

## **MFCA: An Environmental Management Accounting Technique for Optimal Resource Efficiency in Production Processes**

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**Abstract :** Revenue leakages are one of the major challenges manufacturers face in production processes, as most of the input materials that should emanate as products from the lines are lost as waste. Rather than generating income from material input which is meant to end-up as products, losses are further incurred as costs in order to manage waste generated. In addition, due to the lack of a clear view of the flow of resources on the lines from input to output stage, acquiring information on the true cost of waste generated have become a challenge. This has therefore given birth to the conceptualization and implementation of waste minimization strategies by several manufacturing industries. This paper reviews the principles and applications of three environmental management accounting tools namely Activity-based Costing (ABC), Life-Cycle Assessment (LCA) and Material Flow Cost Accounting (MFCA) in the manufacturing industry and their effectiveness in curbing revenue leakages. The paper unveils the strengths and limitations of each of the tools; beaming a searchlight on the tool that could allow for optimal resource utilization, transparency in production process as well as improved cost efficiency. Findings from this review reveal that MFCA may offer superior advantages with regards to the provision of more detailed information (both in physical and monetary terms) on the flow of material inputs throughout the production process compared to the other environmental accounting tools. This paper therefore makes a case for the adoption of MFCA as a viable technique for the identification and reduction of waste in production processes, and also for effective decision making by production managers, financial advisors and other relevant stakeholders.

**Keywords :** MFCA, environmental management accounting, resource efficiency, waste reduction, revenue losses

**Conference Title :** ICBEFA 2015 : International Conference on Business, Economics and Financial Applications

**Conference Location :** Cape Town, South Africa

**Conference Dates :** November 05-06, 2015