



Making organic waste management sustainable

January 14, 2021 | Paul Donahue
Topics: Water & Development

Black soldier fly larvae (BSFL) treatment of organic waste offers a sustainable and economic solution to the need for organic waste management in Indonesia.

In Indonesia, 70% of the waste is organic waste, which normally ends up in landfills or illegally dumped. Yet, given an economic incentive, organic waste is more often treated properly, before it ends up polluting the environment. This was shown by Eawag, the aquatic research institute, in the project «Sustainability of Insect-Based Recycling Enterprises» (SIBRE) in Surabaya, Indonesia. Transforming the organic waste into marketable products is at the same time a means to pay for waste treatment costs.

Market analysis shows good potential for dried BSFL products

Treating organic waste with BSFL creates two marketable products: compost and larvae. Although there is only a small market for compost, fresh larvae as animal feed has a large market. Yet, fresh larvae pose several problems. How do you store them and how do you get them to farmers? These issues brought the focus to dried larvae because they are easy to store, package and transport, and can be sold at a higher price. And the packaging for dried larvae can be made inviting for the customer.



Pictured on the left is a crumble product made from dried and processed BSFL for ornamental fish and on the right a pop-larvae product for ornamental birds.

(Photo: Sirajuddin Kurniawan)

SIBRE market analysis identified that the dried BSFL products could be sold at the ornamental bird and fish markets in Indonesia. Potential customers at these markets reacted positively to the new products, appreciating their natural aspects. They are used to insects as a source of animal feed and understand that insects are a valuable source of protein.

Subsequently, SIBRE collaborated with several entrepreneurs in order to found Pro BSF, one of the first companies to sell dried BSFL products in Surabaya. Now, there are more and more brands selling similar products within the ornamental animal markets.

Waste can be treated on-site

The benefits of BSFL fit very well into the waste systems in Indonesia, where there are many very urban environments. Waste is especially an issue in densely populated areas, and BSFL plants do not require a lot of space or big, expensive equipment. These small-scale decentralised waste treatment sites can operate next to restaurants and markets. The organic waste no longer has to be transported to landfills, but can be treated on-site in a simple and manual way and made into marketable products, transforming organic waste management into a sustainable business.

Cover picture: Yosa Padu

Funding

Swiss Re Foundation

Cooperation

DKRTH, Waste Management Department of the City of Surabaya, Indonesia Waste4Change

Related Links

Project «SIBRE – Sustainability of Insect-Based Recycling Enterprises»

Contact



Paul Donahue

Tel. +41 58 765 5059

paul.donahue@eawag.ch

<https://www.eawag.ch/en/info/portal/news/news-archive/archive-detail/making-organic-waste-management-sustainable>