NAIROBI: “ProSect Feed”, one of the Ghanaian startups is maximizing profits by producing organic waste into insect-based food using the Internet of Things technologies to produce animal feeds especially for poultry and as a good source of fertilizer.

According to Tufuor Kwabena, team leader of the group that is pioneering these solutions, the implementation of this initiative has not only contributed to lower the cost of livestock food production in Ghana, but also farmers are now reducing waste as a major contributor to greenhouse gas emissions while ensuring food security in the West African nation.

Official estimates show that Ghana spends over $200 million annually importing poultry products that are also produced locally. Due to Economies of scale, the high production cost of local produce and the low cost of imports make importing the foreign produce more preferable.

A home-grown African solution is described as critical to combat climate change within current efforts to reverse the damaging effects of global warming on food security for the most vulnerable countries and populations across the continent.

While the number of insects in nature remains invaluable, Kwabena and his team are relying on data generated by humidity sensors – electronic devices that measure the amount of moisture or light in specific environments.

Most of these insects are known for being attracted to light and humidity sensors – the most widely used instruments in monitoring, creating a natural environment for these fly species to optimize their production.

Organic waste

The IoT industry is new to Ghana, but Kwabena along with his team managed to sustain this innovation with the launching of a nutrient-rich protein obtained by collecting a species of insects known as the “black soldier fly” which are described by experts as an alternative source of protein in human and animal nutrition.

Currently Ghanaian farmers express their concerns over the availability of sustainable protein sources in animal feed, including chickens, and the group of young entrepreneurs is proposing new livestock feed innovation that need to be promoted to ensure food security in the Western African country.

Farmers are currently concerned about the availability of protein sources, which can be used sustainably in livestock feed

Speaking at the Climate Action Innovation Hub session which took place on the sidelines of the Africa Climate Summit in Nairobi, Kenya, Kwabena explained that insects have great potential as an alternative source of protein in addition to many other opportunities they offer in terms of higher nutritional value.

As this species feeds almost exclusively on organic waste, Ghana is now using them as feed for livestock.

“With emerging IoT technologies, this innovation enables connected devices to create an environment to support the process of raising the larvae of the black soldier fly,” Kwabena said in a panel session entitled “Food systems under a changing climate” which attracted more than sixty start-ups from across Africa.

Scaling up innovations in Africa

Among the broad outlines of the African Union’s Climate Change Strategy and Action Plan 2022-2032 in the area of development and finance includes the promotion of innovative technology for climate action to reduce greenhouse gas emissions.

In a series of presentations focusing various innovative projects that offer solutions in different African countries with case studies, key discussions focused on how some of these initiatives could be replicated in other countries or regions and scaled up, and some questions raised especially on how to raise funding from different stakeholders to support these initiatives and on how their resulting impacts could play a role in in the long term.

Since its creation in 2020, “ProSect Feed” has received an order from 500 farmers and the company managed to distribute more than 25 tons of insects for livestock feed purpose.

The Ghanaian startup has set the goal of reducing greenhouse gas emissions in

poultry and other animal production services through its targeted program where this campaign also involves mobilizing women who value and thus provide this waste as a means of additional income.

According to Kwabena, the biggest challenge the company is currently facing is mainly about raising funds to buy equipment that could enable the startup to turn protein meal into complete feed for livestock feed production.