

Update of Fish Waste Generation and the Potential Contribution to the Circular Economy in Barbados

Actualización sobre la generación de desechos de pescado y su potencial contribución a la economía circular en Barbados

Mise à jour sur la production de déchets de poisson et la contribution potentielle à l'économie circulaire à la Barbade

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EXTENDED ABSTRACT

This study aimed to provide an updated assessment of the "Fish Silage Production and Use in the Caribbean Feasibility Study for Barbados and St. Kitts and Nevis" conducted by Drakes et al. (2020). The primary objective of this update was to quantify and map the generation of waste from various sources throughout the island and to closely examine the methods employed for the utilisation of this waste in Barbados. The methodology of this study consisted of 18 key informant interviews with stakeholders in the industry and a literature review. All 6 of the major fish processing plants were interviewed. Twelve (12) out of 13 landing sites monitored by the Fisheries Division of Barbados were interviewed.

It is estimated that Barbados produces 3,140 tonnes of fish offal per year. Collectively, 2,566 tonnes are generated by all the landing sites across the island and 574 tonnes are generated by the fish processing plants. Currently, 2,958 tonnes per year or approximately 94.5 % of fish waste is discarded in the Mangrove Landfill in Vacluse, St. Thomas. Around 144 tonnes per year or 4.3 % is lost in the ocean and doesn't return to land. The remaining 1.2% or 38 tonnes per year is utilised through various initiatives from some of Barbados' fish processors.

Two of the main generators of fish waste are Bridgetown Fishing Complex (BFC) and Oistins, due to the high volume of vessels that operate from these markets daily. It was found that overall, the BFC and Oistins contribute to 60.3% and 34.0% of waste generated at landing sites respectively. In comparison, the remaining landing sites contribute to less than 6% of the total waste generated.

The top 10 species that constitute the waste generated are: Flyingfish, Almaco jacks (amberfish), Dolphinfish, Turpits, Kingfish/Wahoo, Marlin, Swordfish, Sailfish, Yellowfin Tuna and Barracuda. These species may change based on their availability, due to factors that affect the supply and demand such as climate change and sargassum influxes.

Even though the results indicate that more waste is being generated, the catch data and vessel data show a general decline in landings and the number of vessels that land fish. It is a possibility that the effort of the fishing vessels has increased, leading to an increase in the waste generated.

Some current uses include a minced fish product from Ocean Fisheries and burgers, wieners and other value-added products by Morgan's Fish House. Other initiatives by Morgan's Fish House include the conversion of fish skins to fish leather and chewable dog treats. The transformation of fish waste into fish silage, which is used in the production of feed for sheep and rabbits, is another initiative piloted by the Food and Agriculture Organisation. The results indicate that at the current utilization rate, 2958 tonnes of fish waste are available for potential use in the fishing industry.

Stakeholders in the fishing industry made three (3) key recommendations: They suggested that (1) markets or companies should have an efficient sorting and collecting system to gather waste in a specified area, (2) the waste is chilled and stored in a timely manner as best practices dictate and (3) all of the waste generated on the island go to a localised rendering plant for the processing of products for farmers. These plans and activities could spark the potential contribution of fish waste in the circular economy

KEYWORDS: circular economy, fish waste, blue economy, Barbados,

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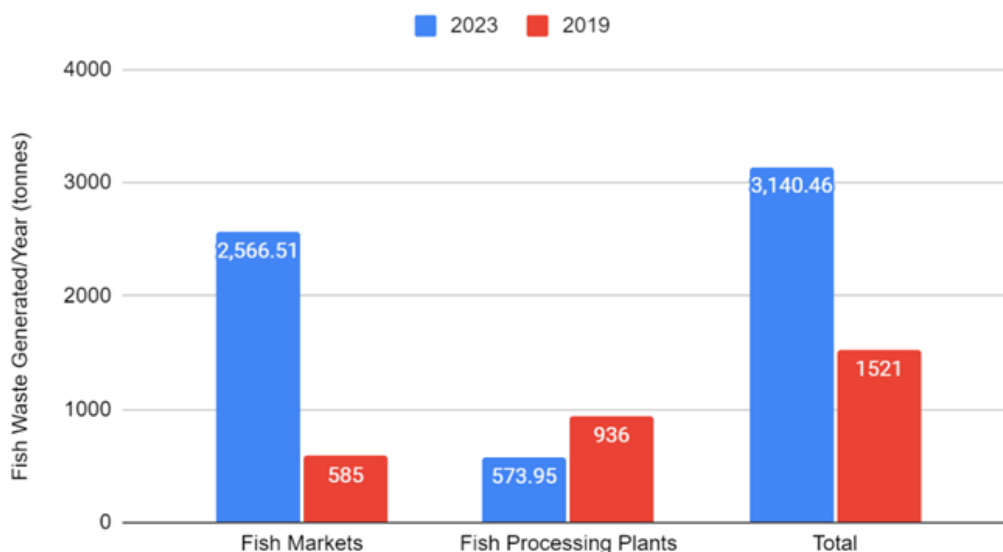


Figure 1. This chart shows a comparison between the fish waste generated per year in 2023 and 2019. Overall, the waste generated at the landing sites fish markets has increased since 2019 and the waste generated at the processing plants has decreased. In total, the waste generated has been double the amount since 2019.

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