# IITA BBEST DIGEST

VOL 4 FEBRUARY 2024

IITA BBEST

BSF FOR BIO CIRCULAR ECONOMY AND ENVIRONMENTAL SUSTAINABILITY

## In this edition:


- Capacity-building on Black Soldier Fly (BSF) Technology by AALI in DRC
- Exchange visit to Ghana by IITA and AALI team
- Capacity-building of the AALI team at Maggot Farms in Rwanda.
- Awareness Creation Workshop on BSF product standards.
- Awareness creation workshop for vegetable farmers and livestock producers in N'djili.
- Participation of the BBEST Project in the GSA 33RD Biennial Conference.
- Presentation of BSF dismountable Kits to agripreneurs in Mali.
- Exhibition at the IER Technologies Fair.
- Exhibition at the Norwegian Day in Niger.
- Participation in the Technology Exhibition at JRI
- Exhibition of BSF technology at Agrifest 2023
- IITA BBEST Annual Review Meeting with Partners


## MESSAGE FROM THE PROJECT MANAGEMENT TEAM

Dear partners, stakeholders, beneficiaries, and IITA BBEST Digest readers,
As we embrace the possibilities of the new year, the Project Management Team extends warm wishes for a year filled with peace, joy, and prosperity. We are excited to present the Fourth Edition of the IITA BBEST Digest, offering exclusive insights into recent accomplishments. Explore the edition to learn about training programs, exchange visits, and the positive impact of BBEST on smallholder chicken, fish, pig, and vegetable producers, as well as youth agripreneurs and women in rural and urban communities.
We appreciate the dedicated team behind this initiative, led by IITA, and extend heartfelt thanks to partners and collaborators for their remarkable contributions.
Together, we are shaping a prosperous agricultural future. To our valued readers, your unwavering support is cherished. Dive into the newsletter to discover the transformative effects of BSF technology on farmers' lives.
Wishing you a Happy New Year and an enlightening reading experience.

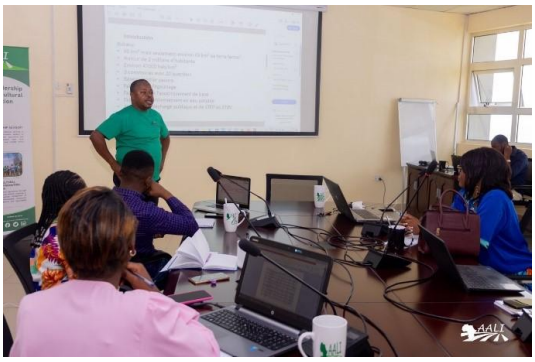
**BBEST PROJECT MANAGEMENT TEAM**

## CAPACITY BUILDING ON BLACK SOLDIER FLY (BSF) TECHNOLOGY BY AALI IN DRC.

In a collaborative effort, the BSF for Bio-Circular Economy and Environmental Sustainability (BBEST), led by IITA and the African Agricultural Institute Leadership (AALI), conducted a significant training program for selected farmers and youth in Bukavu. The training, held from July 24 to August 9, 2023, focused on Black Soldier Fly (BSF) technology for the recycling of bio-waste by the black soldier fly.

The primary objective of the training was to empower farmers and youth with practical knowledge and skills related to BSF technology. The overarching goal was to facilitate the initiation of Black Soldier Fly rearing and enable the subsequent production of larvae for livestock and frass for soil fertility.

The facilitators delivered both theoretical sessions and hands-on training, ensuring participants were well-prepared to adopt the technology, contributing to a sustainable agricultural landscape.



*Training on the Black Soldier Fly led by AALI in Bukavu*

## EXCHANGE VISIT TO GHANA BY IITA AND AALI.

A team from the African Agricultural Leadership Institute (AALI), including Prof. David Bugeme and Mr. Eustache Ntaboba, along with BBEST Project Coordinator Dr. Mawufe, visited the regional office of the BBEST Project in Accra in July.

The purpose of the visit was to gather firsthand information on the production of the black soldier fly in Ghana.

During the visit, the team explored the decentralized units constructed by the BBEST project for livestock producers and farmers, as well as the central unit, the main production unit of BSF being built in Ghana. This visit provided detailed insights into the techniques and designs of the processing units, the equipment used, and the practices of BSF farming.

