IITA BBEST DIGEST

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IITA
BBEST
BSF FOR BIO CIRCULAR ECONOMY
AND ENVIRONMENTAL SUSTAINABILITY

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MESSAGE OF THE COORDINATOR

Dear Team and esteemed partners,

I am thrilled to announce the latest edition of the BBEST newsletter. As we continue to work together toward our common goal, I want to acknowledge your dedication and hard work which have contributed immensely to where we are today.

I am confident that with our collective efforts, we will achieve more milestones for the future. Our collaboration will help us achieve great things in the future.

I extend my heartfelt gratitude to everyone whose action is contributing to the project.

let's continue to strive for success and make positive changes in the lives of farmers and livestock producers.

Mawufe Komi Agbodzavu (Ph.D)

BBEST PROJECT COORDINATOR

NORAD EXPLORES THE IITA-IMPLEMENTED BSF TECHNOLOGY FOR IMPACT IN DRC.

The BSF For Bio Circular Economy and Environmental Sustainability (BBEST) project led by IITA in collaboration with the University of Kinshasa (UNIKIN) welcomed a delegation from the Norwegian Agency for Development Cooperation (NORAD) to Kinshasa in the Democratic Republic of Congo (DRC).

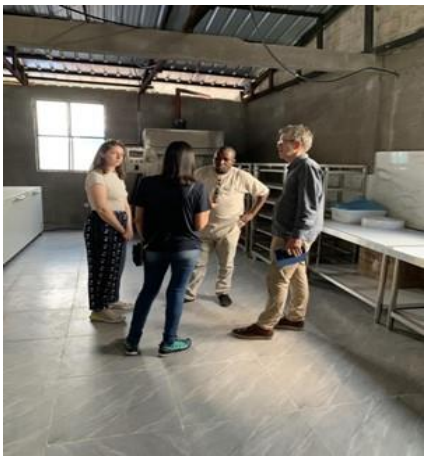
During their visit, the team led by Monica Camacho explored the activities of IITA and its partners in the country, namely the construction of decentralized units that aim to empower smallholder vegetable farmers and livestock producers to produce black soldier fly (BSF) larvae. The team also appreciated the research activities, undertaken by the University of Kinshasa (UNIKIN).

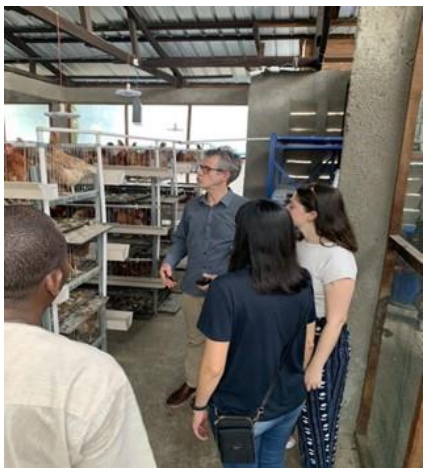
IITA highlighted the importance of the project, which uses the black soldier fly to transform organic waste into animal feed and organic fertilizer for vegetables and plants.

The team explored the research activities underway in the UNIKIN laboratories. The visit to the laboratory was followed by a tour of their black soldier fly-rearing site, which enabled them to see the activities in progress.

The IITA team led the NORAD team to one of the decentralized units, co-financed by the BBEST Project to undertake the production of black soldier fly larvae for livestock, vegetable production, and soil restoration.

The visit provided the platform for the NORAD team to interact with the project partners in DRC, understand the project implementation by IITA and its partners, and enquire on the way forward.

