The challenge of changing towards sustainability: A case study of the Bangladeshi garment industry

Master Thesis
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Dedication

A mi mejor amigo, mi padre. Por enseñarme el valor del “querer es poder!” Gracias por ayudarme a trazar mi rumbo con optimismo y confianza. Tus enseñanzas me han ayudado a creer en mí pese a las dificultades y la crítica. Te amo, sinceramente,

Gaby Costa
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Disclaimer

Hereby I declare, that I completed this thesis without external help, using only the sources and materials herein indicated within the provided timeframe. I did not submit previously this document as Master thesis elsewhere.
Abstract

The responsibilities of the private sector on environmental and social issues occurring from the production of goods are occurring through two main strategies “greening the supply production” or switching to a “product-based green supply”. This strategies are being implemented till some extent in the garment industry of Bangladesh, where sustainability concerns are extremely pressing. The understanding of sustainability and of supply management strategies are theoretically clear but have been insufficiently analysed in a comprehensive approach to understand the challenges that comprise. This study analyses the two aforementioned strategies occurring as a consequence of reactive and proactive changes. The methods used to collect data were semi-expert interviews; literature review, observations and revision of secondary documents. The data was triangulated and analyzed in its content. The results showed complex challenges that are boosted by the business as usual approach and the national conditions.
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1 INTRODUCTION

1.1 PROBLEM STATEMENT

The active involvement of the private sector, small entrepreneurs as well as larger companies is seen as a crucial prerequisite for achieving a more sustainable future. The ultimate expectation is a holistic improvement in the production of goods considering the three dimensions of sustainability at all organizational levels (Caniato et al. 2012:660; Houe & Grabot, 2009, Sobhani et al. 2009, Islam & Bjarnason, 2008:5). In fact, many businesses and organizations have started initiatives to become more sustainable (Caniato et al. 2012:660) by either “greening their supply production” or switching to a “product-based green supply” (Seuring, 2008:1703).

Both initiatives include technical innovations and organizational changes to produce goods containing green attributes (ie. less pollutant), considered to be of higher value (ie. 100% organic cotton) or comprising higher standards of production (ie. energy efficiency) (Solaiman et al. 2011:46; Barrientos et al. 2011:319). On the one hand, both initiatives have led to reduction of the environmental harm from production processes. On the other hand, empirically and in recent literature both initiatives lack an integration of the three dimensions of sustainability, neglecting the social dimension (Seuring & Müller, 2008:1702; Hamilton & Zilberman, 2006:627; Initiative, 2010:10; Islam, 2008; Rossi, 2011; Sobhani et al. 2009; Houe & Grabot, 2009).

The effective implementation of business initiatives rely heavily on management tools designed to aid in the completion of the businesses desired results (Pediret, 2000:783) and which are comprised mainly under the scope of the organizational change management literature (Kottler 2012; Carnall, 2011). The most holistic management approach inclusive of organizational change management is set out in the ‘Learning Organization’ by Senge (Cole, 2004). The objectives of the learning organization brings potential to consider the internal and external dynamics in order to align interests, combine efforts and foster learning through better communication channels inside the organization and within sectors.

While the understanding of sustainability, organizational changes and innovations management are theoretically clear, they are insufficiently analysed in an comprehensive manor when attempting to understand the challenges that organizations face when moving towards a sustainable production. A better understanding of the specific challenges that business organizations face in their attempt to become more sustainable will allow tailoring effective support policies. To unveil the challenges of organizational change towards a sustainable production, this study analyses six Bangladeshi garment companies that implemented four innovative concepts for more sustainable production. The analysis includes the following specific objectives:

(1) To provide an in-depth description of perceived challenges towards a sustainable production,

(2) to unveil the managerial strategies used to overcome challenges of organizational changes, and

(3) to understand the potential of the characteristics of the learning organization to overcome challenges towards a sustainable production.

The guiding questions of the research is: What are the challenges towards a sustainable production and how organizational changes are implemented?
1.2 COMPANIES ON THEIR WAY TO SUSTAINABILITY

Business organizations are social entities defined as “…organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free and where people are continually learning how to learn together” (Senge, 1999:3).

The continual expansion of the business organization’s capacity towards a more sustainable production has been under discussion since the release of the Brundtland report in 1987. The aim of a sustainable production is constructed through the main outcomes of the aforementioned report: the term “sustainability” and its “triple bottom line”. The term sustainability contains the expectation of "...being able to satisfy current needs without compromising the possibility for future generations to satisfy their own needs..." (World Commission on Environment and Development, 1987 in Caniato et al. 2012:660). And the “triple bottom line” appears to be used for monitoring business practice on three dimensions: economic, environmental and social (Caniato et al. 2012:660).

Business practices comprise an important range of action and responsibility towards a sustainable production due to their active involvement in the manufacture of goods and their participation in Global Production Networks(Caniato et al. 2012:659). Indeed, business organizations participating in Global Production Networks through the manufacture of goods represent 52 of the top 100 globally powerful economies, having more significant power than the states where they produce. Moreover, 1% (500) of business organizations controls almost 70% of the global trade and 50% of foreign direct investments. (Korten, 2001; Rugman, 2005 in Sikka, 2011:813).

The private sector is beginning to better understand social and environmental sustainability concerns, aimed at voluntarily improving their management practices and impacts along the supply chain (Sobhani et al. 2009:168). For example, the inclusion of sustainability procedures along the supply chain can provide a competitive advantage in the market due to the rising consumer’s awareness preferring sustainable products (Houe & Grabot, 2009).

Practices to assure the three dimensions of sustainability in manufacturing are rare (Initiative, 2010:10). The Industrial world accounts for an important share of environmental harm from the initial processing of raw materials to the final consumer (Sobhanni et al. 2009:180). The economic performance of a company is not always reflected in the benefits given to its workers (Barriéros et al. 2011:320). The production process should include technology that do not harm the environment and avoid social issues such child labor. Overall, it is suggested that industries should focus on efforts to build partnerships to create new product and process innovations, which have real impact along the supply chain to the final consumer (Seuring, 2008:1705).

Changes in the industries include organizational changes and innovations. Environmental changes and innovations are distinct from conventional innovations because the ultimate goal is a reduction of the impact on the environment. The environmental innovations take place generally in the process or the product characteristics (Rehfeld, 2007:93).

The ultimate goal of environmental innovations are distinct from conventional innovations because the ultimate goal is a reduction of the impact on the environment (Rehfeld, 2007:93, Ziegler, 2009:886). The environmental innovations take place generally in the process or the product characteristics (Rehfeld, 2007:93). “An environmental product innovation means the introduction of an environmentally improved or a new environmentally friendly product (eg.- solvent-free paints or energy efficient products)...An environmental process innovation means the introduction of a more environmentally friendly composition of one or more firm-internal processes (e.g., water, recycling or flue gas desulphurization...” Ziegler, 2009:889).

1.3 STRATEGIES TOWARDS MORE SUSTAINABILITY

The production of goods occurs through complex supply chains that require diverse activities from the initial processing of raw materials to the delivery to the consumer (Linton et al., 2007). Supply chain activities are associated with flow and transformation of goods, ranging from logistics and
transport to the internal and external communications of a company with the final consumer (Croom et al. 2000:69; Seuring 2008:1699). Therefore, the inclusion of sustainability in the supply chain requires organizational changes and innovations that implement different technologies or technical innovations in the long term (Rennings et al. 2006:45).

Organizational changes and innovations are defined as “...measures of relevant actors (...) which (i) develop new ideas, behaviour, products and processes, apply or introduce them, and (iii) contribute to a deduction of environmental burdens or to ecologically specified sustainability targets” (Rennings, 2000:322 in Wagner, 2008:392). The organizational changes and innovations aimed at making an impact on an environment level, require measuring productivity, reliability and safety goals (Rehfeld, 2007:93) and are closely link to industrial ecology (Seuring & Müller, 2008:1700).

The main soft environmental policies comprise environmental organisational measures such: 1.- Environmental criteria in the product planning and development; 2.- Certified environmental management systems (EMS); 3.- Life Cycle Assessment activities of own products; 4.- Waste disposal or take back systems of own products and 5.- environmental labelling (Rehfeld, 2007: 92).

Moreover, it is argued that the theory of technology push and market theory are determinants of organizational changes and innovations. “The technology push theory assumes that the main driving force of progress are new technological opportunities" (Rosenberg, 1974 in Rehfeld, 2007:92), while market pull factors are key in the allocation of inventive efforts (Rehfeld, 2007:92).

The organizational changes and innovations translated in practices including sustainability in supply chains are classified through two main strategies. The first is greening the production or “greening the supply process”, which is related to supplier management for risks and performance. The second strategy is through a “product based green supply”, which is related to supply chain management for sustainable products (Seuring, 2008:1703).

1.4 GREENING THE PRODUCTION AND PRODUCT BASED GREEN SUPPLY

The environmental innovations comprised in greening the supply process and the product based green supply are complementary for a sustainable production but not mutually exclusive. The strategy of greening the supply process is referred to as a supply management for risks and performance. The focus of the related practices is the compliance of standards to prevent reputation loss from issues and concerns arising from any of the sustainable dimensions in the production process (Seuring, 2008:1704).

Management systems are used to measure the performance and manage risk in the supply chain. The most commonly used management system in the environmental dimension of sustainability is the ISO14001 certification. Management systems for the social dimension while less common, can be recognized in certifications as Social Accountability 8000 (SA8000) or organizations codes of conduct (Seuring, 2008:1704).

The attained practices of the aforementioned management systems involve monitoring, evaluation, reporting and the enforcing of sanctions (Seuring, 2008:1704). For instance ISO14001 includes “..i.e. a facility must undertake an initial comprehensive review of its environmental practices and systems, formulate and implement and action plan for environmental management, identify internal governance responsibilities for environmental issues, and have a plan to correct environmental problems.....Furthermore, the certification requires third party audits” Ziegler, 2009:886).

The production performance under scrutiny comprises the aforementioned operations used to reach quality, speed, dependability, flexibility and cost in concordance to minimum standards and codes of conduct. There is less of a focus on changing corporate policies to integrate the related goals of sustainability (Seuring, 2008:1704), because the ultimate outcome is expected can be derived the improvement of relations, performance and reputation along the supply chain.
The supply management for sustainable products ultimate aim is competitive advantage through satisfying consumer demands relating to the environmental and social quality of the product (Seuring, 2008:1705; Cole, 2004:207). The attributes required from the production process to change towards biodegradable and non-toxic products can be tested (Hamilton & Zilberman, 2006: 627; Brécard et al. 2009:115; Houe & Grabot, 2009:22). The measurement of the attributes of a product relied on life-cycle management (Seuring, 2008:1705).

The practices require joint initiatives and building partnerships along the supply chain to ensure product introduction and processing with the desired qualities. The success of practices requires training and deeper information flows to assure that suppliers improve their performance (Seuring, 2008:1705).

1.5 PROACTIVE VERSUS REACTIVE CHANGES

Strategies involving greening the supply process or product based green supplies require organizational changes and innovations. Depending on the cause that motivates the change the strategies can be categorized as proactive or reactive changes. If the organizational change comes from an internal decision, then the change is a proactive one but if is in response to external factors then it is a reactive change (Cole, 2004:204).

Proactive changes include new visions and mission strategies, efforts towards cultural change such as management style or collaborative working style and production process comprising the need to improve quality, productivity, standards and efficiency (use of resources). Reactive changes include response to failure of suppliers to meet standards of the organisation, consumer’s preferences, change in rules of trade and competitor’s tactics (Cole, 2004:206). The structure of the organization will influence and will be influenced by the change and external factors (Cole, 2004:206). It is argued that proactive changes are more prone to long-term success than reactive changes.