**Visit of the DRC team to the Decentralized unit in Ghana.**

## CAPACITY BUILDING OF THE AALI TEAM AT MAGGOT FARMS IN RWANDA.

In the quest for comprehensive expertise in Black Soldier Fly (BSF) larvae and frass production, the BBEST technical team at AALI conducted an enlightening visit to Maggot Farms in Kigali, Rwanda.

The team, consisting of LOUANGE, ROSINE, TATIANA, and MOISE, acquired both theoretical and practical skills in the application of BSF technology by MAGGOT FARMS. These newfound skills will be instrumental in the processing units currently under construction, aiming to enhance the perception, production, and utilization of Black Soldier Fly products in Bukavu.


The exchange visit covered essential aspects, including a well-organized waste collection system and the proficiency of a BSF unit in gathering raw materials to feed the larvae.

**African Agriculture Leadership Institute at the Maggot Farms production in Rwanda.**

Additionally, the team received training in waste sorting techniques and learned the preparation (draining, grinding, disinfection) and mixing of various types of bio-waste crucial for efficient BSF

larvae production.

The acquired skills at MAGGOT FARM have equipped the BBEST team at AALI with innovative insights to enhance BSF larvae production and utilization. The team is now capable of replicating this technology nationwide. The training empowered them with cutting-edge technologies and practical expertise in transforming BSF larvae into flour, suitable for incorporation into various food products.

## AWARENESS-CREATION WORKSHOP FOR KEY STAKEHOLDERS OF THE BBEST PROJECT

Following the development of standards for BSF-based products, the Council for Scientific and Industrial Research (CSIR-IIR) conducted an informative workshop for stakeholders. The workshop, organized in two sessions, featured an overview of the BSF for Bio Circular Economy and Environmental Sustainability (BBEST) project by the country coordinator.

In the second session, Mr. Samuel Kwatia from the Ghana Standards Authority (GSA) presented on raising awareness of the Dried Insect Products Standard. Dr. Enoch Selorm Kofi Ofori from the Agricultural Biotechnology and Nuclear Research Institute (BNARI) followed with a presentation on good practices in black soldier fly farming in Ghana.

GSA's presentation covered various aspects, including scope, normative references, terms and definitions, requirements, crude protein classification, hygiene, contaminants, packaging and labeling, sampling, and compliance criteria for dried insect products.

The standard specifies requirements, sampling, and test methods for dried insect products intended for compound feed, including dried insect products as feed ingredients. The nutritional requirements for dried BSF larvae were outlined in the table, covering general and specific requirements for whole edible insects, crushed edible insect products, defatted edible insect products, and extruded edible insect products.

The second presentation focused on good practices in breeding black soldier flies in Ghana. Dr. Ofori emphasized the effectiveness of BSF in reducing organic waste biomass by 50-60%, converting it into protein-rich biomass. He highlighted the fly's lower greenhouse gas emissions compared to other farm animals and emphasized optimal breeding conditions such as

**CSIR-IIR, BNARI, GSA and participants during the awareness creation workshop**

temperature, a dark environment for fertilization, and a clean space to prevent contamination.

## AWARENESS CREATION WORKSHOP FOR FARMERS AT N'DJILI in DRC.

In collaboration with the IITA BBEST project, the Institut National pour l'Etude et la Recherche Agronomique (INERA) organized an awareness creation workshop for agripreneurs in N'djili, DRC. The event aimed to illuminate the innovative process of Black Soldier Fly (BSF) production and raise awareness about the larvae's uses as feed for chicken, fish, and pigs. Participants gained insights into the advantages of utilizing BSF-based organic fertilizers for soil fertility and vegetable growth.

This awareness creation initiative equipped participants to adopt this new technology in their livestock and vegetable production activities.

Post-awareness, participants expressed a keen desire for swift training to become producers of BSF larvae on their respective farms. This not only enhances their productivity but also reduces production expenses, fostering competitiveness in the local consumer market.

Each participant learned formulation and infestation techniques, harvesting protocols, substrate selection and volume considerations, attractant application, incubation post-infestation, monitoring humidity and riddling during the evolution and harvest phases, predator observation, and the setup for maggot production experiments.

