19 - 21 December 2025 Berlin , Germany

Organic Waste Processing as A Business Model for Livestock and Crop Farming in Uzbekistan: Barriers, Drivers, And Implementation Pathways

Oyshabonu Narzullayeva

International House Tashkent Lyceum, Uzbekistan

Abstract

Uzbekistan produces about 14 million tons of household waste each year, and almost a quarter of it is organic material that mostly goes unused because there is not enough investment and no good business plans to handle it. This study looks at three ways to turn organic waste into useful products: composting and using worms, breaking it down without air, and using black soldier fly larvae. The numbers show that if 20% of the organic waste (about 700,000 tons a year) is processed, it could make 136 million cubic meters of biogas, which is the same as 0.83 TWh of electricity. If half of the organic waste is processed, it could make 341 million cubic meters of biogas and 2.1 TWh of energy. The study also shows that it is possible to make money from these methods by charging for waste collection, selling organic fertilizers, protein feed, renewable energy, and carbon credits. Examples from the Solvia startup and U-Enter investments show that the money spent can be earned back in 2 to 5 years. The results show that processing organic waste can help Uzbekistan's farms, lower harm to the environment, and help the country move toward reusing resources.

Keywords: Organic Waste Management, Municipal Solid Waste (MSW), Biogas Production, Anaerobic Digestion (AD), Composting, Vermicomposting, Black Soldier Fly (BSF), Circular Economy, Renewable Energy, Uzbekistan, Sustainable Agriculture, Food Waste Valorization, Livestock Manure Utilization, Business Models, Solvia Startup, U-Enter Investment