The combination of organizational identity and the learning capacity of the organization facilitates adaptability instead of constrains (Cole, 2004:206). The meaningfulness of change in identity has a key role strategically and contextually (Easterby-Smith & Lyles, 2003:624-625). The governance structure as defined by the business culture, identity, mission and vision reflected in its management assures the success of proactive changes.

Proactive changes are most commonly trigger by 1.- the desire to change for setting up higher sustainability standards in production to boost competitive advantage and 2.- Corporate Social Responsibility (including fear of reputation loss)(De Brito et al, 2008:537). Triggers for reactive changes are: 1.- Forced by legislation (recycling, social working conditions, CO2 emissions) (De Brito et al, 2008:537); 2.- Integrated Public Policies; 3.- Response to Stakeholders; 4.- Customer Demands; and 5.- Environmental and social pressure groups (Seuring: 2008:1703).

1.6 SUSTAINABILITY INNOVATIONS IN THE GARMENT INDUSTRY

1.6.1 FAST FASHION VERSUS SLOW FASHION

1.6.1.1 FAST FASHION

Fast fashion is the current dominant business model of the garment industry. The business model relies on high flexibility from manufacturers and fast paced markets (Rossi, 2013:223). Flexibility relates to the capacity to respond to changes and diversifying products quickly. The rapid pace of markets is boosted by in-built obsolescence (lower life cycle) and through perceived obsolescence by the creation of more than 4 fashion seasons in a year (Bly et al. 2015:125 ; Christerson, 1996:36).
The fast fashion business model exacerbates environmental harm and social issues triggered by low production costs (Antanavičiūtė, 2015:55; De Brito et al. 2008:538). Moreover, the accelerated production and disposal of garments aggravates the size and cost of waste management in landfills (Christerson, 1996:36; Domina, 1997:96).

The fast fashion model requires intense use of resources that extend beyond labor force and raw materials to land and water (De Brito, et al, 2008:538). The world demand of crops for the textile and clothing industry such as cotton, wool and cellulosic fibres shows dramatic increases (reaching 69.7 million tons in 2010 (FAO, 2013)). Growing fibres requires immense quantities of water, fertilizer and pesticides that have a direct impact on water and soil fertility (Fletcher, 2013:11).


A number of social issues are triggered by the low cost facilities and low costs in labor (Fletcher, 2010:260). For example, industries refrain from complying with minimum standards such as working conditions, fire and safety and the avoidance of harmful substances (Initiative, 2010:14; Islam & Bjarnason, 2008: 9). Moreover, particularly in “high seasons” complying with the legal work limits and correct payments is nearly impossible, as a regular production commonly sees delays in payments of up to 3 months (Welford, 2006:172).

1.6.1.2 SLOW FASHION

In contrast to fast fashion, slow fashion is comprised of different business values and goals, which are less materially growth-focused. Production practices range from traditional techniques, production of durable goods or simply slower production (Fletcher, 2010:263).

Slow fashion is nested in the slow culture movement. “… a different worldview that names a coherent set of fashion activities that promotes variety and multiplicity of fashion production and consumption that celebrates the pleasure and cultural significance of fashion within biophysical limits” (Fletcher, 2010:262).

This manufacture of garments within in slow fashion is environmental and human friendly (Antanavičiūtė, 2015:55), with real positive impact being seen on ecosystems, communities and workers (Fletcher, 2010: 263). Practices involved in this process, pay special attention to the design of the product and the flow of resources. (Fletcher, 2010: 264).

To obtain high quality, it is common practice to use pure raw materials. Long lasting garments are also made by avoiding production habits relating to fast fashion and instead using timeless original designs suitable for different people regardless of size or age (Antanavičiūtė, 2015:56). In slow fashion the average lifetime of a garment is 3 years, which differs from the fast fashion model which is one season (Antanavičiūtė, 2015:55).

The production process aims to reduce waste to zero with the production of high quality and long lasting garments. Furthermore, the production process aims to reduce waste either chemical or solid. This is achieved by changing the usage of chemical dyes to natural or biodegradable dyes (Antanavičiūtė, 2015:55) and the adoption of technical innovations such as the repurpose of waste into new added value garments (Modi, 2013:5).

1.6.2 UPCYCLING

McDonough and Braungart in “Cradle to Cradle” (2002) call for consistency across markets in relation to raw materials being totally reusable, compostable or recyclable (Bly et al. 2015:125). In response, the garment industry is trying to create a new ecologically responsible business philosophy while at the same time trying to find ways of recycling textile waste (Domina, 1997:96).
According to the designer Teli et al. (2014), “Upcycling is the process of converting waste materials or useless products into new materials or products of better quality by value addition or refurbishing. Upcycling is necessary as a substitute to producing new things to meet the increasing demands of consumers. The repurposing of waste is different from recycling because does not change its original composition (e.g. bottles turned into textiles). The focus is on creating new products out of waste (Modi, 2013:12).

The upcycle technique relies on waste mapping to determine what kind of waste is useful and available. There are three types of solid waste (as seen in picture 1) classified as: 1. Industry waste also known as post-producer waste which is produced by manufacturers and includes fabrics, cut fabrics and yarn 2. Consumer waste or post-consumer waste, which are the items that the consumer decide to discard. 3. Pre-consumer waste, which is the unsold merchandize generated by retailers and brands (Domina, 1997:96).

The upcycle of waste can be seen in picture 1, where according to the designer Reet Aus (2015), the most difficult design for upcycling is one using industry or post-consumer waste because the complexity of design is higher, more time consuming and overall expensive (interview, http://www.reuse.ee/); (Aus, 2011:15 not published).

The production waste can be reduced by improving the efficiency of the patter maker () and combined with upcycle designs for the left overs (Aus,2011:14). The common alternative in place for production waste and pre-consumer waste is the recycling into new raw materials for automotive parts, furniture, mattresses, coarse yarn or used for energy production by textile mills (Domina, 1997:96).

The pre-consumer waste is the most sensitive for the brand because unsold products must be handled carefully and often mutilated. The upcycle is an option which avoids the destruction of brand new items, new fabrics and used items which already compromise high quantities of energy, water and raw materials (Aus, 2011:32 not published). The reduction of CO₂-emission and water usage is a significant consideration when life cycle assessments are performed (Aus, 2011:53).
The costs of recycling and downcycling waste are higher for small producers. Particularly in developing countries where technology for recycling or downgrading is considered a high investment (Domina, 1997:96). Therefore, waste management is still the cheaper option (interview, http://www.reuse.ee/).

The post-consumer waste of an average UK consumer was 35kg of clothing annually from which 75% ended up in landfill. A common alternative to the reduction of post-consumer waste is offered by Non-Profit organizations who commercialize or distribute second-hand clothing. A complementary economic system benefiting from used clothes are the rag graders (Domina, 1997:96).

The disposal of clothes requires a waste management database to allow designers, retailers and factories to acknowledge what is in stock. For example, in Estonia web based platforms have been created -Trash to Trend (http://trashtotrend.com) and (http://www.reuse.ee).

1.6.3 NATURAL DYING

An alternative to chemical dyes is the natural dying techniques from plants, animals and minerals. The use of plants is the most popular in the garment sector. Plants possess a wide range of colors but not all can be extracted for dyeing or adsorbed by fibres (Siva, 2007:916).

Some fabrics can be dyed directly and others require mordants. Mordants allow color fixation and in larger scale productions, however a minimum number of chemicals is always required to obtain the desired quality. “There are three types of mordant: Metallic mordants: metal salts of aluminium, chromium, iron, copper and tin. Tannins: Myrobalan and sumach are commonly used in the textile industry. Oil mordants: These are mainly used in dyeing turkey red colour from madder” (Siva, 2007:917).

The range of colors that can be obtained from plants are reds, yellows, blues, black and a combination of these. In table 1 the possible colours obtained from different sources or plants parts are set out.

The use of mordants determines the fastness of the color, the shades and how the colours are influenced by different factors such as sunlight, temperatures and fibre. The environmental toxicity of alum and aluminium sulphate (which are both used in this process) are almost nil (Samantaa, 2009:390). Furthermore, as an additional benefit, alum provides good wash fastness and colour fastness. However, while ferrous sulphate, iron and acid all give high resistance to fading, alum does not. (Samantaa, 2009:390).

There are common practices involved in the natural dying of clothes depending the colors, fibres and finishing. The dying process can take place in an alkaline bath, acidic bath or in a neutral bath. The clothes can be dunged, washed, bleached or steamed before an alkaline lye is applied (Samantaa, 2009:390. The alkaline lye is rinsed and the clothes are dyed and dried. The dyeing process can last two-four days and the dyes can be reused multiple times. (Samantaa, 2009:391)

The preparation of the dye might be different depending on the color and the textile which is being applied. A general preparation of dyes includes crushing the source or plant part until finding the consistency of a powder. The crushed powder is boiled in water. The use of cold water is sometimes required to steep the dye as well as the use of a mordant (Siva, 2007:918).

The use of natural dying techniques are however getting lost with the automatization of production; claims centre around a lack of economics of scale and lack of expertise to develop the technique in larger scales (Siva, 2007:917). Additionally, synthetic dyes are cheaper and provide a wider range of color and fastness properties (Samantaa, 2009:384).

One reason why natural dyes are becoming more popular however is the reduced toxicity and allergic reactions compared to synthetic dyes. Also stringent environmental standards in many countries are increasing the interest in the biodegradability of the natural dyes, even when its applicability decreases the overall speed of the dying process (Deo & Desai, 1999:224).
1.6.4 FIRE AND SAFETY STANDARDS:

“The ‘Accord on Fire and Building Safety in Bangladesh’ (the Accord) was signed on May 15th 2013. It is a five year independent, legally binding agreement between global brands and retailers and trade unions designed to build a safe and healthy Bangladeshi Ready Made Garment (RMG) Industry. The agreement was created in the immediate aftermath of the Rana Plaza building collapse that led to the death of more than 1100 people and injured more than 2000. In June 2013, an implementation plan was agreed leading to the incorporation of the Bangladesh Accord Foundation in the Netherlands in October 2013.

The agreement consists of six key components (see Figure 2):

1. A five year legally binding agreement between brands and trade unions to ensure a safe working environment in the Bangladeshi RMG industry
2. An independent inspection program supported by brands in which workers and trade unions are involved
3. Public disclosure of all factories, inspection reports and corrective action plans (CAP)
4. A commitment by signatory brands to ensure sufficient funds are available for remediation and to maintain sourcing relationships
5. Democratically elected health and safety committees in all factories to identify and act on health and safety risks

Table 1: Sources of different coloured dyes and mordants (Siva, 2007:918)

