



INTISARI

Fenomena *global boiling* disebabkan oleh aktivitas manusia dan berdampak pada manusia kembali, sehingga penerapan rantai pasok berkelanjutan penting dilakukan dalam praktik bisnis. Penelitian ini bertujuan menganalisis rantai pasok Mylea™ dari MYCL perusahaan miselium di Indonesia, mengidentifikasi titik pemborosan, serta merancang strategi perbaikan dengan mempertimbangkan dimensi ekonomi, lingkungan, dan sosial dalam kerangka *Triple Bottom Line* (TBL). Metode yang digunakan meliputi *Supply Chain Value Stream Mapping* (SC-VSM) untuk pemasok, *Sustainable Value Stream Mapping* (Sus-VSM) untuk produksi, *Vehicle Routing Problem* (VRP) *savings* untuk pemasok, *lean production* melalui *buffer* dan optimalisasi kapasitas *idle*, *Physical Load Index* (PLI) untuk dimensi sosial, serta *Weighted Goal Programming* (WGP) untuk pemilihan strategi akhir. Hasil penelitian menunjukkan konsolidasi pengadaan dapat menurunkan emisi 54,28% dan biaya transportasi 30,79%, sementara optimalisasi kapasitas produksi harian menurunkan biaya per unit 22% dan emisi 35,56%. Perbaikan ergonomi menurunkan skor PLI hingga 52,40%. Penelitian ini menegaskan bahwa perbaikan rantai pasok berkelanjutan melibatkan *trade-off* antar dimensi TBL, sehingga strategi optimal harus disesuaikan dengan prioritas perusahaan, sehingga WGP memungkinkan penyeimbangan target sesuai bobot dimensi TBL.

Kata Kunci : Rantai Pasok Berkelanjutan, *Triple Bottom Line* (TBL), *Lean Production*, Miselium, *Value Stream Mapping*



ABSTRACT

The phenomenon of global boiling, driven by human activities and ultimately affecting humans themselves, underscores the importance of implementing Sustainable Supply Chain practices in business operations. This study aims to analyze mycelium start up MYCL's Mylea™ supply chain, identify inefficiencies, and design improvement strategies by integrating economic, environmental, and social dimensions within the Triple Bottom Line (TBL) framework. The methods employed include Supply Chain Value Stream Mapping (SC-VSM) for suppliers, Sustainable Value Stream Mapping (Sus-VSM) for production, the Vehicle Routing Problem (VRP) savings model for suppliers, lean production through buffer and idle capacity optimization, the Physical Load Index (PLI) for assessing social aspects, and Weighted Goal Programming (WGP) for final strategy selection. The findings show that procurement consolidation reduces emissions by 54.28% and transportation costs by 30.79%, while optimizing daily production capacity decreases unit costs by 22% and emissions by 35.56%. Furthermore, ergonomic improvements reduce the PLI score by 52.40%. This study highlights that sustainable supply chain improvement involves trade-offs across TBL dimensions, meaning that the optimal strategy must be aligned with corporate priorities, while WGP provides a structured mechanism to balance targets according to the weighted importance of each dimension.

Keywords : Sustainable Supply Chain, Triple Bottom Line (TBL), Lean Production, Miselium, Value Stream Mapping