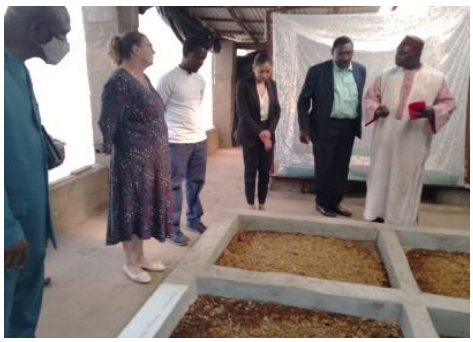


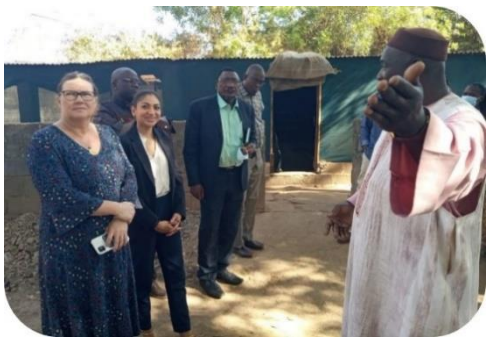


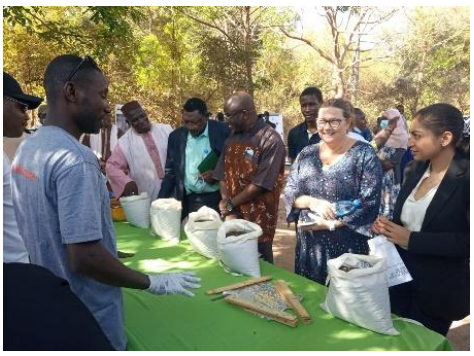
The NORAD Team, led by Monica Camacho during their visit to UNIKIN and to one of the decentralized units in Kinshasa.

NORWAY AMBASSADOR VISITS THE BBEST PROJECT IN MALI.

The BSF for Bio Circular Economy and Environmental Sustainability (BBEST) led by IITA in collaboration with the Institute of Rural Economy (IER) in Bamako was graced by H.E Elianne Rigmor Koti and Melissa Sovik from the Norwegian Embassy to Mali. The visit Highlighted the impactful work of the NORAD-funded BBEST project in the country.
Dr Sissoko elaborated on the project activities and showcased some of their achievements. He noted an increase in the production of the BSF fresh and dried larvae and the BSF frass. Through its capacity-building programs, the country's project team equipped farmers, women, and agripreneurs to adopt this new and sustainable agriculture practice, which is immensely impacting their lives.
The visit provided firsthand information on the rearing of flies; the substrates used to feed the larvae, the drying methods, the sources of the waste among others, and the progress made by the project in the country.







H.E Rigmor Koti and Melissa Sovik during their visit to the BSF rearing unit at Centre Regional de Recherche Agronomique.

Additionally, a tour of the BSF mass production unit, established at the Centre Regional de Recherche Agronomique (CRRA) was orchestrated by Dr Sissoko. This immersive experience elucidated the Black Soldier Fly's life cycle and growth process, unveiling the significance of the love cage and the dark cage in facilitating optimal breeding conditions. Displaying the

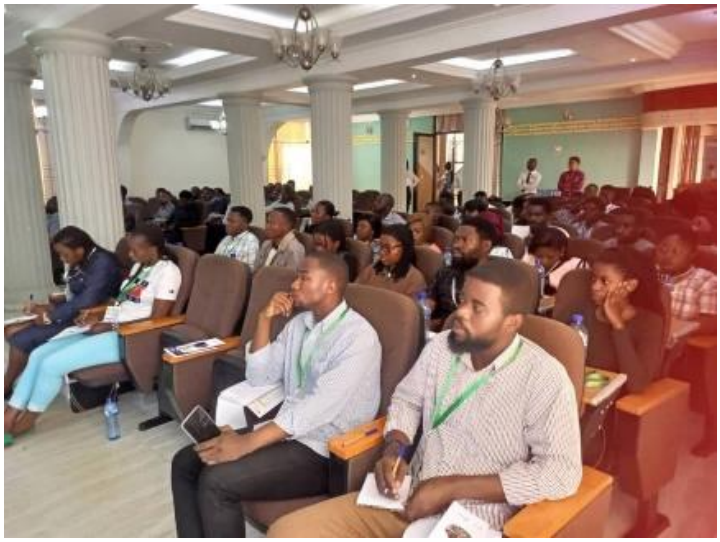
dismountable BSF kits showcased the accessibility and affordability of initiating Black Soldier Fly production on a small scale.
An array of BSF products was showcased, accompanied by practical demonstrations of their application. The ambassador and her secretary's visit provided a platform for a lively exchange of ideas, reflections on the team's strategies and some challenges, and the team's commitment to address those challenges.

AALI SENSITIZED WOMEN AND THE YOUTH ON THE GROUNDBREAKING BSF TECHNOLOGY IN SOUTH KIVU.