<table>
<thead>
<tr>
<th>Colour</th>
<th>Botanical name</th>
<th>Parts used</th>
<th>Mordants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red dye</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safflower</td>
<td>Corchorus tinctorius L.</td>
<td>Flower</td>
<td>–</td>
</tr>
<tr>
<td>Caesalpinia</td>
<td>Caesalpinia sappan L.</td>
<td>Wood</td>
<td>Alum</td>
</tr>
<tr>
<td>Madder</td>
<td>Rubia tinctorium L.</td>
<td>Wood</td>
<td>Alum</td>
</tr>
<tr>
<td>Log wood</td>
<td>Haematoxylon campechianum L.</td>
<td>Wood</td>
<td>–</td>
</tr>
<tr>
<td>Khirt paik</td>
<td>Rumex dentatus L.</td>
<td>Wood</td>
<td>Alum</td>
</tr>
<tr>
<td>Indian mulberry</td>
<td>Mormorina tinctoria L.</td>
<td>Wood</td>
<td>Alum</td>
</tr>
<tr>
<td>Kamala</td>
<td>Mallotus philippinensis Moell.</td>
<td>Flower</td>
<td>Alum</td>
</tr>
<tr>
<td>Lac</td>
<td>Coccus lacca Kerr.</td>
<td>Insect</td>
<td>Stannic chloride</td>
</tr>
<tr>
<td>Yellow dye</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golden rod</td>
<td>Solidago grandis DC.</td>
<td>Flower</td>
<td>Alum</td>
</tr>
<tr>
<td>Teak</td>
<td>Tectona grandis L.f.</td>
<td>Leaf</td>
<td>Alum</td>
</tr>
<tr>
<td>Marigold</td>
<td>Tagetes sp.</td>
<td>Flower</td>
<td>Chrome</td>
</tr>
<tr>
<td>Saffron</td>
<td>Crocus sativus L.</td>
<td>Flower</td>
<td>Alum</td>
</tr>
<tr>
<td>Flame of the forest</td>
<td>Butea monosperma (Lam) Taubert</td>
<td>Flower</td>
<td>Alum</td>
</tr>
<tr>
<td>Blue dye</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indigo</td>
<td>Indigofera tinctoria L.</td>
<td>Leaf</td>
<td>Alum</td>
</tr>
<tr>
<td>Wood</td>
<td>Isatis tinctoria L.</td>
<td>Leaf</td>
<td>–</td>
</tr>
<tr>
<td>Sunt berry</td>
<td>Acacia nilotica (L.) Del.</td>
<td>Seed pods</td>
<td>–</td>
</tr>
<tr>
<td>Piyvet</td>
<td>Ligustrum vulgare L.</td>
<td>Fruit</td>
<td>Alum and iron</td>
</tr>
<tr>
<td>Water lily</td>
<td>Nymphaea alba L.</td>
<td>Rhizome</td>
<td>Iron and acid</td>
</tr>
<tr>
<td>Black dye</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alder</td>
<td>Alnus glutinosa (L.) Gaertn.</td>
<td>Bark</td>
<td>Ferrous sulphate</td>
</tr>
<tr>
<td>Rohilamala</td>
<td>Laurus nobilis L.</td>
<td>Leaf</td>
<td>Ferrous sulphate</td>
</tr>
<tr>
<td>Custard apple</td>
<td>Anona reticulata L.</td>
<td>Fruit</td>
<td>–</td>
</tr>
<tr>
<td>Harda</td>
<td>Terminalia chebula Retz.</td>
<td>Fruit</td>
<td>Ferrous sulphate</td>
</tr>
<tr>
<td>Orange dye</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Annota</td>
<td>Bixa orellena L.</td>
<td>Seed</td>
<td>Alum</td>
</tr>
<tr>
<td>Dhalia</td>
<td>Dhalia sp.</td>
<td>Flower</td>
<td>Alum</td>
</tr>
<tr>
<td>Lily</td>
<td>Convallaria majalis L.</td>
<td>Leaf</td>
<td>Ferrous sulphate</td>
</tr>
<tr>
<td>Netties</td>
<td>Urtica dioica L.</td>
<td>Leaf</td>
<td>Alum</td>
</tr>
</tbody>
</table>
6. Worker empowerment through an extensive training program, complaints mechanism and right to refuse unsafe work.” (Bangladesh Accord, 2015)

“In June 2013, the US announced the suspension of Bangladesh’s trade benefits under the Generalized System of Preferences (GSP). In order to regain these benefits, the US demanded that Bangladesh improve its monitoring and inspection of factories and increase “fines and other sanctions, including loss of import and export licenses” that fail to comply with labor, fire, or building standards. In July 2013, the EU’s European trade commissioner, Karel De Gucht, warned that Bangladesh might lose its duty-free and quota-free access to the EU if it did not improve its record on labor rights and workplace safety. The EU will conduct a review in the summer of 2014” (HRW, 2014).

Figure 2: Info graphic on ACCORD on fire Building Safety in Bangladesh
2 THE CHALLENGE OF ORGANIZATIONAL CHANGE TOWARDS SUSTAINABLE PRODUCTION

Organization changes is a common strategy to achieve new goals and is imperative for most organisations due to fast-paced market changes, ever-accelerating technology cycles, gyrating capital markets which demand adaptability from organizations (Cole, 2004:203). In the last decennia, sustainable concerns gained increasing attention as a driving force for change (Caniato et al., 2012:659).

Organizations are complex systems, highly dependent and interconnected with differing features (see figure 3). An analysis of organizational change comprises the features of an organization (Cole, 2004:203) and the surrounding environment are considered overall as a business unit (Croom et al. 2000:68). Figure 2 shows how the external environment influences and is influenced by the features of an organization.

There are embedded difficulties of predicting and tracking the consequences of change (uncertainty). The dynamics of change generates a cascade of consequent changes that require time consuming restructure of the organization architecture affecting values (Hannan, 2003:463), people and efficiency on business processes (1). Uncertainty affects the organization depending if it is ready and able to change. In the latter case, changes can be disruptive or adaptive, thus, affecting the survival of the organization (Singh, 1996).

The features of an organization are framed as: Mission, goals, strategy; Decision and Communication Channels; Organisation Structure; Jobs and Roles Culture; People (management style, knowledge and skills); Technology; Current Products and Services and Business Processes.

Figure 3: Features of an organization influence and influenced by organizational change

The external environment involves a wide range of activities and actors involved in the supply chain until the final consumer (Croom et al. 2000:69; Seuring 2008:1699). External environment factors of
influence include the external rules and conditions defined in the local, national and international stages; and the territory that the business covers (Gereffi, 1995). This feature includes market players (Gereffi, 1995), the infrastructure available (Maiiese, 2005) and market factors such as product price (Rehfeld, 2007:92) and costs of change (Cole:2004).

Organizational changes mainly require changes in technologies (technology push) or creativity to generate innovations (). The competitiveness in markets based on low cost of production and the high costs of alterations and innovations are barriers to change (Seurign, 2008:1704). It is assumed that technology is relevant for the first steps of change and innovation, but that the market factors determine its continuity (Rehfeld, 2007:92).

The mission, goals and strategy determine the organizational identity and are accomplished by the people, their management styles (Carnall, 2006:5; Cole, 2004:3-4) and consequent strategies (Carnall, 2006:20; Kottler, 2008). Individual goals and the organizational goals are broadly shared through the right motivation and communication (Carnall, 2006:20). The organizational goals are generally reached through obtaining efficiency, adaptability and effectiveness in the business process (Carnall, 2006:20).

Decisions related to change are taken according to the management style. The most important decision for managers is the selection of the corresponding business model to adapt to changes and the communication strategy to assure implementation (Carnall, 2006:20). Communication channels are common barriers for change due to insufficient or missing communication in the supply chain (Seurin, 2008:1704) and inside the organization (Cole, 2004).

The most important factor of the organization is the people (Cole:2004, 198). Issues rising from the human factor are motivation, satisfaction and consequently commitment from the workforce (Cole, 2004:3-5). “Soft issues” can relate to resistance from people to change which is mainly defined as a resistance to uncertainty. Business processes require high emphasis on intrinsic motivation from career development and incentive systems (Carnall, 2006:23).

There is not a general organisation structure as it depends greatly on the kind of industry and scale of production. The type of industry defines the skills required (Rossi, 2013) and the consequent distribution of jobs (Carnall, 2006:5). The organisation structure defines job activities, responsibilities and accountabilities (Carnall, 2006:12).

The knowledge of people in the organization is concentrated in communication and skills. The organization boosts techniques and specific knowledge through training and team working (Carnall, 2006:23). The main learning modes involved in change are: Learning by doing; Learning by use and Learning from failure (Carnall, 2006: 47).

The technology used determines the waste and resource efficiency used in the business process. The technology influences product innovations, services provided and the job and skills required. “...we are witnessing the appearance of new technologies such as sonic welding, automated knitting or inkjet printing on textiles, which can revolutionise production” (Sarma, 2004 in DeBrito et al., 2008: 542)

“Body scanners lay the way for customised apparel and advanced software is easing the work of designers, who can better explore new ideas and new materials. Nanotechnologies are leading to the appearance of the so-called smart clothes, which self-clean thanks to impregnated enzymes or perform other functions due to nested electronics” (Seuring, 2008:542).

Products and services satisfy the consumer demand and are an important reason to change. The use of resources with characteristics such as “organic” are gaining strength with the aim of providing a minimum purchasing price to western and Central African producers, such as the joint effort through the label Global Organic Textile Standards (GOTS). The viability of the label relies on more than 1000 providers and started with over 30 retailers who adopted a “biological programme” (De Brito et al., 2008:543)
2.1 CHALLENGE CATEGORIES

There are three major challenges for organizational change: First, there are the difficulties of predicting and tracking the consequences of change (uncertainty). The dynamics of change generates a cascade of consequent changes that require time consuming restructure of the organization architecture which in turn affects values (Hannan, 2003:463) and efficiency on business process (). The uncertainty affects the organization depending if it is fit or not for the change. In the latter case, changes can be disruptive or adaptive, thus, affecting or not the survival of the organization. Organizational changes such as mergers are considered lethal for an organization (Singh, 1996). The organizational identity and the management style guide a change to be an adaptive one instead ().

Second, there are the people and soft issues relating to resistance to change and to uncertainty (Carnall, 2011:20). Resistance to change comprises the communication channels, key individuals acting as agents of change, sufficient communication allowed, skills and motivation (Cole, 2004: 206; Seurin, 2008:1704).

Third and finally, there are the costs of change include direct costs, indirect costs and costs on not taking action. Direct costs include the expenses for technology, equipment, relocation costs, recruitment and possible redundancy payments, while the indirect costs might include training, internal communication and redeploying key managers and staff on change projects (Cole, 2004:206).

The costs of organizational changes are a challenge because they affect the sources of profit which are a combination of organizational innovation, scale of production and, technological innovation and proprietorship (Gibbon, 2001:346).

A previous study on challenges towards sustainability recognised higher cost of dealing with chemicals; difficulties to attract and retain skilled labour including providing skills and development plans for employees; include sustainability in the stakeholders expectations in managerial orientation and decisions; view of responsibilities (past and future); delivery time and transportation distances (De Brito et al., 2008:548).

Considering the features of the organization explained and the identified challenges to change found in the literature (Hannan, 2003; Cole, 2004; Rehfeld, 2007; De Brito et al., 2008; Seurin, 2008 & Carnall, 2011) figure 3 sets out five categories which describe the main challenges to changing or innovating for more sustainability. For a more detailed description see chapter 2.1.
Figure 4 Different categories of challenges of change (Hannan, 2003; Cole, 2004; Rehfeld, 2007; De Brito et al., 2008; Seurin, 2008 & Carnall, 2011)
Strategies to greening the supply chain and product based supply technology and versatile design are necessary to improve efficiency in the use of resources, improving the features of the product or producing higher standards in production (Barrietos et al. 2011:319). Thus, in the category ‘Production’ above, the analysis of the business processes occurs in the stage of manufacture. The manufacture process is analyzed in two main aspects ‘Technology’ and products and services. The latest is framed as ‘Product Features’ because the competitiveness of sustainable products is based on their characteristics. In this category, the environmental dimension of sustainability is the most notoriously addressed since the objective of innovations are a reduction on environmental harm (
).

In the Market category the analysis works on the assumption that even when technology allows innovation, the future of it depends on the market. The analysis of the market is taken as an analysis of the environment or external factors. The units of analysis are market players in the role of the buyer, business model and costs. In this category the economic dimension of sustainability is touched upon.

In the skills and capacity category the analysis is based on the jobs and role culture involved in the manufacture of goods. It comprises career development, the job, role culture involved and the skills required through the training and the career development embedded.

In the mental models, analysis looks at communication strategies and management style which pave the path to enable acceptance in relation to organizational change inside the organization. There is a strong component of the management style and strategies used by the organization.

