

## EXECUTIVE SUMMARY

Wooden pallets have been the choice of pallets for years in the logistics industry. However, with globalization becoming more prominent, cross-border contamination has become an issue. Wooden pallets that cross borders have the risk of carrying foreign bacteria and can cause health issues. Therefore, our client has identified a business opportunity through the manufacturing of plastic pallets. Virgin plastic is the prevalent raw material for most manufacturers in the plastic pallet market. The manufacturing cost of such pallets is high, and there are many players in the industry. JMR Plastic aim to differentiate their product by manufacturing the pallets from recycled plastics and waste. This combination has the potential of reducing the manufacturing cost and can help with diverting waste from landfills. Our objective in this paper is to conduct a feasibility study and identify the profitable combination to produce. To complete this study, we first identified several variables that will affect the overall cost. Then, we developed seven scenarios, each with a unique combination of virgin plastic, recycled plastic, and waste. Scenario 2.2 was the most profitable, where the composition was 60% recycled plastic and 40% waste, and the client purchases a used machine. We understand that the supply of the required volume of recycled plastic might be a concern; therefore, through our scenarios, we identified the breakeven point. To remain profitable, the virgin plastic content in the pallets should not exceed 15%. By following our recommendation, JMR Plastic can realize a profit of approximately \$1.2 million over the five-year forecast of this study.