A case study of ARAVIND fashions in implementing Green supply chain management practices

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INTRODUCTION

Green economy and Green industry can be considered as an alternative vision to achieve growth and development as it enables to address triple bottom line of sustainability issues, namely economic, environmental and social concerns. A green economy is defined as one 'that results in improved human well-being and social equity while significantly reducing environmental risks and ecological scarcities. Green industry is an important component of green economy. According to United Nations Industrial Development Organization (UNIDO, 2011), Green industry foresees a world where industrial sector minimizes waste in every form, utilize renewable resources as input materials and fuels and take every precaution to avoid harming workers, communities, climate or the environment. Among green industry, the growth of Apparel industry provides ample opportunities for a developing country like India to sustain, due to its distinctive features such as, low investment, simple technology, comparatively less skills, can be dispersed in all regions and therefore helps in achieving regional balance and ensures social justice. It is labour intensive and therefore provides scope to take advantage of growing demographic dividend. It also contributes to foreign exchange earnings.

With the end of Multi-fiber arrangement and Agreement on Textile & Clothing, India's fashion industry has bright prospects due to brand image it holds in global market. Therefore production of green apparels meeting quality, fashion, affordability and environmental concern has to be encouraged as green apparel can help in reducing carbon footprint.

Review of literature

Before highlighting the objectives, review of literature to address environmental, economic and social issues in apparel industry is presented thematically.

Green supply chain practices

There is a growing awareness among designer, manufacturer, merchandiser, and consumer on a vast array of topics, from methods of production to governmental regulations to life cycle analysis. The responsible use of resources, eliminating waste and minimizing carbon footprint are some of the measures for sustainability commitments. (Goan, 1996; Defra, 2010; Kasemset et.al 2010; Goworek, 2011; Ulibarri, 2011; Jin Gam et.al, 2011; Islam et.al, 2014; Autumn S.Newell, 2015;Arpita Khare and Amrutsadachar 2017).

Green supply chain practices facilitate in reducing waste from environmental perspective.

Lean practices

The purpose of lean production is to increase productivity, to improve product quality, to reduce manufacturing cycle time, to reduce inventory, to reduce lead-time and to eliminate waste or non-value added activities. Just-In-Time(JIT) production system is the backbone of lean manufacturing. (Menden,1998; Ranjith, Karthick, 2011; RichardM.Jones,2007; Venkat and Wakeland,2006).

Social and Ergonomic Issues and interventions

Addressing social and ergonomic issues will enhance labour productivity, human health and welfare. The studies have identified bad ergonomics leading to worker's health problems. The authors suggests to follow the OSHA standards (Calvin, S., and Joseph, B.2006; MD B. Sarder, Sheik, N. and Mandahaw (2006) GordanaColovic, 2014; Paul,G.D.,et.al, 2015;Mukund A, et.al2014; Emine Koka and Ozlem Kaya, 2016).

Therefore, Lean Supply Chain management and Green Supply Chain Management and social aspects has to be integrated into apparel product life cycle.
In the light of the literature review the present case study assess sustainable supply chain practices of Arvind Mills.

Objectives:

- To examine the extent of green practices, lean practices, social and ergonomic issues and interventions adopted in Arvind fashions.

Methodology

The study has used both secondary and primary data. The secondary data is collected from the company's annual report, internet, published and unpublished reports. Under the primary data a period of 6 months from November 2016 to April 2017 was selected for purpose of data collection. The information was gathered from the business head, merchandiser, human resource managers, sewing machine operators, floor managers with whom the researcher had a face to face interview. This study has used qualitative research design. Triangulation of data method was used to validate the objectives and questionnaire of the study. Information collected through interviews with the management, through questionnaire and through the internet was presented under the case study.

Case study presentation

The case study is presented under the following head (a) The company profile (b) Lean practices and Green supply chain practices- green procurement, green manufacturing, green transportation, green ware housing and distribution in managing cotton, water, chemicals and dyes and energy and Social and Ergonomic (occupational) issues.

Arvind Fashions

The company profile

One of the few world class apparel and textile's organizations, headquartered in Ahmedabad, Gujarat, the company has built a strong collection of brands and manages 15 global apparel brands , has 900 brand stores and 1400 multi-brand outlets across India. In the 'Ready Made Garment' domain, Arvind is on the top as one-stop solution provider for leading global and domestic apparel brands. The company's brand includes, Megamart (rebranded as unlimited) Flying machine, Colt, Ruggers, Excalbur and manufactures and supplies to brands such as Ostin, Papae jeans, Lee, Levis, Wrangler, Zara, Benetton, Best seller, GAP to Russia, Europe, Italy and USA. It is won 'Asia sustainability report award', 'ASRA', Asia's top award and Arvind Envisol has received global patent, which saves 80% energy cost. It has registered 22 global patents for environmental solutions. Arvind has been supporting initiatives of educational, social, cultural interest through its Socially Responsible Investment, much before, corporate social responsibility (CSR) was coined.
The manifesto of 'Fundamentally Right' philosophy' implemented in 2014 focuses on reduction in environmental impact through six key inputs management approach across the entire value chain. To manage the six key inputs so as to reduce carbon footprint, the study analyses the data on Green procurement, Green manufacturing, Green transportation and Green warehousing and distribution with respect to Cotton, Water, Chemicals and Dyes, Energy, Money and Manpower.

Green Procurement

Green procurement may be analyzed under, raw materials such as fibers, chemicals and dyes, bio-degradable toxics and packaging materials.