In the category communication, analysis of joint efforts internally (workers) with the external environment (market players and social society) is key. This category comprises a strong component of the social dimension of sustainability (Seuring, 2008:1705).
2.1.1 PRODUCTION PROCESS & MARKETS

2.1.1.1 TECHNOLOGY
The technology push theory emphasizes the challenge of innovation is based on the dependency on technology, thus its availability (Rehfeld, 2006:92; Horbach, 2008:164; ) as the necessary prerequisite for change and innovation, which will be further determined by the market (DeBrito et al., 2008: 542). The driver of innovations are technological opportunities and consequently the capacity of research and development activities in the innovation (Rehfeld et al., 2002:92)

Knowledge such creative and versatile design (DeBrito et al., 2008:543) are included as the technological capabilities to further develop innovations (Horbach, 2008:164). The introduction of new technologies in the production process has to generate a change in the impact on environment and workers from production to be considered an environmental innovation (Fletcher, 2010: 263; Modi, 2013:5; Antanavičiūtė, 2015:55).

2.1.1.2 PRODUCT FEATURES
The need to satisfy consumer demand (Cole, 2004:2007) can require changes to the product to incorporate sustainable characteristics (Houe & Grabot, 2009; Rehfeld, 2007:92 ). The most common tools to inform the features of sustainability in a product and in the production is by using soft environmental policy instruments such certification schemes and label schemes (Rehfeld, 2007:92).

Labels are classified mainly depending if they are a “self declaration claim” or an “independent third party claim” (Rashid, 2009:133). The two main critiques to labels are: (i) that its proliferation has generated credibility concerns and (ii) they are becoming a barrier for trade. Evidence from the Ecolabel Index in 2012 showed 431 registered Ecolabels in 246 countries (SEIFER, & COMAS, 2012). The credibility concerns come from the skepticism that the procedure to obtain them is fast and without impact analysis (Initiative, 2010: 5).

The use of labels encourages a form of product purity on the chain and boosts a sense of common reputation to cover all the entities along the supply chain (Hamilton & Zilberman, 2006: 641). The quality of product is mainly addressed in the raw material, for instance the label GOTS for organic cotton (De Brito et al., 2008:543). The most used certifications for standards in production are ISO14001 (environmental dimension) and SA8000 for working conditions such as salary (Rehfeld, 2007: 92). The high costs of labels and certifications are a barrier for small scale environmentally friendly or sociable responsible producers (Hamilton & Zilberman, 2006:641).

2.1.2 MARKETS
2.1.2.1 BUYERS ROLE
The most difficult change in production is to change production from assembly to offer a full package, like a branded product. The process is eased when linkages between an assembly manufacture is established with a leading firm coordinating the supply chain. Leading firms are characterized by providing material input and technology and knowledge transfer to the organizational networks (Gereffi, 1999:38-39).

In order to change production, linkages with the leading firms are determinant. The market transactions in trade between manufacturers and buyers are often self-regulated. The conditions of transactions are determined by the agents holding power (leading firms) and their ability to coordinate the system, which are not necessarily the ones owning the resources (Gibbon, 2001:346). The coordination ability of leading firms is in mastering a buyer role. Buyers have an implied power
2.1.2.2 COSTS & INVESTMENTS

The costs of production, usually affects wages and the standards of facilities (Ahamed, 2005). The costs of recycling and downcycling waste are higher for small producers, which are considered of high investment (Domina, 1997:96). The higher added value activities of changes generate new price pressures (Bair, & Gereffi, 2001:1887).

The change toward sustainability further affects the competitiveness on the international market. The costs of change are usually high and require investment capacity (Seurign, 2008:1704). For example, some organisations experience an increase in production costs from complying with standards such as sanitary and phytosanitary measures (WTO, 2010) or from upgrading technologies for treatment of dyes (WTO; 2003:70). The costs of meeting this requirement affects the organizations competitiveness on the export market, unless consumers prefer the products feature and price resulting from the change towards a sustainable production (WTO, 2010).

2.1.2.3 BUSINESS MODEL

The changes and innovations that are pursued from production processes should include the interconnection of the economic, social and environmental dimensions of sustainability. Therefore, the business models are question to improve their performance. It is argued that the production of goods causes environmental degradation at all stages, from manufacture, use or disposal (Rehfeld, 2007:91).

The manufacture of garments is a labor-intensive industry allocated mainly in countries with low wages (Gereffi, 1999:49). Particularly in “high seasons” complying with the legal work limits and correctly payment is nearly impossible. In a regular production a delay in payments up to 3 months is common (Welford, 2006:172).

The implementation of changes requires strategic planning to select the correct business model. This process “requires decisions of which products/services, to which customers, at what prices, through which delivery channels or systems, when and in what quantities” (Carnall, 2006:79). The selection of a business model is expected to improve sustainability and generate improved conditions for workers. The standard business model, in a neoliberal free market economy, promotes decoupled objectives and conditions of competition that brings up distributive struggles (Selwyn, 2013:80).

The competitiveness of an organisation based on production at the lowest marginal costs is the single biggest factor that hinders change (Barrietos, 2011:322 & Selwyn, 2013:82). However, according to Senge (1999) the only sustainable competitive advantage of an organization is a business model based on its ability to learn fast in all levels of the organization (Senge, 1999:4).

2.1.3 SKILLS AND CAPACITY

2.1.3.1 DESIGN AND PRODUCT DEVELOPMENT

The exchange between buyer firms coordinating the supply chain and suppliers is important to allow knowledge transfer (Gereffi, 1999:38-39) and to facilitate manufacturers to be on a dynamic learning curve to change or innovate production (Gibbon, 2001: 347). To be able to change production is necessary in leading firms if they wish to have a buyer role.

The mastery of a buyer role requires investments in market information, design products and develop products (Gibbon, 2001: 346-347). The most expensive and profitable activities in the garment production is the design and marketing of the product (Gereffi, 1999:51; Gibbon, 2001:347).
Product development also requires higher valued added activities such as quality control. Overall, these activities are mainly undertaken by foreign buyers (pag. 1887).

The garment industry is a buyer driven industry, which is not dependant on machinery but the labor force (Gereffi,1999; Gibbon, 2001). Thus in the garment sector, the dominant variable is the highly routinized activities or simple assembly of inputs (Barrietos, 2011:328), performed by a young female force with low skill levels and education and coexisting with a regular and irregular workforce (Bair and Gereffi, 2001:1889). Suppliers mainly reside in low wage countries which have a large workforce made up of unskilled female workers (Bair and Gereffi, 2001:1889).

The challenge for the garment manufacturers is to loose dependency on foreign design and create capacity in-house. Successful experiences have been seen in the Mexican industry, where manufacturers found as a strategy to develop their own export niche market selecting consumers closer to their fashion style based on cultural similarities (Bair and Gereffi, 2001:1890).

The economic development of an organization challenge is to improve life standards. Human beings do not pursue only wealth or accumulation of goods but other means that can assure freedom. Freedom is described as a state where each person has the ability to act and chose freely. Freedom can be obtained through learnt skills, which in turn improves their human capabilities (Sen, 2001, 99).

2.1.3.2 INFRASTRUCTURE FOR CAPACITY BUILDING
The challenge of capacity building activities is to strength the capacity of individuals to define and solve problems. The availability of basic needs and its related infrastructure (drinking water, health care, basic education, roads, electricity, among others) hinders the effectiveness of capacity building activities (Maiese, 2005). Besides infrastructure for capacity building, the use of interactive ways of learning such as information exchange (e.g. world cafes) is important. Career development enforcing skills and capacity requires tools, a guiding philosophy and time investment at all levels of an organization (Senge, 2013).

2.1.4 MENTAL MODELS
The mental models of people are those rooted assumptions, generalizations and even pictures that influence the understanding of the world (Senge, 1999:7), that could generate resistance to change (). The most common challenges for any sort of change is resistance to change (Cole, 2004, page. 206).

The key factors to overcome resistance to change are information and learning. Information is vital to allow learning and enable readiness to change (Armenakis et al. 1993:682). Readiness to change is a cognitive precursor to behaviour that enables acceptance to change. This is also referred to as unfreezing which “...is reflected in organizational member’s beliefs, attitudes, and intentions regarding the extent to which changes are needed and the organization’s capacity to successfully make those changes” (Armenakis et al. 1993:682).

The analysis of resistance to change require three dimensions of attitudes: the cognitive, emotional and intentional (Piderit, 2000:783). The selection of strategy for creating readiness suggest useful the understanding of individual and cultural differences coupled with traditional causes of resistance (trust) and within the context of each organization (Armenakis, 1993: 685).

2.1.4.1 COGNITIVE
The cognitive level is attached to the sustainability message, and should include the environmental knowledge regarding environmental issues and knowledge of green product features. Further, the level of knowledge determines the decision making process of an individual. The first type of knowledge is the general knowledge regarding pollutions, habitat depletion, green house effects
Creating readiness requires proactive attempts by a change agent in transmitting a message that allows the understanding of change in the cognitive level. The message should include two aspects: the information necessary to communicate need for change (allowing the discrepancy with the desired end-state) and the perception of the ability to change to assure efficacy (Armenakis et al., 1993:684).

The discrepancy factor requires the communication of why change has to occur. The message and its messenger has to inform where the organization is at the moment; what it wants to be; and why that end-state is necessary. Efficacy is the desired result of the message, which is the understanding from workers that they are capable of accomplishing the change with their skill-set. Besides an agent of change, the cognitive level at the individual sphere (individual readiness), the social interactions in the organization and social phenomena (collective readiness) can all contribute to the creation of this readiness (Armenakis, 1993: 685).

2.1.4.2 EMOTIONAL AND INTENTIONAL

The emotional dimension implies feelings in response to the attitude object (Pediret, 2000:786). The emotional dimension of resistance is “feelings, moods, emotions and sympathetic nervous-system activity that people have experienced in relation to an attitude object and subsequently associate with it” (Pediret, 1998:272). The negative dimension of emotional responses at workplace can reach aggression, frustration and other undesirable behaviours (Piderit, 2000:785).

The positive intentions that potentially motivate the acceptance and responses towards change are largely overlooked. Arguably, there is major consideration on prescriptive tools to allow managerial interests to be enable than consideration of motivation towards change through the analysis of workers interests. Participation in the design of strategies towards change can bring motivational and cognitive effects to overcome resistance (Piderit, 2000:783).

The challenge of motivation is to identify how the “achievement-oriented motivation” can hindrance the psychological, social relations and overall personal happiness (Sen, 2001, 99), particularly when is focused on accumulating goods (Sen, 2001, 100). The questioning of how a non-profit motivation should be considered by usefulness or other important value is still undermined. In that respect, even when studying alternative behaviour norms is not profitable, “non profit behaviour is important in that less ambitious but more practical context” (SEN, 2001:110 ).

The intentional dimension is related to behavior, therefore is not always easy to separate from the emotional dimension. The relation is strong and depending the circumstance and the analysis applied are easier to distinguish separately. According to Pediret “the conative dimension of an attitude reflects an individual’s evaluation of an attitude object that are based in past behaviours and future intentions to act” (Pediret, 2000:787). Studies related to resistance have focused on the response from workers and managers categorizing their intentional resistance as a kind of action or inaction, also referred as commission (defiance) or omission (Pediret, 2000:787).

Experiences from the emotional and intentional dimensions of resistance to change include as an example a case study on managers perspectives in other Asian countries. The study revealed that addressing issues of gender differences and not gender equality are difficult to overcome because they are engrained in the culture. The challenge is equally difficult for managers and workers. The emotional dimension of managers is to neglect the importance of women empowerment, thus to not take the topic serious. The emotional dimension of female workers implied acceptance to speak out. The strategies used to overcome that resistance from buyers imply strategies for risk management supply chain alongside scenario planning. The strategy was addressed as key to avoid loss of buyers by reputation loss (Welford, 2006:173).
Another example from the research conducted by Rossi (2013) showed that the emotional dimension of resistance to change has a connection to historical and cultural characteristics that bring different outcomes in the business management culture. For example in Fes, Morocco the division between managers and workers is really strong through class differences (Rossi, 2013:225). In Tangier, senior employees are concerned about switching from oral to writing contracts, as there is a fear of loosing their benefits gained along years by the introduction of new contract that they might not be able to read (Rossi, 2013:229).