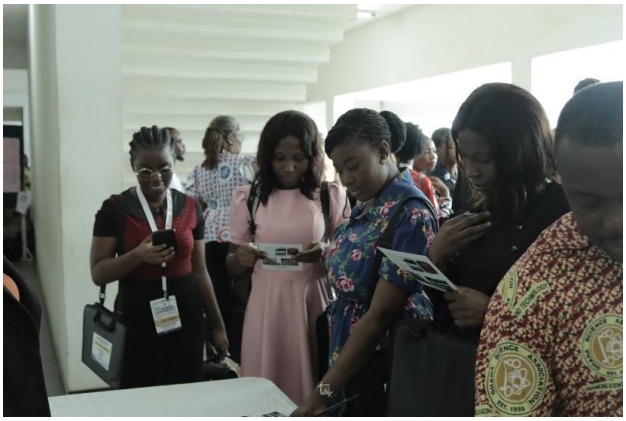

**Participants at the awareness workshop organized by INERA in N'djili.**

## PARTICIPATION IN THE GSA 33RD BIENNIAL CONFERENCE IN GHANA.

The IITA BBEST project actively engaged in the Science Week, part of the Ghana Science Association's 33rd Biennial Conference at the University of Ghana, Legon. The project, alongside other IITA-led initiatives, showcased the Black Soldier Fly (BSF) technology and its by-products: dried larvae, pellets, fish meal, and frass for vegetable production.

Visitors to the IITA stand received information on farming the fly, the recommended volume of BSF fertilizer for vegetable farming, and the nutritional values of BSF larvae. The life cycle of the

fly and the project's units to support farmers and livestock producers were explained, leading to some visitors expressing interest in BSF technology training.

**Participants at IITA stand during the 33rd biennial conference at the University of Ghana, Accra.**

## PRESENTATION OF BSF DISMOUNTABLE KITS TO AGRIPRENEURS IN MALI.

Following the training workshop for entrepreneurs on Black Soldier Fly Farming techniques held on September 30, 2023, and the IER Technology Park's open day on October 19, two prominent figures engaged in the farming ordinary flies for poultry and fish feed requested individual kits and larvae from the IITA-BBEST project to start their production of the Black Soldier Fly. Dr. Tahirou Abdoulaye, IITA Sahel Hub Director presented the kits to the two agripreneurs, Dr. Bourema Dembélé, former CEO of the IER, and Dr. Tati Simaga, a pediatrician at the Gabriel Touré Hospital in Bamako.


**IITA Sahel Hub Director with the beneficiaries of the BSF dismountable kits**

## PARTICIPATION IN THE IER TECHNOLOGY EXHIBITION.

As part of the TARSPRO-Mali project and the Programme de Resilience des Systèmes Alimentaires (PERSA), IER organized an exhibition showcasing smart agricultural technologies to enhance family farm resilience to climate change. The IITA-BBEST Mali team actively participated in this exhibition on October 19, 2023, in Sotuba.

The team demonstrated the BSF technology, emphasizing its economic and environmental significance in chicken and fish feed. Additionally, the importance of utilizing organic manure derived from the BSF larvae was highlighted, showcasing employment opportunities for young people and women entrepreneurs.

**Exhibition of the BSF technology at the Programme de Resilience des Systemes Alimentaires (PERSA)**

## PARTICIPATION IN THE TECHNOLOGY EXHIBITION AT JRI.

The BSF for Bio circular Economy and Environmental Sustainability (BBEST) took part in the Research and Innovation Day in Mali, from November 6 to 9, 2023. the Institute of Rural Economy (IER) showcased the BSF technology, and the stand attracted visitors from various countries who expressed interest in the extension of the project to Guinea, Togo, and Benin.

**Visitors at the BBEST project stand during the JRI**

## PARTICIPATION OF INRAN IN THE NORWEGIAN DAY

Under the leadership of H.E. Mr. Mahaman El Hadj Ousmane, Minister of Agriculture and Livestock, the joint information day for projects financed by the Kingdom of Norway was organized by INRAN, with funding from the IITA BBEST project, CSAT, and Care on November 7, 2023, at the Radisson Hotel in Niamey.

