DEVELOPMENT OF ECO-EFFICIENCY INDICATORS FOR WOODEN TOY INDUSTRY

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Abstract

Eco-efficiency is a sustainability analytical tool for industry, which can indicate the relation in economic activities and environmental impact. The development of eco-efficiency indicators for routine tracking and reporting industrial performances becomes as a standard and widely accepted as reporting currently indicators of financial performance. This paper presents the development of eco-efficiency indicators for sustainability analysis of a wooden toy industry. Four major indicators, which are economic development, natural resource consumption and reuse, pollution, and factory management, were developed. The eco-efficiency evaluation of an extended supply chain included all major processes necessary for production, suppliers, use and end-of-life treatment of a product was performed. Data collection was mainly done by field site investigation at the Plan Creation Co., Ltd., which is located in Trang province, south of Thailand. Economic and environmental data over the period of year 2006 to 2008 were received from the existing monitoring report, interviewing, and general applicable measurement methods. The evaluation of eco-efficiency indicators was gathered from the World Business Council for Sustainable Development (WBCSD) approach, which is expressed by the ratio of product or service value and environmental impact. The research can provide a basic framework on eco-efficiency evaluation for industry in the micro level, which could help companies to set measurable eco-efficiency targets and facilitate comparisons between companies and business sectors essentially, it would result in widely accepted, quantifiable, verifiable and transparent indicators.

Keywords: Eco-efficiency, Economic performance, Natural resource consumption, Sustainability indicator, Wooden toy industry.