### 2.1.5 COMMUNICATION

Information flow is an important element to effectively face alignment problems, although some organizations consider the exchange and publication of information as a loss of power (Croom et al.:73). The communication strategy of change is often dismissed because it is a source of indirect costs and a reason to redeploy key managers and staff on change projects (Cole, 2004:206).

#### 2.1.5.1 SHARED VISION

The internal and external communication strategy builds the organizational identity and a shared vision allowing an expansive learning capacity, which facilitates adaptability instead of constrains. The meaningfulness of change in the identity is a key role strategically and contextually (Easterby-Smith & Lyles, 2003: 624-625).

In the internal organizational change strategy a participative approach to create a shared vision includes a “.step-by-step approach, where companies should begin to adopt sustainability-oriented criteria in their decision making processes before integrating models and method for sustainability.” (Sissel et al., 2005 in DeBrito et al., 2008:538).

External communication strategy builds up shared visions through change and adds comparative advantages for capacity building and reduction of costs. Examples of shared vision and outcomes of dialogue can be seen in France through the creation of the French Institute for Textiles and Clothing (IFTH). IFTH served to develop new materials using nano technologies and weaving methods. The network fosters the development of partnerships in the sector developing competencies and know-how of workers and companies (De Brito, 2008:544).

Another example is the textile industry of France, which has seen economic and environmental benefits from combining efforts among factories in joining logistics transportation “…barge transport took about 3000 trucks out of the roads representing a reduction of CO2 emissions of about 130 tonnes and a cost reduction of 6% (De Brito, 2008: 545).

#### 2.1.5.2 BARGAINING POWER

In the global production network, it is argued that particularly in developing countries labour remains insecure and unprotected triggering the problem of worker betterment (Barrientos, et al. 2011:320). Since their adoption in 1998 the importance of ILOs workplace human rights through standards and company disclosure has increased considerably (Islam, 2011:791).

Communication as a good management strategy supports adaptability to change, guaranteeing the core elements of ILO and its Decent Work Agenda. The ILO criteria for decent work includes employment, social protection, workers rights and social dialogue (Barrietos et al, 2011:324; Selwyn, 2013:79; Rossi, 2013: 224).

An extended break down of what comprehends workplace human rights refers to: freedom, equity, security, human dignity, adequate wage, social coverage, benefits to dependant and communities, work standards (Barrietos, et al 2011:324; Selwyn, 2013:79) no discrimination, freedom of association, collective bargain, reduction in excessive working hours, and the possibility of moving to a better job as result of capacity building (Miller in Selwyn, 2013:86).
Labour can be seen as a productive factor or as a socially embedded one. The first view has its roots in conventional economic theory and is based on marginal productivity and labour costs. In the second view it is considered as socially embedded; workers are seen as agents or actors, focusing on human beings with capabilities and entitlements (Barrietos et al. 2011: 322).

An analysis of labor has two approaches, quantity and quality. Regarding quantity, the issue depends on the number of workers and the type of firm. The wages are affected by several factors such as the National Labour market and foreign buyers concerns over quality, time, price and delivery schedule. Regarding quality, the analysis is affected by national labour market; labour legislation; inspections and industrial relations; codes of conduct and private systems of monitoring and auditing (Barrietos et al., 2011:322; Rossi, 2013:227).

The economic performance of companies in the global economy does not necessarily translate into the compliance of workplace human rights standards, such as good working conditions, assurance of work rights, and the absence of force and child labor (Islam, 2011, pag.791). The underlying assumption that there is causality between companies profitability and social betterment derived from neoclassical economic theory is not borne out empirical observation (Bemhardt & Milberg, 2011 in Selwyn, 2013:79).

The betterment of workers is assumed as a trickle down effect on the labor force from profitability, although any real betterment of workers and its remuneration is argued as well as the assurance of their bargaining rights (Bemhardt & Milberg, 2011 in Selwyn, 2013:79).

### 2.2 MANAGING CHANGE & THE CHALLENGES OF CHANGE

#### 2.2.1 MANAGEMENT

In a world in which the ability to change is a key “engine of success” the shift from strategy into capability demands leadership, action planning, the ability to cope with pressure and uncertainty and a willingness to learn” (Carnal, 2006:44). Addressing the challenges of change effectively depends on the strategy towards change applied by the management of the organization. The pursued objective should be the ability to adapt to the pursued change. It is assumed that there are few organizations that within their structure have an in-built flexibility that enables them to adapt (Cole, 2004:205).

The development of management theories had a clear pragmatic beginning where guiding principles were developed based on previous experiences to guide management and continue its development by addressing issues from the human factor such as motivation, satisfaction and consequently commitment from the workforce. Nowadays, the importance of management strategies is placed on seeking efficiency and effectiveness while building a business culture, facilitating empowerment, managing change and reaching excellence (Cole, 2004:3-5).

A definition of management include:

> “Five areas of management constitute the essence of proactive performance in our chaotic world: (1) an obsession with responsiveness to customers, (2) constant innovation in all areas of the firm, (3) partnership – the whole participation of and gain sharing with all people connected with the organisation, (4) leadership that loves change (instead of fighting it) and instils and shares an inspiring vision, and (5) control by means of simple support systems aimed at measuring the “right stuff” for today’s environment.” T.Peters 1988, in Cole 2004: 6

Practical theorists (e.g. Kotler 2012) in the area of change management suggest guidelines for a successful implementation of change. These include the creation of momentum or sense of urgency; the creation of a guiding coalition, with key players “agents of change” alongside experts, people with power, credibility and with leadership skills; Constructing a shared vision; Communicating the Vision for Buy-in; Empowering Broad-Based Action; Generating Short-term wins; Consolidating gains to generate more change; - Long lasting results anchored to the business culture (Kottler, 2012). However, the results of his work might be considered a prescriptive set of recommendations for
reducing resistance and not really an explanation of the root cause of resistance in order to redesign change strategies (Armenakis, 1993:682).

Kotter (2012) suggests that management is often prone to fail achieving change. The reasons of failure include 1. lack of plan to guide the change, 2. failure to define a clear rationale for change 3. ignoring the culture 4. weak follow through by sponsors, 5. Not investing resources in the change effort. 6. gaps in change agent skills. 7. - gaps in change agent skills. 8. - fear of feedback 9.- Declaring success too early 10. - Neglecting to reinforce the change (Kottler, 2012).

There are 4 major processes that delay or prevent change: 1. Structural process (sluggishness of response); 2. Institutional processes (involving identity and the moral character of structural arrangements); 3. Political processes (interest and interest group politics) and 4. Learning processes (feedback) (Hannan, 2003:463).

2.2.2 THE LEARNING ORGANISATION

Senge (1999:3) emphasizes that the traditional approach to solve problems is to fragment them in a way that becomes manageable, however the price is high because the connection to a larger whole and the consequences of our actions gets lost. Therefore, the systems thinking approach provides in the so called learning organization, a holistic perspective to analyze and solve problems. It requires the understanding of the whole system where people interacts through the analysis of the system structure, function, processes and the possible consequences of our choices.

According to Senge (1990) the learning capacity of an organization enables it to reach its objectives, change and innovate. Moreover, the learning capacity held in this type of organization enables it to shift the view of work from an “instrumental view” to satisfy material affluence as an end to a more “sacred view” where the intrinsic benefits of work are the end. However, it remains a challenge for organizations to enable a truly vision led and foster learning capacity (Senge, 1990:5). Senge (1990), describes a learning organization as one that comprises in its structure five disciplines:

**Team Learning** is the highest quality of the organization since it will assure expanding capacity to create future improvements through adaptive and generative learning. This encompasses the feedback process where cause and effect and its consequent responsibility can reveal possible solutions for challenges in organizational change. It relies on dialogue (Senge, 1999:75-78).

**Building shared visions** helps to envision the path towards the future that an organization seeks to create (to hold the shared picture). Successful building of shared visions will result in an achievable agenda instead of “lovely pictures of the future” (Senge, 1990:12).

**Personal mastery** comprises the individual ability to reach the results that matters most to them. This is essential to foster commitment by worker towards the learning organization. The continual expansion of the learning capacity requires adaptive and generative learning (Senge, 1990:14)

**Mental models**: This refers to those rooted assumptions, generalizations and even pictures of actors within an organisation that influence the understanding of the world that could generate resistance to change. (Senge, 1999: 7-8)

**Systems Thinking** provides in the so called learning organization, a holistic perspective to analyze and solve problems. The systems thinking approach to address challenges keeping in mind the overall system and its complex dynamic to understand and foresee the responsibility derived of our actions. The approach requires a feedback process to understand the dynamics of the system (Senge, 1999:3-7).

Senge’s (1999) explains that a Learning Organization pursues a business model that seeks a strong structure based on collective efforts that push the organization to learning, training and development. The learning organization main characteristic is the importance of fostering creative
and constructive thinking from the team, where everyone in the organization is part of and committed to it (Cole, 2004:359).

Senge (1999:3) emphasizes that the traditional approach to solve problems is to fragment them in a way that becomes manageable, however the price is high because the connection to a larger whole and the consequences of our actions gets lost. Therefore, the systems thinking approach provides in the so called learning organization, a holistic perspective to analyze and solve problems. It requires the understanding of the whole system where people interacts through the analysis of the system structure, function, processes and the possible consequences of our choices.

Moreover, the learning capacity pursued in this type of organization aims to shift the view of work from an “instrumental view” to satisfy material affluence as an end to a more “sacred view” where the intrinsic benefits of work are the end. However, it remains a challenge for organizations to enable a truly vision led and foster learning capacity (Senge, 1990:5).

According to Senge (2003) a characteristic of systems is the interdependency between the internal and external factors. We all know the problems of the world and the need to change finding a solution. But finding tangible examples of change and the path towards success is difficult because it requires an understanding of the complexity of the system(s). It is a challenge for people to understand the ethical implications of the use of resources, of taking decisions and its consequences in the broadest terms. It is however required to create awareness therefore people are able to be compassionate in their decisions and actions.

Dr. Beth Sawin (2015) refers to a system as “A set of elements whose interconnections determine a behavior” The idea of a system is that the interaction of its parts, elements or stakeholders for instance creates certain interdependency between them.
3 METHODOLOGY

3.1 GENERAL METHODOLOGICAL APPROACH

Based on the literature review presented in section 2.1 for each category of organizational challenges key assumptions were defined. By studying the aforementioned companies, information relevant to respond these assumptions has been collected by interviews and document analysis as shown in table 2 below. Categories and sub categories are presented in figure X. The cited studies were used to define the assumptions.

