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Sustainability Practices through Supply Chain Assessment: A case study of India's largest Denim Manufacturer Arvind Mills

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**Introduction:** The rising concerns for environmental and social responsibility of fashion industry have led many companies to implement sustainable practices throughout their supply chain. Little research has explored methods and strategies to lead apparel manufacturers, designers, merchandisers and consumers in acclimatizing and implementing sustainability in their work. Hence, there is a growing need to study the sustainable practices of apparel manufacturers. To this end the main objective of the study was to explore sustainability practices through supply chain assessment of India's largest denim manufacturer. Arvind Mills is India's largest denim manufacturer apart from being the world's fourth-largest producer and exporter of denim. They cater to GAP, 7 of all Mankind, Target, Aeropostale, Nautica, Tommy Hilfiger.

**Literature Review:** Sustainability is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their needs". Sustainable fashion supply chain includes eco- friendly raw materials and preparation, sustainable manufacturing, green distribution channels, green retailing, and ethical consumers. An effective sustainable fashion supply chain helps companies to enhance brand image and gain more consumer support.

**Methodology:** In order to have a better picture of how fashion companies incorporate sustainability, we conduct a case study of Arvind Mills. A case study of a supply chain offers the opportunity to look at its complex links and underlying implications. In this study, preliminary data was collected through first hand visit to their manufacturing unit located in Ahmedabad, India. Qualitative data was collected through one on one interviews with company personals in different units such as manufacturing, product design, product development, marketing, sourcing and human resource. Secondary data was collected through company's website, annual sustainability reports etc. This method of data collection in a case study aids in enhancing the reliability of the findings.

**Findings:** The study revealed that Arvind Mills sustainable practices and performance were remarkable and can be grouped under six categories that will be discussed below.

**COTTON:** Cotton accounts for 35% of total textile fibers used in the world. Cotton is key raw material for denim. Arvind Mills harness methodologies and projects like Organic Farming and Better Cotton Initiative (BCI) to ensure that cotton farmers, the communities, consumers and surrounding environment reap benefits of their fabric. 15% of their total cotton consumption constitutes organic cotton sourcing. Cotton is considered a cash crop in India and lure of lucrative returns pushes many farmers to take debts to pursue cotton farming. Arvind mill has taken an approach to partnering with farmers and nurture mutually beneficial relationship. For

example, infrastructure and capacity building; taking expert advice from soil scientists, pest specialists, agronomists to guide farmers; Technology and skill development through training and educating farmers on better management practices; Regular monitoring through field auditing; Buying back directly from farmers at fair market price by employing 'farm gate' payment policy; Supply chain management to ensure transparency from seed to shop floor stage.

**WATER:** They have identified and implemented ways to reuse/ recycle water to minimize water foot print. They started sourcing water from treated sewage and utilizing it at garment washing. It is the only garment washing factory to use 100% recycled water in the region. Arvind Mills was the first industry in India to initiate BCI approved project. BCI is a concept to grow cotton with carefully controlled application of water. Today they are one of the major BCI players in India. BCI farmers used 27% less water compared to conventional farmers in the same area.

**CHEMICALS:** They use the right chemicals judiciously and responsibly by using substitutes that have smaller environmental impact like natural dyes. They also treat not only the residual chemicals but also extract useful salts from them so that they can be reused. They emphasize and implement reduced use of pesticides, increased use of organic matter in the form of farmyard manure and compost. They have adopted micro-irrigation and regular soil testing to ensure soil health. The BCI farmers of Arvind mills used 29% less average fertilizer and 15% less pesticide compared to conventional farmers in the same area.

**ENERGY:** Energy efficient technologies are deployed across their units and offices which help them keep track of energy consumption. For example: Stenters are widely used for stretching, drying, heat-setting and finishing fabric. Their plants have commissioned energy efficient Stenters that has led to reduce natural gas consumption by around 10%. Using energy efficient preheaters has saved 1 ton of fuel per day. Compressed air is one of the primary energy intensive utilities in textile industry which is important to keep the looms running. They use high capacity energy efficient compressors saving 8% electricity consumption. They also continuously strive to reduce the GHG (Green House Gas) emissions and air pollution footprint of their business by adopting green manufacturing technology and reducing energy consumption.

**PEOPLE:** They engage in fair labor practices which include minimum wages, protection for human rights, prevention of child/forced labor and encouragement of health and safety best practices. Another focus of their Corporate Social Responsibility is well being of the community. Their sustainability initiatives include developing community infrastructure, providing education and enhancing skills. For example, they have implemented CSR activities through SHARADA trust by upgrading local school infrastructure; establishing quality computer labs, internet, projectors at schools; enhancing livelihood skills for youth by providing training in garment manufacturing, sewing machines etc.

**MONEY:** They try to be fundamentally right in every approach of running business so they remain profitable, protected and sustainable. Sound finances and diligent investments have enabled aggressive expansion of the company.

References are available upon request.

Example Sustainable Practice Photographs taken by the researcher during Arvind Mill, India visit are available upon request.