How can the issue of biowaste be addressed in our municipalities, especially in Bukavu? The IITA BBEST project is turning the biowaste and urban sanitation challenge into a business opportunity for farmers, women, the youth, and agripreneurs through its ground-breaking technology of Black Soldier Fly.
About 105 youth in Bukavu and Kavumu were sensitized and trained on the BSF technology during a workshop organized by the African Agricultural Leadership Institute (AALI), one of the BBEST project partners in the Democratic Republic of Congo (DRC). The workshop aimed at strengthening their knowledge and entrepreneurial spirit around BSF technology, and specifically demonstrating the benefits of BSF to women vegetable producers in the production of organic fertilizer at a lower cost and young entrepreneurs involved in biowaste management in the city of Bukavu and surrounding areas.
Eighty (80) female vegetable producers who participated in the training workshop, shared their experiences in small-scale production and expressed their enthusiasm for adopting this technology, not only for their work in the fields but also in managing organic waste at home.
Among the 105 youth who participated in the sensitization and training, workshop are members of youth organizations active in organic waste management and the production of black soldier fly larvae in South Kivu, and others who are entrepreneurs or graduate students interested in rearing this fly.
Mr. Murhula, the representative of "La Briquette du Kivu," highlighted the importance of the Black Soldier Fly in managing organic waste. Indeed, the larvae of the black soldier fly can be used as a source of protein in animal feed, while the residues from their rearing can be transformed into nutrient-rich fertilizers for horticultural crops, he noted.
Mr. Moustafa Kigangu, the RUNRES Project Officer explained to the participants that the waste management project in the city of Bukavu has been implemented by IITA since 2019, and the BBEST project strengthens the initiative by using a new approach, that of the black soldier fly.

This stride taken by AALI and the BBEST project to demonstrate the BSF technology as a sustainable business opportunity from waste collection to waste treatment and finally, the sales of the BSF by-

products highlight the importance of waste management in the DRC, especially in Bukavu and is welcomed by the participants to the sensitization workshop.



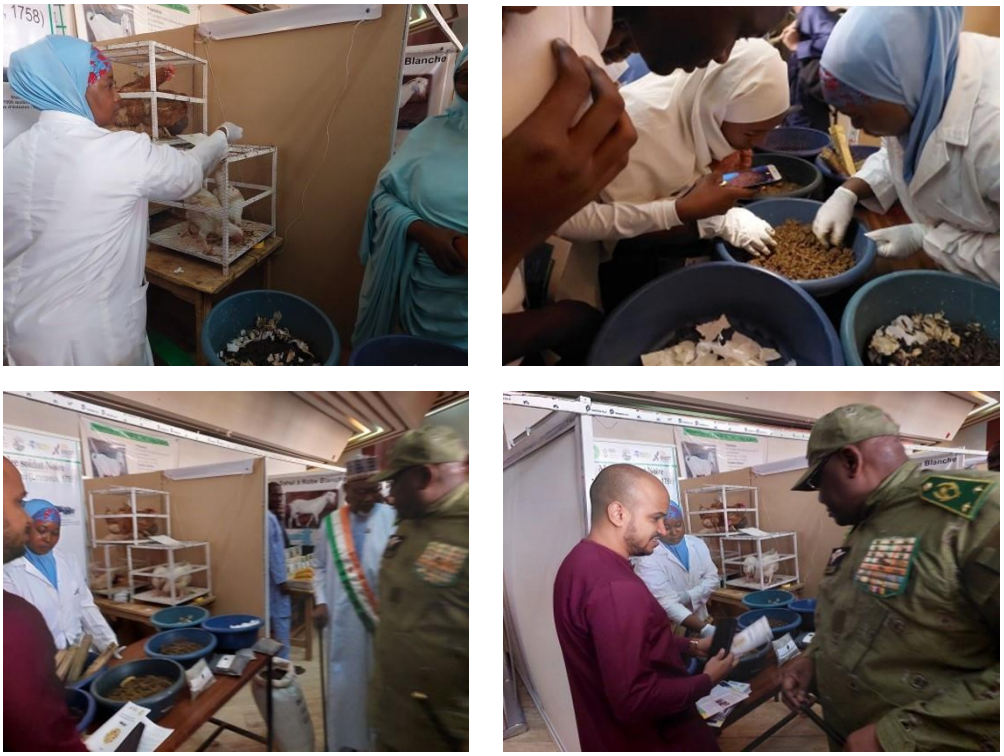
Participants at the sensitization workshop on the Groundbreaking BSF technology in Bukavu.

IITA BBEST AND INRAN SHOWCASE THE BSF TECHNOLOGY AT CNRA.