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Assumption</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production Process</td>
<td>Technology dependency</td>
<td>Environmental innovations are challenged by technology availability.</td>
<td>Antanavičiūtė, 2015 DeBrito et al.,2008 Fletcher, 2010</td>
</tr>
<tr>
<td></td>
<td>Technology &amp; Product Features</td>
<td>The tension of the supplier firm between providing high quality and labor standard compliance together with low production costs, speed and flexibility hindrance change.</td>
<td>DeBrito et al., 2008 Gereffi, 1999 Seurign, 2008</td>
</tr>
<tr>
<td></td>
<td>Product Features</td>
<td>Soft environmental policies such certifications and labels are a constraint more than an advantage but are preferred because assure auditing process and flux of change.</td>
<td>Cole, 2004 Houe &amp; Grabot, 2009 Hamilton &amp; Zilberman, 2006</td>
</tr>
<tr>
<td>Markets</td>
<td>Role of Buyers</td>
<td>Changes in the production require the buyer support to determine the scope of change. Buyers have the power to determine the future of change.</td>
<td>Gibbon, 2001</td>
</tr>
<tr>
<td></td>
<td>Cost, investments, price</td>
<td>The high costs and investment related to change hinder the possibilities to change.</td>
<td>Ahamed, 2005 Bair &amp; Gerreffi 2001 Domina, 1997 Gibbon, 2011</td>
</tr>
<tr>
<td></td>
<td>Business Models</td>
<td>The selection of a business model that assures sustainability, profitability and betterment of workers is highly difficult.</td>
<td>Gereffi, 1999 Rehfeld, 2007</td>
</tr>
<tr>
<td>Category</td>
<td>Subcategory</td>
<td>Assumption</td>
<td>Sources</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Skills and</td>
<td>Jobs / Role</td>
<td>The challenge of further innovation and change is the lack of skills and capacity in the country as part of the role culture.</td>
<td>Bair &amp; Gereffi, 2001</td>
</tr>
<tr>
<td>Capacity</td>
<td>Culture</td>
<td></td>
<td>Gereffi, 1999</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Gibbon, 2001:347</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rehfeld, 2007</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sen, 2001</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Welford, 2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capacity Building is challenged by external factors such local and national conditions such infrastructure.</td>
<td>Maiese, 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Senge, 2013</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Colen et al, 2009</td>
</tr>
<tr>
<td>Mental</td>
<td>Cognitive</td>
<td>The challenge of transmitting the message of change towards sustainability is to allow knowledge transfer and understanding of the meaningfulness of the change. In the case of workers the challenge is to understand the need for change and their ability to generate the change.</td>
<td>Armenakis et al., 1993</td>
</tr>
<tr>
<td>Models</td>
<td></td>
<td></td>
<td>Rashid, 2009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resistance to change is the most difficult to overcome, when class relations are institutionalized in the management style (selwyn pag. 87) and the exploration of the right motivation is ignored ().</td>
<td>Pediret, 2000</td>
</tr>
<tr>
<td></td>
<td>Emotional &amp;</td>
<td></td>
<td>Sen, 2001</td>
</tr>
<tr>
<td></td>
<td>Intentional</td>
<td></td>
<td>Welford, 2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rossi, 2013</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The lack of a shared vision built with a degree of participation internally and externally hindrance the scope of changes.</td>
<td>Easterby-Smith &amp; Lyles, 2003</td>
</tr>
<tr>
<td></td>
<td>Shared Vision</td>
<td></td>
<td>De Brito, 2008</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sissel et al., 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Workers betterment from changes is challenged by the lack of recognition of workplace human rights.</td>
<td>Barrientos, et al, 2011</td>
</tr>
<tr>
<td></td>
<td>Bargaining Power</td>
<td></td>
<td>Selwyn, 2013</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The only sustainable competitive advantage of an organization is a business model based on its ability to learn fast in all levels of the organization.</td>
<td>Islam, 2011</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td></td>
<td>Senge, 1999</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Carnal, 2006</td>
</tr>
</tbody>
</table>

Table 2: Summary of categories, assumptions and literature sources proving evidence
3.2 THE GARMENT INDUSTRY IN BANGLADESH

The selection of Bangladesh as a host country for this research was on the basis that is the second biggest producer of garments in the world, hosting nearly 5000 factories. Bangladesh reached this position through the process of globalization, which led to important geographical shifts in the production and trade of labor intensive commodities. Mainly from 1950’s the first shift occurred from North America and Western Europe to Japan. Then in the early 1970’s the industry moved from Japan to the Newly Industrializing Economies (NIEs), namely South Korea, Taiwan, Hong Kong and Singapore. In the 1980’s it went to developing countries such as China, South East Asia and Sri Lanka. Finally production moved in the 1990’s to South Asia and Latin America (Gereffi, 1999:48).

The increasing wages in developed countries facilitated the shift of production to low wage countries. Nonetheless, this is not the only, nor the main reason, particularly from 1980’s the reasons included: currency revaluation, tariffs, trade quotas and preferential access to overseas providers (Gereffi, 1999:48).

The process took place by "Triangle Manufacturing" which allowed the expansion of geographical trade ties between countries and firms allowing a diverse source of trade quotas, for example from 50 – 60 exporting countries to a single firms buyer or retailer in the United States (Gereffi, 1994 in Gereffi, 1999:60). More important was the change of production that occurred trough technology transfer lead by brands such Liz Claiborne.

Some policies that emerged to protect the markets of developed countries served as catalyst for the increased role of developing countries in the global production network. For instance, the Multi Fiber Agreement enabled the garment industry in Bangladesh to turn to export oriented production(Gereffi, 1999:51). The availability of jobs in the sector has increased even more after the derogation of the Multi Fiber Agreement in 2005, when the export market increased drastically (Bakht et al. 2009:341; Ahamed, 2005:52).

It is evident that the shifts on production to developing countries brought benefits to a large female force and migrants who could access to job opportunities (Barrietos et al. 2011:319). The garment industry is the main provider of work for low skilled and unskilled female workers in Bangladesh and accounts for more than three thirds (75%) of its export market (Bakht, et al.2009:341; Mottaleb, 2011:67). Among other economic activities, even when the income received by the workers in 2001 was less than the $1/day dollar, it provided the highest opportunity of wage compared to other sectors (Bakht et al., 2009: 344).

It is highly argued that the shifts on garment manufacture to developing countries allowed poor conditions by keeping investment prices low, where firms operate and profit but avoid responsibility (Islam, 2011:192). Nonetheless, there is awareness of the responsibility that nowadays corporations have at each stage of the commodity supply chain (Caniato et al. 2012: 659). Organizations are encouraged to improve their standards, corporate behaviour and engage in technology innovations.

An approach taken in many countries including Bangladesh is to set-up of a legal minimum wage. However, international actors such as the “Clean Cloth Campaign” state that those minimum wages are not necessarily enough to cover a living wage per week. Further action trough international dialogue is taken through the Living Wage Forum, which has a web portal encouraging the discussion. The organization of events and information dissemination are among the tools used to invite brands, retailers, producers and civil society. The aim is to raise awareness in buyers and consumers of the need to change the “living wage defect”. This efforts aim to change the wages in countries like Cambodia, Philipines, Sri-Lanka, India and Bangladesh among others and in support of the Asia Floor Wage Alliance. (www.cleathclothes.org; http://www.livingwagenow.eu/)

According to NGO’s reports such as Human Rights Watch and Global Labour Rights Organization, a main challenge to assure worker’s rights in Bangladesh is the allowance of collective rights. Even though, Bangladesh has ratified international conventions in the labour area, mainly the Conventions
87 and 98 where freedom of association and collective bargaining is at the core (HRW, 2014). The garment industry is characterized by a lack of bargaining power allowed to workers. It is stated in the reports that among the 5000 average garment factories in Bangladesh, which accounts for nearly 4’000.000 workers, only 215 (4.3%) are registered with trade Unions in the Bangladeshi Ministry of Labour (HRW, 2015; Globallabourrights.org, 2015). These circumstances of human rights advocates implies a hindrance to allow good working and living conditions.

The Bangladesh Labor Act (2006, amended 2013) outlaws numerous “unfair labor practices.” For example, no employer shall, “dismiss, discharge, remove from employment, or threaten to dismiss, discharge, or remove from employment a worker, or injure or threaten to injure him in respect of his employment by reason that the worker is or proposes to become, or seeks to persuade any other person to become, a member or officer of a trade union.” (Bangladesh Labor Law, 2006:89)

Moreover, Bangladesh has brought the attention of international organizations and movements after a third major catastrophe happened in the garment sector, the collapse of the Rana Plaza building in 2013. This catastrophic event, alongside with the Spectrum Factory Collapse in 2005 and Tazreen fire in 2012 evidenced the lack of compliance on industrial safety measures and labor standards after its collapsed accounted more than thousand human lives (globallabourrights.org, 2013; Perry et al. 2014:1).

A response from the national government was to strength the corporate responsibility through the regulatory development of the Corporate Governance Order of 2006 (SOBHANI et al. 2009; HRW, 2014). In the international arena, the organizations ACCORD and ALLIANCE are requiring from the sector changes in the building safety in order to allow free trade quotas for the sector.

At the end of 2014, in an attempt to bring an answer to citizen concerns and expectations, particularly following the collapse of the Rana Plaza factory building, the European Commission announced the preparation of what should be an EU Flagship initiative for a responsible management of the garment supply chain, led by the Directorate General Development and Cooperation (DEVCO). This initiative would touch upon several aspects of sustainable development, among them safety at work, living wages and collective rights, as well as sustainable competitiveness of the EU companies involved in the garment supply chains. In 2015, the Commission consulted representatives of industry, trade unions, retailers and workers rights organisations. (Living wages, 2014)

From the private sector, corporations are exploring changes in the production of garments to provide alternatives to the fast fashion production of clothes, which is the main mode of production that the global consumption relies on.

3.3 THE CASE STUDIES

In order to select the case studies object of research it was necessary to create a criteria based on theoretically useful cases instead of using a random sampling technique. Therefore, the companies selected must comply with a combination of two criteria: 1.- On one hand, to have implemented an organizational change related to either “greening the supply production” or a “product based green supply”. 2.- On the other hand, the contrast of reactive and proactive changes are required.

The selected business models seek for change towards a more sustainable production and are allocated in Dhaka, the main industrial hub of Bangladesh. Therefore, I selected six factories divided in the following categories as shown in table 3:
CATEGORIES

<table>
<thead>
<tr>
<th>Case Study identification</th>
<th>Strategy for Sustainable Production</th>
<th>Change/Innovation</th>
<th>Type of change</th>
<th>Organizations</th>
</tr>
</thead>
</table>
| Case study 1             | Product Based Green Supply            | Upcycling & Natural Dying | Proactive change | BEXIMCO  
TRIPTY  
ARANYA |
| Case study 2             | Greening the supply chain             | ACCORD Fire and Safety Standards | Reactive change | Continental Garments Ind. (Pvt.) Ltd  
Knittex Industries Ltd.  
New Line Clothing Ltd. |

Table 3 Insert description: Summary of categories of analysis of selected case studies

Description of selected companies Case Study 1:
The size of the company is accessory to provide a better description of different circumstances and production size (table 4) for case study 1 and case study 2). This demonstrates the different operational scales of the researched organisations.

