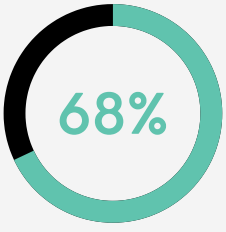
PEOPLE EMPLOYED AT BSF SENGKOL / GENDER EQUALITY:

BSF FACILITY

WASTE COLLECTION

COMPOSTING

5 MEN



11 WOMEN

PROMOTING NEW LOCAL SUSTAINABLE BUSINESS:

Two New Organic Chicken Farms have emerged in only one year in Sengkol Village.

1. Organic Chicken Farm Business Posyandu Womens' Association.
2. Organic Chicken Farm Business in Kuta.

BSF LOMBOK ORGANIC WASTE CONVERSION

ANNUAL IMPACT

First Year of Operations 20-21

ENVIRONMENTAL IMPACT

FOCUSING ON CIRCULARITY

REGENERATING LAND:

Our Compost is a mix between the Frass (Larvae Poop) and the Takakura Composting method.
This way we can assume both food waste and landscape waste.

2,850kg

ORGANIC COMPOST SOLD

WASTE CONVERSION:

Our Black Soldier Fly Larvas help reduce the volume of Organic Waste and convert it into Frass + Larva, which is an alternative to Protein Feed for Chickens and Fish.

34 tons

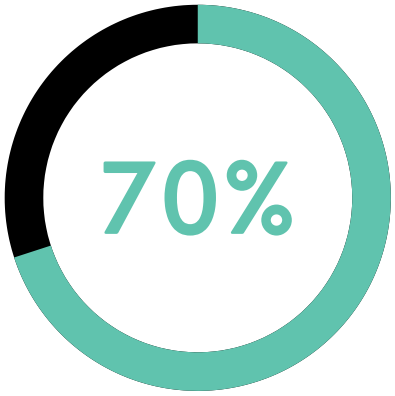
ORGANIC WASTE COLLECTED

30%

FROM FOOD DISTRIBUTORS EXPIRY PRODUCTS

70%

MUNICIPAL WASTE COLLECTED FROM SENGKOL – KUTA AREA



29 tons

ORGANIC WASTE CONVERTED

57%

WASTE VOLUME REDUCTION

1 tons

LIVE LARVA SOLD

PROMOTING CIRCULAR ECONOMY BUSINESSES:

We believe that moving towards a circular economy is our only path to meaningful economical, environmental and social impact. Our aim is to show that organic waste can be a valuable product that can contribute to Net Positive Agriculture and to lower GHG Emissions.

BSF LOMBOK ORGANIC WASTE CONVERSION

NEXT STEPS

Future Goals

Where do you go from here?

The current Facility Performance after one year of operations is at 10% of its capacity.
This circumstance, mostly due to Covid Pandemic, means the business is not yet economically viable.
Once the target of 1 ton organic waste/day is achieved, the monthly revenue will be greater than 3,500 USD/month with a monthly profit of 2,000 USD/month, becoming a profitable business model.
Note: The facility sold 100% of it's production of Compost and Larva to local farmers from Sengkol.

1

ACTION OR COMMITMENT

The local authorities must increase the Waste Collection Capabilities so that the facility can maximise its capacity and become economically viable.

2

ACTION OR COMMITMENT

There must be waste sourcing educational programs on local communities and markets to avoid waste contamination and improve the waste conversion capacity.

3

ACTION OR COMMITMENT

Private Sector Engagement is essential in order to continue the positive impact in the region. CSR Budgets, Philanthropic Fundraises and Donations are key in order to scale up.

4

ACTION OR COMMITMENT

Policy Development and Implementation is essential to legally develop Circular Economy Businesses around NTB Province, Indonesia.

ABOUT US

FeedWerkz

Better Feed, Better Future.

FeedWerkz is a venture company under RENERGii Asia. We are an organisation specialized in Circular Food Systems and Insect Farming.

Our Mission is to help the current Food Production System to absorb its waste and become Circular. Our Insect Technology has been designed by the most powerful engineer of all times: MOTHER NATURE.
Out of a waste stream with almost no value, organic waste, we create an industrial Waste Conversion System that upcycles Organic Residue into compost and alternative protein farming feed. We believe that only by working together and sharing knowledge we can make a real impact and accelerate the transition towards a Circular Economy.
We help businesses and communities to learn and create circular business that are resilient and can absorb their waste.

With businesses, we are currently working with Palm Oil Mills Processing Plants to make them Zero Waste and creating by-products that reduce the impacts of monoculture.

With communities, we help develop and fund local circular inclusive start-ups that bring economic, environmental and social benefits to the area and that can be easily copied elsewhere.

BSF LOMBOK

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Want to know more?

STAY IN TOUCH

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This project would have not been possible with the contributions of:

Kementerian PPN/ Bappenas

BUMDES SENGKOL

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renergi

PROBSF

eawag aquatic research

BSF LOMBOK ORGANIC WASTE CONVERSION SYSTEM

KALBE

BAMBOOK SUSTAINABLE ARCHITECTURE & DESIGN