The IITA- Led project BSF for Bio Circular Economy and Environmental Sustainability (BBEST) in collaboration the Institut National de la Recherche Agronomique du Niger (INRAN) took part in the 4th Edition of the National Council for Agronomic Research Day (CNRA), which was held under the authority of the Minister of Agriculture and Livestock, Mr. Mahaman El Hadj Ousmane on March 8, 2024, with the theme: "Agricultural research as a drive for agricultural transformation and sustainable development: What a contribution to food security in Niger."

The BBEST project actively partook in this event to promote the Black Soldier Fly technology, a climate-smart agricultural practice that can boost livestock and vegetable production. During the event, participants were informed about the different products produced by the BSF and its lifecycle.

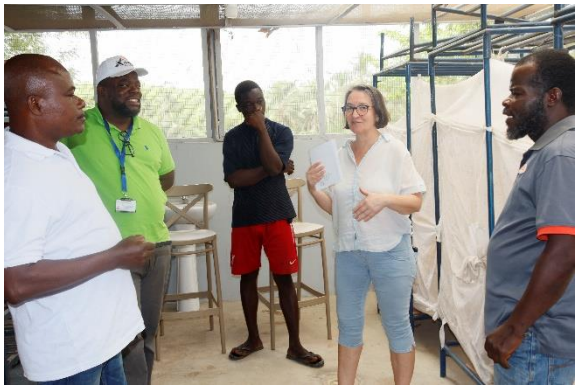
The BBEST and INRAN boot was visited by poultry farmers and producers, scientists, students, vocational training schools, the governor of the Niamey region, the secretary of the CNRA, and the Mayor of Niamey among many others.
The participants at the event were impressed by the technology that has several purposes: the production of animal feed, organic fertilizer, job creation, and a solution to biowaste management, others showed their enthusiasm to be trained in the rearing of the black soldier fly.
The event, which serves as a forum for the exchange and sharing of agricultural research results, contributed to identifying the obstacles to the implementation of research activities and the difficulties encountered by the Council and provided a platform to educate people on BSF technology.



Mr Oumarou Moumouni Dogari, Mayor of Niamey, Dr Boukari Habsatou Amirou, Secretary of CNRA, and other participants at the BSF booth

IITA BBEST PROJECT AND BNARI BACKSTOP DECENTRALIZED UNITS' MANAGERS

As part of its initiative to improve farmers' knowledge of the Black Soldier fly-rearing techniques, the BBEST project and BNARI visited the BSF decentralized units in Ghana and engaged the managers. The visit aimed at providing technical backstopping to the BSF unit managers on the types of substrates to use at each level of the cycle, the feed formulation, the processing of the larvae, and the composting of the Frass among others. The team reminded them of the best practices in producing safe animal feed and quality fertilizer for vegetable production, soil fertility and restoration. The entomologists informed the managers of the importance of data collection in the rearing and urged them to keep records of all aspects of the rearing.
They collected the substrates used by the farmers for laboratory analyses to further inform on the best practices in these BSF decentralized units.
IITA and BNARI will continue to backstop the decentralized unit farmers to enable them to engage in best practices concerning rearing and to ensure that the final products meet the requirements of the developed standard.



Dr. Saethre, Dr. Ofori, and the BBEST team members interacting with the manager of one of the Decentralized units in Ghana.