<table>
<thead>
<tr>
<th>ORGANIZATION</th>
<th>AVERAGE MONTHLY CAPACITY</th>
<th>REAL CAPACITY AT THE MOMENT</th>
<th>APPROXIMATE COST OF PRODUCTION PER ITEM</th>
<th>APPROXIMATE N° workers</th>
<th>APPROXIMATE COST OF LABOUR AT REAL CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEXIMCO</td>
<td>2 million pcs per factory</td>
<td>2 million pcs</td>
<td>$2 - $4.95</td>
<td>7800</td>
<td>65.88€ (helper) – 129.41€ stitcher</td>
</tr>
<tr>
<td>Upcycling in BEXIMCO</td>
<td>20,000 pcs</td>
<td>5000 pcs</td>
<td>15€ - 70€</td>
<td>120 – 150</td>
<td></td>
</tr>
<tr>
<td>Aranya</td>
<td>100 pcs</td>
<td>100 pcs</td>
<td>10€ -200€</td>
<td>40</td>
<td>129.41€ - 152.94€</td>
</tr>
<tr>
<td>Triptý (CDP + PDAP)</td>
<td>+ 100</td>
<td>25</td>
<td>35€</td>
<td>40</td>
<td>58.82€</td>
</tr>
</tbody>
</table>

Table 4: Production size for the selected companies of case study 1

Description of selected companies Case Study 2:

<table>
<thead>
<tr>
<th>ORGANIZATION</th>
<th>AVERAGE MONTHLY CAPACITY</th>
<th>MAIN BUYERS</th>
<th>APPROXIMATE COST OF PRODUCTION PER ITEM</th>
<th>APPROXIMATE N° workers</th>
<th>APPROXIMATE COST OF LABOUR AT REAL CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continental Garments Ltd.</td>
<td>1 million pcs</td>
<td>PVH (Phillips-Van Heusen) – Tommy Hilfiger, Calvin Klein</td>
<td>$4 - $8</td>
<td>2100</td>
<td>65.88€ (helper) 129.41€ stitcher</td>
</tr>
<tr>
<td>Knittex Industries Ltd.</td>
<td>540,000 pcs</td>
<td>Forever 21; New Look; Primark; Penneys, Deichmann; Decathlon</td>
<td>1.5€ - 6€</td>
<td>1600</td>
<td></td>
</tr>
</tbody>
</table>
| New Line Clothing Ltd.  | 540,000 pcs            | ALDI 60%  
C&A 25%  
Primark 15% | 1€ -5€                                 | 1850                   | 129.41€ 152.94€        |

Table 5 Production size for the selected companies of case study 1
3.4 FIELD RESEARCH
The field research took place in Dhaka, Bangladesh from mid-august to the end of October. Formerly the planned time for the data collection was 5 weeks. Due to a couple incidents and unexpected holidays inside the country normal activities were disrupted causing delay or reschedule of interviews, Moreover the new environmental conditions also slightly affected the health condition of the researcher delaying the process a couple days. Overall, the field work required 3 more weeks than expected (end of October).

<table>
<thead>
<tr>
<th>Organization</th>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEXIMCO</td>
<td>Hakeemullah Khan</td>
<td>Deputy General Manager, Merchandising Garments Marketing</td>
</tr>
<tr>
<td></td>
<td>Khalid Shaurior</td>
<td>General Manager, Human Resources &amp; Compliance</td>
</tr>
<tr>
<td></td>
<td>Major ABM Sakir Hairder</td>
<td>General Manager, Head of Stores &amp; Warehouse</td>
</tr>
<tr>
<td></td>
<td>Khalid Khan</td>
<td>Former-Sustainability Director</td>
</tr>
<tr>
<td></td>
<td>Olee &amp; Azam</td>
<td>Worker and Line Supervisor</td>
</tr>
<tr>
<td></td>
<td>Mostaque &amp; Manirul Islam Firoz</td>
<td>Deputy and Managing Director at IMI ASSOCIATES LIMITED External company providing consulting services for BEXIMCO</td>
</tr>
<tr>
<td>TRIPTY</td>
<td>Luke Swanson</td>
<td>Manager of the brand (buyer role), designer</td>
</tr>
<tr>
<td></td>
<td>Tripty &amp; John Biswas</td>
<td>Executive Director of Centre for Development &amp; Peace (supplier/manufacturer)</td>
</tr>
<tr>
<td></td>
<td>Quazi Baby</td>
<td>Executive Director of Participatory Development Action Program</td>
</tr>
<tr>
<td>ARANYA Crafts Ltd.</td>
<td>Ruby Ghuznavi</td>
<td>Executive Chairman and honorary member of WCC-Asia Pacific Region</td>
</tr>
<tr>
<td></td>
<td>Nawshin Khair</td>
<td>Production Manager at Aranya, National Representative of Fashion Revolution and Director of Bengal Art Lounge</td>
</tr>
<tr>
<td>Continental</td>
<td>Md. Muneer Hussain</td>
<td>Owner and Manager Director</td>
</tr>
<tr>
<td>Garments Ind (Pvt.) Ltd.</td>
<td>Prahlad Passi</td>
<td>General Manager, Operations</td>
</tr>
<tr>
<td>Knittex New Line Clothing Ltd.</td>
<td>Ehsanul Haq</td>
<td>Junior Director (son of the owner)</td>
</tr>
<tr>
<td></td>
<td>Md. Al Min Aka. Sohel</td>
<td>Country Manager of WILSON Imports Ltd – product design and development “middle men”</td>
</tr>
<tr>
<td></td>
<td>Suman Ghose</td>
<td>Director Operations</td>
</tr>
<tr>
<td></td>
<td>IKM Rafiqul Islam</td>
<td>General Manager, Head of Production</td>
</tr>
<tr>
<td></td>
<td>Hasan Hafizur Rahman</td>
<td>AGM (HR &amp; Compliance)</td>
</tr>
<tr>
<td></td>
<td>Mahbubur Rahman</td>
<td>Compliance Executive of Zandrotex Fashion (BD) Limited, G. Gülkenpfennig</td>
</tr>
</tbody>
</table>

Table 6: Interview partners and their position in the researched organisations

3.4.1 DATA COLLECTION
Once revised the literature referring to sustainability in supply management, organizational change management and learning organization it became evident that empirical case studies in the garment industry in developing countries are missing.

To accomplish the purpose of this research and the time availability, a qualitative case study research design suited the best. As described the cases study designs by YIN, the case study approach was taken to explore the existence of the problem, thus, to fulfill the objectives of this research providing an in-depth description of the perceived challenges at the organizational level and the perceived challenges in the wider system the industrial the industrial sector (Eisenhardt, 1989:532)
The collection of data addressed theoretical and empirical literature review, semi-expert interviews and observations. The tools used were content analysis in order to explore the meaning of the interviews and the literature (Besio & Pronzini, 2011:6).

3.4.1.1 LITERATURE REVIEW:
As stated by Fink “a literature review is a systematic, explicit and reproducible design for identifying, evaluating and reproducible design for identifying, evaluating, and interpreting the existing body of recorded documents” (Fink in Seuring, 2008:1700).

Consequently based on the broad results of the literature review conducted by Seuring Key words were the first step for identifying and guide the process. The most common words used were (supply chain; green products; ecological; environmental policy instruments; industrial and social upgrading; fast fashion and slow fashion) and combined with management literature (organizational change; environmental innovations; resistance to change; organizational learning and learning organizations).

The literature review addressed theoretical and empirical studies. Although the empirical studies were scarce. Thus, complementary review of primary and secondary sources such as empirical studies from journals, think thanks, management consulting firms and companies official web site or resources. This was an ongoing process required to complement and unfold relevant aspects that required contextualization, conceptualization or description of the overall industry and pressing issues. Finally, from the literature review a formulation of categories of analysis was created to provide a guide for content analysis and be able to classify the revised literature.

3.4.1.2 SEMI-STRUCTURED INTERVIEWS
The categories of analysis were key to guide the collection of data using semi-expert interviews. The conduction of interviews provided a space to obtain firsthand information from managers. The decision making process and implementation strategy of organizational change is not easily observed due to the time frame of its occurrence. However, semi-expert interviews allowed the exchange of perspectives in a flexible, open and dynamic dialogue (Creswell). In this sense even when defined categories of analysis and starting questions were beforehand prepared, the conversation flow allowed to identify what questions make and how to make them. In that context, every interview even when following a criteria of categories for ulterior analysis or for data collection, touched upon other areas showing the interconnection of results and the dynamics of the system. This allowed to obtain a broad picture. In order to analyse the perspectives of managers, a content analysis and conversation analysis guided as tools (Besio & Pronzini, 2011:6).

Moreover, at the beginning of the research it was not clear how many interviews shall be conducted per organization. The final decision of the sample and the duration of each interview was decided during the data collection. A consideration to take into account was how knowledgeable and open were each interviewee. Another was the quality of data would provide. If answers were repetitive or too short, it was considered a sign to finalize it. Finally, in the case of been able to interview workers under the supervision of managers might have biased the quality of results. Therefore, the opinion of representatives of a Trade Union also president of AWAJ Foundation and of a representative of the Fashion Revolution movement is important.

The theoretical categorization of case studies was complemented by a natural snowball technique where more interviewees were invited to participate even when they were not formally part of the organization but important knowledge about the process of change.

3.4.2 DATA ANALYSIS
Furthermore the analytical categories obtained from literature (see chapter 2.1) served besides collecting data, to present results and to confront those with the existing literature. A two level analysis is intended of insights from within the firms and across the sector.

The triangular process of data allowed to compare the interview answers with secondary sources of data (documents) and observations of the environment surrounding the organizations. First the
described categories of challenges were identified and respectively an assumption was formulated based on literature (see table 2). Second the characteristics of categories of challenges were

The exploration of challenges were realized different for case study 1 and case study 2. on two levels within the organization and across the sector for the companies in the case study 1. In the case study 2 the exploration was done across sector due to the similarities in response, size and characteristics of the organizations and the pursued change. The description of the perceived challenge and its scope was done on the basis of the content from the interviews. The aim was to identify evidences proving the existence of a challenge.

The second dimension of analysis was analysing which characteristics of the learning organization each organization has and if contributed to address and overcome challenges of change. The categories of analysis are analyzed under the premises of the learning organization. Therefore for each category of analysis correspond the understanding of the features of the learning organization.

- Production Process → Team Learning
- Markets → Systems thinking
- Skills and Capacity → Personal Mastery
- Mental Models → Mental Models
- Communication → Building Shared Visions

Overall the criteria that guided the analysis and construction of the challenges categories and the further analysis of the organizational characteristics that improve response to challenges was a main combination of the fifth disciplines of the Learning organization (Peter Senge), the features of the organization (Cole, 2004) and a set of criteria of challenges of organizational changes focusing on people, money and the environment. To assure validity and reliability, records of emails, transcription of interviews, presentation cards of interviewees and photography’s were taken and will be added as an Annex using .docx and jpg. Files.
4 RESULTS CASE STUDY 1 – PRODUCT BASE SUPPLY - PROACTIVE CHANGES

In the following chapter a detailed description is given for each company (see table 3, chapter 3.3) and the degree to which they corresponded to the assumptions outlined in table 2 based on the categories defined in chapter 2.1.

4.1 PRODUCTION PROCESS

4.1.1 TECHNOLOGY

Assumption: “environmental innovations are challenged by technology availability.”

4.1.1.1 BEXIMCO

The raw material is the industrial waste and the pre-consumer waste. The implementation of upcycling at BEXIMCO did not require a change in technology regarding machinery but new know-how. The reason is that the main tasks in the upcycle technique are stitching and cutting. The difference in the upcycling technique is that cutting the maker pattern is done with scissors. The use of certain fabrics might require only small adjustments such (e.g. a change of needle in the sewing machine). An evident advantage of this mode of production is the reduction in the use of energy.

The production logic implemented is different as can be seen in picture 3 and unique for each model. The traditional way of producing a t-shirt requires the stitching of 8 makers which include front, back, 2 sides per shoulder, neck and bottoms. Picture 3 shows that in an upcycle model the maker pattern can include easily more than 30 makers. The know-how of the technique was implemented with a PHD fashion student, Reet Aus, realizing an internship in the company.

![Figure 5: Maker pattern for upcycling by Reet Aus (2011)](image)

The most pressing challenge is to keep innovating the design. The creative idea of the clothes has to be really dynamic to appeal consumers.

4.1.1.2 TRIPTY

Tripty uses two upcycle techniques. The repurpose of organic waste such pineapple into fibers which was not available in the communities they work with. The Tripty Project designers provided training...
for the repurpose of pineapple into fibers. The upcycle of old saaris did not require much effort or
time since upcycling of Kanthas is already a cultural practice in Bangladesh, thus the logic was
reproduced.

There is no need of technology referred to machinery because the products are hand-made by
artisans: The weaving process is mainly through backstrap and hand loom. The backstrap allows
movability and working during spare time, while the hand loom is not mobile. This requires a unique
set of skills to acquire the rhythm of weaving textile. The spinning process can be through drop spindle
or a spinning wheel, so only simple techniques are used.