Fiber-Cotton/Polyester

Arvind is one of the first implementation partners of Better Cotton Initiative (BCI) in India in 2010-11, to minimize the environmental impact of cotton farming. Khadi Denim fiber uses no chemicals, no electricity, no high technology and no use of depletable resources. It also has anti-inflammatory, anti-fungal, and anti-bacterial properties. Neo Denim is produced using sustainable neo-dyeing technology which eliminates dye drainage, reduction of dye and water consumption.

Chemicals, Dyes and Biodegradable toxics

To reduce the negative impact of chemicals and dyes, the company uses 100% natural dyes in Denim unit and both natural and artificial dyes in non-denim unit is used, 'Spill Kits' to manage hazardous chemicals, auto-dosing of chemicals & dyes for more safety and quality is used. Arvind has established the textile working group for CHG emissions reporting and reduction.

Packaging material

The Packaging consists of around 30-50percent eco-friendly materials such as reused shipping products, recyclable papers and non-emitting chemical papers.

Green Manufacturing/Green production initiatives

Green manufacturing may be analysed under, Water, Energy, Eco-friendly clothing, Carbon Emission and money.

Eco-friendly clothing

The company produces 100 percent eco-friendly clothing and is saving cost by around 40 percent. Around 40percent-60percent of the textile material is reused or recycled. Efforts are taken to a great extent to reduce environmentally harmful raw-material and recycling them.

Carbon Emission

The company has reported at Carbon Disclosure Project (CDP) for two years in a row. The operations are ISO 9001:2008(Quality Management Systems) and ISO 14001:2004 (EMSs) certified. Rain water harvesting linked to Emission Treatment Plant, is adopted to check industrial emissions.

Energy

At Arvind Energy conservation is summed in five words- "Every Watt Saved is a Watt Earned". This approach has benefitted in terms of, improved energy security, reduced energy costs, enhanced productivity and lower emissions. Between April 2014-16, 60,400 KWh cumulative power was saved and has helped in reducing GHG footprint through reduction in energy consumption.

Water

Sewage water treatment plant is installed. 'E-soft Nano-bubble technology' is used to rationalize the use of water. This ensures 98% of water savings, 80% chemical savings and 79% energy savings. 100% of the water used in the facility has been treated waste water from the municipality. The facility does not use any fresh water for production processes.

Money

Due to the application of Salt recovery through zero liquid Discharge systems, in FY 15-16 over 1200 million tons of salt was recovered and later re-used in dyeing of yarns and fabrics. Use of abrasive drum coating in Bengaluru unit has also reduced carbon footprint as the stones have to be imported. from Turkey, Indonesia and Greece. Laser technology, CAMCAD Machine-Gerber cutter and Gerber plotter has saved wastage by around 15%.

Green transportation

Initiatives such as migration to more aerodynamic trucks, reducing truck idle time and periodically servicing of the vehicles, improvement in labour management, replacing diesel-powered trucks with alternative fuels(bio-fuels) initiatives is undertaken. Full adoption of green transportation would be economically burden to apparel industry to some extent.

Green Warehousing & Distribution

Regarding reducing energy consumption through solar panels and green roofing options initiatives are taken to a great extent. Periodical meeting with suppliers to ensure transparency and clear communication in the supply chain is conducted to elaborate and familiarize the supplier group with Arvind's sourcing policy, sustainability practices and code of conduct.

Eco labelling

The company is certified under environmental regulations such as, REACH (Regulation, Evaluation and Authorization of chemicals) has obtained, the Oeko-Tex std 100, Global Organic Textile & Standards (GOTS)Intertek eco-certification-green leaf mark and World Responsible Apparel Production principles (WRAP). It is a founder member of 'Sustainable Apparel Coalition'(SAC).

Manpower-Social and Occupational Issues Addressed to Improve Productivity

The company has introduced standard operating procedures (SOPS) which is unusual to textile industry. This include work permit systems, use of industry-grade Personal Protection Equipment like safety shoes and masks. Weekly safety meets. Occupational Health and Safety (OHS)training, Adoption of Fair Labour Practices, have ensured good labour relations and union practices. Health awareness camps are organized periodically.

Problems in producing green apparels by Arvind fashions

- Lack of skilled and unskilled labour .
- Reverse migration of labour and apparel industries to villages from cities due to low cost of living, availability of land at cheaper rate, power subsidy etc to industry.
- High cost of living in cities due to existence of IT and BT companies.
- High labour turn over and absenteeism at around 10%-12% on the pretext of vacation, festivals, agricultural activities.

Suggestions for Improvement

- Introduction of siren at regular intervals for short breaks from work.
- Providing accommodation and nutritious food to reduce high labour turn over to especially women workers who constitute around 80% of the total workforce and whose HB level is around 8-9 percent.
- Amendment in labour laws with flexible time has to be done.
- Integrated Degree course in apparels and research in areas such as management of resources and reduction in wastes and carbon footprint in apparels has to be encouraged.

The findings of the case study are:

- The use of green practices has definitely given a strategic advantage.
- The company has adopted lean practices to a great extent
- The company has adopted green initiatives in procurement and manufacturing, to a great extent and with respect to transportation and ware-housing and distribution to a certain extent.
- The company has been able to identify social and ergonomic problems and has adopted suitable interventions.

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2. Mr Balaji- Business Head, Mrs Nirmala- Mechandiser, Mr Vinod- Human resource manager and floor managers.