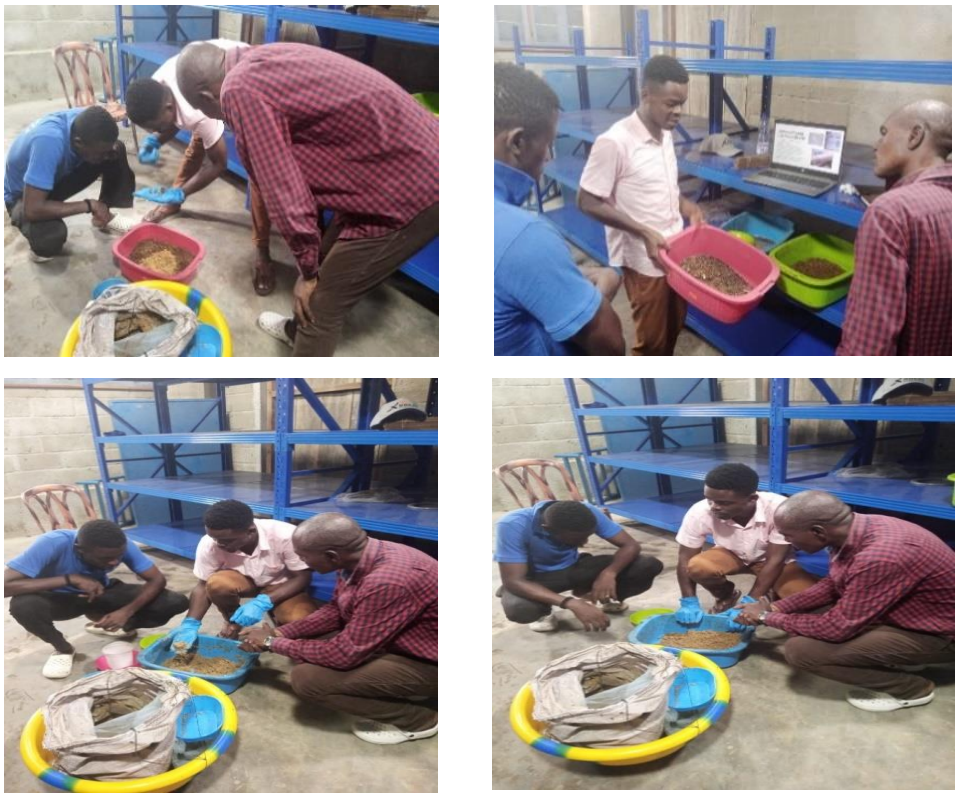
BSF TECHNOLOGY: A WAY TO PROFITABLE AND SUSTAINABLE BUSINESS

Recent studies have shown that the Black Soldier fly larvae can be used as an alternative feed for chicken, fish, and pig, and its frass can be used for vegetable production. To capitalize on that, the IITA BBEST project in DRC has taken a significant stride in building the capacity of smallholder livestock and vegetable producers to start the mass production of the BSF larvae. The training aimed at equipping the managers of the decentralized units with technical skills and knowledge on the production of the black soldier fly and the importance of this fly. The BSF larvae are gradually becoming the main source of protein used by livestock, as the larvae are rich in amino acid content. They can be incorporated into the feed in the dried form or as pellets. The training was conducted by Mr. Joel Mananga the technician of the project.

Mr Mangana delved into the four different cycles the fly goes through namely the adult stage, the egg stage, the larval stage, the pupae stage, and the fly's life cycle. To have a successful production of the BSF larvae, one must know its life cycle and the changes at every level. The training was both theoretical and practical to give hands-on knowledge to the participants.

This sustainable agricultural practice: the Black soldier fly larvae as a source of protein in chicken and fish diets and as organic fertilizer for vegetable production, will catalyse positive change in farmers' livelihood and contribute to the management of urban waste.

The participants expressed their satisfaction and gave their assurance to use the knowledge they gained into use to produce the black soldier fly larvae and frass and capacitate other agripreneurs.



Training of BSF decentralized Units' managers in Kinshasa.

BBEST AND AALI SUPPORTED WOMEN AND YOUTH AGRIPRENEURS WITH THE BSF START-UP KITS.

The IITA-led BBEST project and AALI significantly aided selected youth and agripreneurs in Kabare in DRC. These youth agripreneurs and vegetable producers were certified after a capacity building on the Black Soldier Fly production. This capacity building aims to empower them with the practical knowledge and skills related to the BSF technology.

The training focused on relevant points such as an overview of the black soldier fly, its cycle, and the type of waste that can be used as substrates. They were trained in managing the BSF unit, transforming the BSF larvae into feed and frass, and other important aspects of the rearing of the fly. This is important information that will help them succeed in the production of the BSF.

The participants were equipped with the BSF start-up kits to commence the production of the BSF larvae and frass Kalambo.

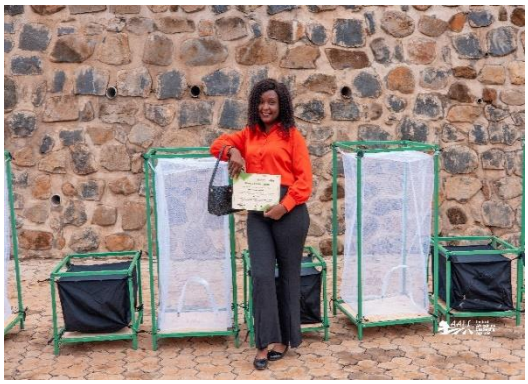
In all, 20 people received the BSF kits based on their commitment, ability, and interest in black soldier fly production. They received one Kilogram of BSF pupae, the adult cage, the dark cage, and the

