

(198)

## **Eco-Sustainable Practices to Improve Industrial Efficiency: Case Study at a Medium Scale Apparel Manufacturing Company in Sri Lanka**

**Abeyrathna A.W.G.N.M.<sup>1\*</sup>, Jayawardena S.B.A.D.Y.<sup>2</sup>**

<sup>1</sup>*Faculty of Humanities and Social Sciences, University of Sri Jayewardenepura, Nugegoda, Sri Lanka*

<sup>2</sup>*Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka*

*\*nadeesha.abey92@gmail.com*

### **Abstract**

Today, we live in a world which is materialistic, profit-oriented and industrial in nature. But environmental degradation has increased up to a higher extent, and the anthropogenic climate change has taken place with many bad effects. People have deviated from the natural environment day by day and it has resulted in an increase of the work stress and frustration. It directly affects to the organisational productivity as human resource is the most important resource to achieve competitive advantages. That is why eco-sustainable practices are becoming so important in order to achieve efficiency. This paper is based on a case study of Eco Sustainable Practices to improve the efficiency in a selected apparel company. The major problem identified was the low efficiency due to unsustainable points in the process flow such as wastage of resources, high temperature level, high electricity/water/fossil fuel consumption and work-related employee stress. The main objective of the study is to suggest appropriate eco-sustainable practices to enhance the efficiency. Three different primary data collection methods were employed and analysed using qualitative and quantitative methods. The study found practically applicable solutions which direct the company to higher efficiency and standards after analyzing each part of the process flow and the facilities of the factory. Implementing green roofs with solar panels can reduce temperature and support carbon neutralisation while fulfilling the energy requirement throughout the year. Windows can be replaced with a special prismatic glass to avoid heat flow. LED task lights can be replaced in each machine to save energy compared to the conventional lighting system. Grass pavers are suggested for the driveway and the parking lot which absorb the surface heat as well as provide a pleasant green entrance way for the employees. Also, there are some specific plants suggested to grow inside of the factory to reduce heat, provide fresh air and lower the stress. Empty thread cones can be returned to suppliers after collecting them separately. Rain water harvesting for cleaning purposes reduces the water consumption considerably. A biological treatment for waste water can be introduced to protect the neighboring wetland to ensure the quality of the ground water system. Waste food could collect and send to animal farms. Office waste papers can be reused as medicine bags and provided to nearest base hospital located. The arrangement of eco-friendly color themes can be recommended for making pleasant working environment. A well-maintained monitoring system under the top management is vital for all the eco-sustainable implementations. The study finally concluded with the suggestion to improve Eco Sustainable Practices on a long-term basis to improve efficiency in the factory selected.

**Keywords:** Eco-Sustainable Practices; Efficiency, Industries