The objective was to evaluate the progress and strengths of projects financed by Norway and coordinated by INRAN. More than 300 participants from areas where the projects are active were present at the event, with representatives from various coordinating actors physically present and others joining via Zoom. The central theme discussed was the "Contribution of the REDSAACC, CSAT, and IITA BBEST projects in improving food and nutrition security in Niger in the context of climate change."

**Dignitaries and participants visiting the BBEST project stand during the Norwegian Day in Niger**

## BBEST PROJECT PARTICIPATION IN AGRIFEST IN GHANA

Under the chairmanship of the Ministry of Food and Livestock in Ghana, Agrifest 2023 was held from November 27 to December 1, 2023, crowned by a special day of awards to farmers, livestock producers and fishermen who contribute through their efforts to the development of the country on December 1.

Agrifest is celebrated every first Friday in December to honor the tireless effort and contribution of peasants who feed the nation and contribute to the socio-economic development of the country. The celebration was held under the theme: "Providing Smart Solutions for Sustainable and Resilient Food Security".

IITA BBEST took part in the event and took the opportunity to showcase the BSF technology through the set-up of the BSF village at the One CGIAR booth. The team informed the visitors about the technology and life cycle of the fly; the products obtained from the BSF. Among the visitors were young people, farmers, livestock producers and officers from various agricultural institutions, livestock and fertilizer manufacturing.

Many visitors demonstrated an interest in the technology that aims to help improve the livelihoods of smallholder chicken, fish, pig, and vegetable producers as well as other actors in the value chain and contribute to improved urban sanitation and climate change mitigation.



**Visitors inquiring about the BSF technology at the One CGIAR booth during the Agrifest**

## IMPROVING SMALLHOLDER FARMERS' LIVELIHOODS THROUGH ENVIRONMENTAL SUSTAINABILITY.

The International Institute of Tropical Agriculture- led BSF for Bio Circular Economy and Environmental Sustainability (BBEST) Project, Regional Office in Ghana, hosted its partners from Mali, Niger, Norway, and the Democratic Republic of Congo (DRC) for its annual review forum and planning meeting in Accra from January 22 to 26.

This forum served as a platform for reflecting on achievements, sharing ideas, learning, and collaboration among partners from the implementing countries and stakeholders. The forum commenced with an opening address by Hon. Alhaji Hardi Tuferu, the Deputy Minister of Food and Agriculture in charge of livestock and a Member of Parliament for the Nanton Constituency.

Tuferu emphasized the government's commitment to implementing the livestock and poultry component of its five-year strategy to increase production and ensure food security.

Acknowledging the pivotal role of livestock in ensuring food security and fostering economic development, Tuferu highlighted the challenge faced by livestock producers in recent times—the high cost of protein meals for their chicken, fish, and pigs.

He identified the BBEST Project as an initiative that could contribute to government goals, addressing environmental concerns and creating opportunities for economic growth and increased food production, aligning with over 50% of the Sustainable Development Goals (SDGs).

Madam Silje Maria Hanstad, Senior Adviser at the Department for Climate and Environment, Section for Food (NORAD), emphasized the positive impact of the BBEST Project and the potential of Black Soldier Fly (BSF) to address challenges in food production and waste management.

She encouraged the participants to build a business case for private investment in sustainable biowaste management and the production of animal and fish feed and organic fertilizer in Accra, Bamako, Bukavu, Kinshasa, and Niamey.

Richard Asare, IITA-CGIAR Ghana Country Representative, highlighted project achievements, including the development of standards for dried BSF products for compounded animal feed by the Ghana Standard Authority, the operational treatment facility at Kofisah in the Nsawam Adoagyiri Municipal Assembly, where production has commenced, and the establishment of decentralized units for farmers.


**Pictures of IITA BBEST Project Annual review and planning meeting in Accra.**

**IITA BBEST DIGEST** is a quarterly newsletter produced by **IITA BBEST Project, Ghana**.

**Contributors**: IITA BBEST Project partners and Francisca Adjo Ocloo

**Layout and editing**: Francisca Adjo Ocloo, Communications Officer for IITA BBEST Project.