PROJECT SUMMARY

CIRCULAR ECONOMY IN THE GASTRONOMY SECTOR:
AN INNOVATIVE FOOD RECOVERY MODEL TO IMPROVE LIVES

In Peru, as in the rest of Latin America, solid waste management is in a critical state. Approximately 10,000 tons of waste are produced in Lima each day, and only 4% of it is recycled.[1] All told, 52% of this waste is organic, and there are no services for recycling it on offer on the market, despite the existence of proven solutions informed by the circular economy in other parts of the world. Meanwhile, in terms of social conditions, improper waste management is linked to a long chain of informal economic arrangements. In Lima, this takes the shape of approximately 35,000 recyclers and 6,000 urban farms that use mixed waste for hog feed, who operate informally in conditions involving high economic, environmental, and health risks.

Sinba, a Certified B Corporation, draws inspiration from the circular economy to offer a **comprehensive waste management service** that seeks to change this situation. Its business-to-business (B2B) service, called Programa de Aliados #SinBasura [#ZeroWaste Allies Program], includes employee training and collection of recyclable inorganic and organic waste generated by businesses, restaurants, supermarkets, and other generators of waste. Organic waste is then processed at Sinba's BioFactory to make hog feed, which is sold to urban farms, with the goal of linking those farms to the #ZeroWaste Allies Program's client network as suppliers and thereby closing the loop of the circular economy. In parallel, 100% of the recyclable inorganic materials collected from #ZeroWaste Allies are handed over to registered recyclers (at no cost), who are paid to operate the program's waste collection routes. Through this system, Sinba has ensured that more than 2,000 tons of organic and inorganic materials have been reused to date, thereby decreasing the waste generated by its more than 45 allies/subscribed companies that ends up in landfills by up to 95%.

The model's innovation stems from its mix of partnerships with private companies, recyclers, and pork producers; its business, environmental, and social approach to problem-solving; the fact that it is an efficient model that provides a comprehensive approach in order to close the loop of the circular economy; the way it has included the recycling of other types of waste (inorganic materials); and its incorporation, through this project, of a circular economy model and efficiencies in all company processes. Sinba does not limit its approach to a single biofactory but rather strives for a sustainable business model that has a clear environmental and social impact and that can be efficiently scaled up and replicated in the other cities of the region. In addition, though IDB Lab has been supporting recycling initiatives in the region, this is the first operation to address organic waste management (due to its complexity) and offer a market / business solution.

With this vision, the bottleneck in the Sinba Cycle as it currently stands is the need to consolidate a technological model at an industrial scale and prove that it is viable and, by extension, can be replicated. Current processing capacity at Sinba's BioFactory (its organic waste processing plant) is eight tons per day. Processing is semi-industrial and, therefore, not very efficient. Though the company has reached the break-even point, it

[1] *Informe Lima Cómo Vamos*, 2016.

cannot satisfy demand with its current installed capacity. This financing would be used to validate a technological model, BioFactory 2.0, which aims to expand Sinba's installed capacity by 500% and its efficiency by at least 50%. The financing would also be used to enhance sustainability (water and energy use) through technology improvements and process digitization. Sinba intends to demonstrate that this circular solid waste management model can work at scale and become a solution with positive impacts on three fronts that can be replicated throughout the region.

This project has become increasingly relevant amid the COVID-19 public health crisis, since recyclers and urban hog farmers are highly vulnerable, not only because almost all live in monetary poverty, but also because certain aspects of their work continue to remain outside the formal economy, which hinders their ability to access markets that are increasingly regulated. Creating paths to formalization and, above all, creating jobs for these sectors will be crucial in the post-pandemic economic reactivation phase.

Recent regulatory changes, such as mandatory source separation and selective collection of solid waste nationwide and the regulations for the Climate Change Act, have created a regulatory and strategic environment that is conducive to circular solutions with proven positive environmental impact.

This project is aligned with the IDB Group Country Strategy with Peru and especially with the #SinDesperdicios initiative developed by the Water and Sanitation Division (INE/WSA) and partners from the region to reduce food waste and loss. It is also aligned with the Competitiveness, Technology, and Innovation Division (CTI) loan, "Improved Levels of Productive Innovation at the National Level" (operation PE-L1162), which provides cofinancing for business innovation and innovative entrepreneurship projects and includes the dissemination of circular economy practices among micro, small, and medium-sized enterprises (MSMEs) as one of its objectives. The project also has a significant impact on the following Sustainable Development Goals (SDGs): SDG 2, Zero Hunger; SDG 11, Sustainable Cities and Communities; and SDG 12, Responsible Consumption and Production.

This business model is not just innovative but also has a significant social and environmental impact. With just one processing plant like the one proposed, operating as part of a business model like Sinba's, more than 11,000 metric tons of organic waste and 1,800 metric tons of inorganic waste can be repurposed/reused (and taken off the streets) each year, resulting in the abatement of nearly 16,000 tons of carbon dioxide equivalent per year. As for the social impact, each operation like this one could benefit people who used to make a living as informal waste pickers, with all of the risks that this entails, who can now work as registered recyclers with safer working conditions and higher, more stable incomes. As this is just the first operation of its kind, it is valuable because it addresses a need that is widespread throughout the region and thus has great potential for scalability and replicability in other contexts. Therefore, it is shaping up to be a possible success case for the region in terms of its contribution to sustainable development. The total cost of the project is US$550,000, with IDB Lab contributing US$420,000 as a senior loan, while Sinba will contribute US$130,000 from a seed round.