

A best practice of industrial ecology in the garment industry in China : a dashboard for small firms

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Jin Jianhua¹, Denis Dupre², Pierre-Yves Longaretti³, Jean-Yves Courtonne³

¹Shanghai Garment Association, ²Grenoble University, ³STEEP team, INRIA

In recent years both practitioners and academics have become interested in sustainable development. The development of standards and regulations has provided multinational companies, firstly in western countries, with efficient tools to tackle this issue. However, the case of small and medium size firms in developing countries was little studied, whereas generic tools often don't address their specific needs.

China and the Chinese industry in particular are rapidly engaging in a transition from a single target consisting in economic growth to the triple economic-ecologic-social bottom-line of sustainable development.

We focused our study on the textile industry, which is mainly composed of medium-size businesses and accounts for about 3% of the country's production output. It is the second biggest water-consuming industry sector in the country and also a significant user of coal-based energy.

We propose a specific dashboard at the plant level to evaluate environmental (e. g. emission of small particules), social (e. g. work accidents) and economic (e. g. profit) performances. This is the first attempt of the kind in the Chinese context, both on the methodological and data collection front; in particular the characteristics of some of the firms involved in the supply chain are taken into account in this work. We exemplify our methodology by showing how a small firm of 400 employees has introduced this dashboard in the decision process.

In this case study, we define methodological guidelines to design and validate Key Performance Indicators adapted to small and medium size enterprises through a two stages process. First, based on a presentation of sustainability concerns at different levels (the world, china, the garment industry) by two pluridisciplinary research teams in Grenoble and Shanghai, we define the targeted indicators in collaboration with the CEO and the management team of the plant. Then, we decide how we can simplify the indicators to get relevant data within a single year. The idea is to improve gradually in the future on the quality and complexity of the chosen set of indicators.

This dashboard was used as a decision making tool to help the decision of investing in new machines, saving energy and water, and challenging suppliers

along the supply-chain.