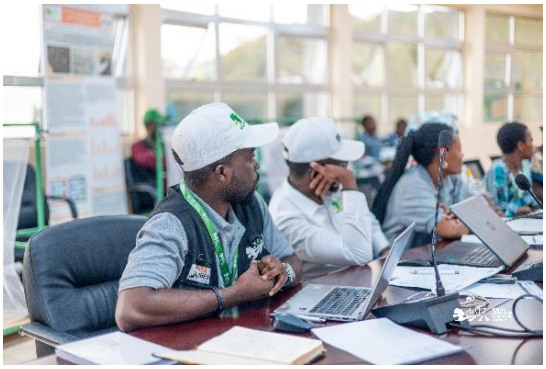
nesting box to kickstart the production of the BSF as a profitable and sustainable business in their respective farms.

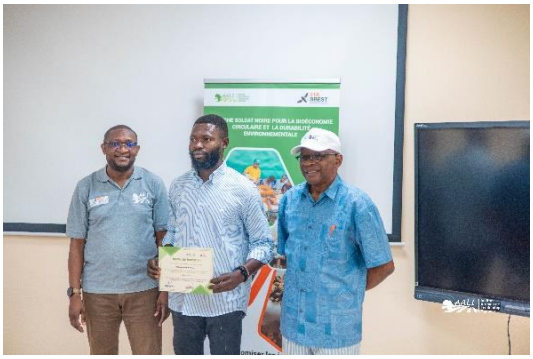
The BSF larvae enable rapidly converting organic waste into animal feed and organic fertilizer. The beneficiaries are also committed to starting a profitable business with these start-up kits given to them after the training. They expressed their satisfaction after the training and assured the institutes of their commitment to start the production of the BSF larvae.

This training was not just about presentations and lectures, it was a lively exchange of ideas and reflections on the IITA-led BSF technology and its pivotal role in agricultural transformation and job creation.

Equipped with the BSF technology and the start-up kits, the trainees are poised to inspire their community members with this sustainable agricultural practice, maximize productivity, and generate revenue.







Training of Youth agripreneurs and vegetable producers on the BSF technology.

IITA BBEST PROJECT EMPLOYEES EQUIPPED TO START THE PRODUCTION OF THE BSF.

As the BBEST project began mass production of the Black Soldier Fly larvae at the centralized unit in the Kofisah community, for optimization, it recently recruited casuals to join its operation in the community.

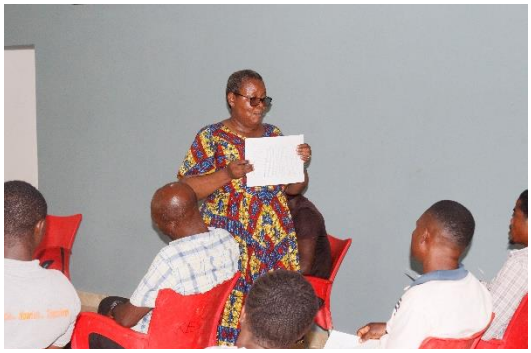
The newly recruited d casuals are members of the Kofisah and the adjourning communities. Their journey with the BBEST project started with an onboarding session with the IITA team and this was held at the BSF unit.

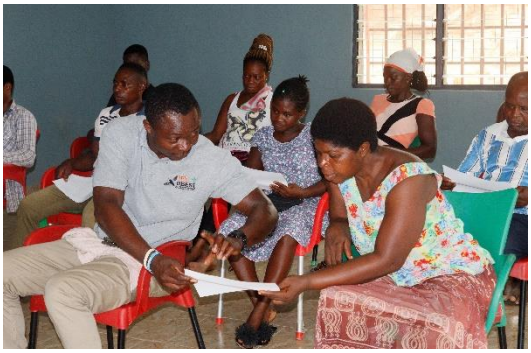
While working at the BSF unit, they will gain skills in producing the BSF larvae and BSF frass and their various applications.

This ground-breaking technology has proven to be sustainable and economically viable. Farmers can produce the BSF larvae to feed their livestock and use the composted frass to fertilize their farms.

IITA through this technology has employed, women and the youth and equipped livestock producers and vegetable farmers with the technical skills to start the production of the BSF larvae and the BSF frass.

These images highlight the onboarding session held by the BSF FOR Bio Circular Economy and Environmental Sustainability (BBEST) project for its new employees in the Kofisah community in the Nsawam Adoagyir Municipality.





Orientation session for the casuals at the BSF unit in Nsawam.