However, the designers and transmitters of know-how are US designers. The technology the
designers require from communities and suppliers is the use of phone and online communication
(skype, pictures and email) which are expected anyways. Constrains from energy supply have been
solved even in communities without electricity (solar phone chargers).

The use of natural dying and repurposing of things has had problems. Workers had already forgot
how to do natural dying, thus training was provided. The natural dying from environmental friendly
seeds, plants, nuts, or other natural resorcesis difficult to upscale. There are experts who have
figured out how to do it, but most of the time it is not the cleanest mechanism either.

4.1.1.3 ARANYA
In the case of Aranya there is no need of technology besides the know-how of dying at a small scale.
The techniques of natural dying is their strength. In the production process they can reach 30
different colors based on organic sources such as flowers, leaves, fruits, peels and sawdust combining
them with mordants. Some of the techniques are block printing; tie-dye; folding and shading.

Aranya is one of the only ones using natural dying at this scale. Aranya claims to believe in their
human capital, their designers are Bangladeshi nationals, which have the support of the firm to try
and experiment new things.

4.1.1.4 ACROSS SECTOR
The techniques are getting lost with the automatization of production. Even in the villages is hard to
find communities still working the different techniques. Exhaustive training is required to
develop certain techniques. The perspectives of child labor hindrance the knowledge transfer from mother to
son during childhood and teenage.

4.1.2 TECHNOLOGY AND PRODUCT FEATURES.
Assumption “The tension of the supplier firm between providing high quality and labor standard
compliance together with low production costs, speed and flexibility hindrance change.”

4.1.2.1 BEXIMCO
In the up-cycling of product quality issues arise from waste mapping. The quality of the yarn or pre-
consumer waste is not an issue if the main production uses high quality or organic materials, thus the
waste will have the same quality. In the case of cut pieces the problem arises from impurities and
time consuming selection of the most suitable cut pieces for production. The finishing cannot be
perfect as a new brand shirt and that is a challenge from consumer preferences. The handling of the
waste, fabric characteristics and stitches required is too complex to avoid imperfections.

The labor standards, as well as other certifications schemes were not a problem since the
organization already has every permission in place. The upcycling of products does not have a lower
cost of production than fast fashion. There is possibility to keep it the same cost of production but
requires a shift favoring labor. The line of production does not perform in a mechanized way but will
require more time to produce one garment and the quantity of production will remain less.

In the production process the speed of production is the efficiency of the production, which depends
on the time required to sew each piece of garment. The estimated time required for a basic T-shirt in
a mass production is 1.3 seconds, for a long sleeves shirt is 3 second and is required minimum 10 - 14 people distributed in a line of production.

The sewing in up-cycling requires most of the time a whole new movement each time. It requires thinking because the difficulty to have exact patterns as in the conventional way is too difficult. There is not “one pattern” to follow but instead use of creativity to reach the final garment assembling a sort of puzzle. This was a reported as a problem by the middle management, since they did not perceive find workers capable of performing these steps.

The lead time (time to produce and to be able to send the product) and flexibility of the production is not a problem in the factory since all supplies are in-house. The lead time even can be reduced to only 30 to 40 days, since the raw material (waste of previous products) is already in place,. This is an advantage compared to the conventional production where the normal lead time is 90 to 120 days.

Flexibility is a challenge for the production. For example, in a normal production there is a ratio of 5 – 6 colors, while the upcycle can include up to 18 colors combinations. The design in terms of creative idea is a big challenge because requires to be highly dynamic and the production team must be ready to adapt and readapt to each circumstance depending on the design. That from the side of the workers was really difficult to understand. They are used to one way of manufacturing clothes, which is extremely repetitive.

4.1.2.2 TRIPTY

The lead time (speed) and flexibility in the business model applied is different. Special attention is required in the dying process and overall of all the production process, although this is poorly understood by the workers. The approach is holistic; therefore the organization only works with fabrics that matches their environmental and social concerns. Production speed is of less concern.

The quality is a challenge, which became clear for cleaning standards. An example is in the production of natural dyed products, which can easily get stained. The designers faced challenges trying to explain workers that a dirty product is not worthy. The project had to return shipments and not pay for them to show that the issue is serious. There are always other minor defects in the finishing quality which require acceptance from the consumer and those are overcome by consumer’s preference on the business model.

Women mainly work on a house-hold based level, thus, there are no labor standards required from or provide to them. This is justified by the management approach which is highly participative and human oriented. The small factories are not required to get certification but all facilities are known by the project.

4.1.2.3 ARANYA

The quality of the products can be higher regarding the durability of the fabrics. High quality is not a problem for consumers looking sustainability from this brand. The distinction between an industrial and a hand-made product strives in the finishing. When using natural dyes the shades of color will appear. It is not possible to have two products with the same exact color. The size of products are not totally standardized, a centimeter deviation is within the margin.

Regarding lead time and flexibility, the production of some fabrics is extremely time intensivethat (e.g. kantha sareewith 3.4 inches per day). Therefore the production process of 1 item can take up to 3 or 4 months. It requires a single women work to keep the quality of work not disrupted. Aranya has 40 workers in house but to allow flexibility on production works with small communities manufacturing other products. The lead time in-house and the maximum capacity is 100 items per month. The design of new products occur every 3 months and increases for new year (April) and Eid celebrations.

4.1.2.4 ACROSS THE SECTOR
Finishing quality from hand-made products is hardly understood. Consumers rarely have knowledge regarding how to take care of hand-made products (which detergents use, temperatures to wash, etc); the effort involved and the benefits of the production. That builds a misperception regarding quality of products. Moreover there is over-expectation from the finishing quality – desiring items tied to the shape or stretchable.

4.1.3  PRODUCT FEATURES
Assumption “Soft environmental policies such certifications and labels are a constraint more than an advantage but are preferred because assure auditing process and flux of change”.

4.1.3.1 BEXIMCO
Beximco has most certifications and labels required in the international market to boost competitiveness (ISO14001 & GOTS); ILO standards, local law, and brand codes of conduct. Any new coming label or certification is obtained as part of the daily business. In order to be able to access the European market with the upcycle production a new certification was required “Up-Made”, which was not available in the country and only issued in Finland.

The certification represented a high cost of hiring an international company and all the related costs of the audits involved. Moreover, product of the auditing process a reorganization of tasks in the organization structure took place as seen in graphXX. BEXIMCO claims to be the only industrial facility in Bangladesh issued by the Up-Made certification.

BEXIMCO required to map the waste produced in all the facilities, then it was required to separate and select the waste depending on certain characteristics such as which fabrics, colors, shapes, sizes might be useful to fulfill the design however, it proofed to have gains.

4.1.3.2 TRIPTY
The organization is not using any certification, because they believe certified fair trade is already distrusting. People do not react to checking boxes as they do not react well when you speak up the social problems in Bangladesh. Consumers prefer to feel happy when they buy, so the environmental concept gives them that. They feel great when they know they are buying something new that contributes to the environment. The Tripty Project assures that their concept is based on information and transparency using social media (incl. videos) as a source. They provide as much information as they can to their customers so they feel ownership. The targeted consumers are still reacting good, they are accepting the concept and they like that is not branded as “fair trade”.

4.1.3.3 ARANYA
Aranya has the challenge of entry the European market. The entrance to the EU market is particularly complex due to sourcing supplies. The requirement of certified supplies such organic cotton (preference of European buyers) is a challenge related to the scale of production and the high cost to certify the supply or source it. The organization has to rely on networking to obtain it at a reasonable price.

4.1.3.4 ACROSS THE SECTOR
Traceability of raw materials is a problem even when using certifications. Moreover, the organic production of cotton, which is the most preferred fabric, is not enough globally to satisfy the rate of consumption.

Certifications and labels are required as a must from suppliers to enable trade, however, buyers do not consider the increase cost on production that this requirement imply. Buyers keep boosting competition between suppliers squeezing the costs of production. Suppliers make efforts to comply with the requirements of external buyers such effluent control plants to treat chemicals, however the running cost of the effluent plant is higher than the cost of construction. There are doubts regarding if suppliers run daily the effluent plants or occasionally to comply with the audits and monitoring.
4.2 MARKETS

4.2.1 ROLE OF BUYERS
Assumption: “Changes in the production require the buyer support to determine the scope of change. Buyers have the power to determine the future of change.”

4.2.1.1 BEXIMCO
BEXIMCO undertook the up-cycle technique by their own initiative in cooperation with the Estonian designer Reet Aus. Together with the up-cycle project created a brand – called AUS (SEE BRAND: http://www.reetaus.com/) (http://upcycling-fashion.com/category/pre-consumer-waste/).

BEXIMCO is offering a “new branded product” which requires the consumer response of a broad audience, thus marketing support. The role of buyers to accomplish a zero facility is determinant, the up-cycle products can be accepted by the loyalty to a well-known brand.

The engagement to support the product required is from both. Even when the finishing of the product is not the same, trough building awareness in consumers of big buyers the acceptance to shift the production costs to the workers will be possible. The willingness of consumers to pay a premium price is possible as a result of loyalty and awareness.

4.2.1.2 TRIPTY
Tripty project is a start-up business initiative already in place 2 years. The brand is growing but is power of action is limited still. All organizations cooperating are dependent on the types of changes in the American market and the sizes of it, where the organisation mainly operates.

The partner organisations PADP and CDP, they rely on the business growth of Tripty to have a real impact in the communities. The indirect beneficiary’s average sums up 240 people mainly women. The problem perceived is that when women finished the orders, they have nothing else to do. The orders are not stable because the Tripty Project is in the initial phase. Far enough they have gained in human capital through the skills and training developed in cooperation with Tripty, which allowed women an economic opportunity.

4.2.1.3 ARANYA
Aranya obtained help from “Bangla foundation”, an organization with which shares common goals, vision and mission. Bangla Foundation contributed to expand production and opening and improvement of another showrooms in Dhaka. Otherwise Aranya did not have the capacity to expand the production towards including communities from rural areas nor the opening of showrooms or getting a fair trade certification.

4.2.1.4 ACROSS THE SECTOR
The number of manufacturers serving high value brands (using high quality supplies) is growing small, to the fast fashion brands using low quality product. Therefore, the challenge in the sector is much more complex because will require brands improving the quality of raw materials to have high quality upcycle products.

International organizations such as UNDP which funded a backstrap loop. The encouragement of traditional knowledge was encouraged with other 10 countries. The beneficiaries were women from rural communities. Recently there was a program where was rescued from dying out, the activities involved 10 other countries of the region.

4.2.2 HIGH COSTS & INVESTMENTS
Assumption: “The high costs and investment related to change hindrance the possibilities to change”.

4.2.2.1 BEXIMCO
The investment required was the related to research and development of the product, extra trainings, and costs of getting the certification “UP-Made”, which was higher than other labels.
because it is only available in Finland (see section 4.1.2.5). The organization did not perceive this as a challenge because the cost was anticipated in advance. There are not big changes required in the production costs. The production costs shifted from material (usually the higher cost of production) to labour.

4.2.2.2 TRIPTY
Tripty relies on pre-sales on internet using facebook, a website and a crow-funding platform kickstarter (see https://www.kickstarter.com/projects/triptyproject/tripty-project-ethically-made-in-bangladesh).

Tripty Project does not own any facility and do not require from their sources to have any certification, but they know already with who are they working with. The amount of production requires different means of transportation (air), therefore is one of the highest costs of production.

PDAP and CDP do have constrains in investments if they decide to operate in a factory level, since workers operate on a household level. Loans from financial institutions have a rate of interest between 11- 14% and even when Small and Medium organizations can access loans for women development or empowerment the amount is not enough. The requirements are too difficult and time consuming. Moreover the expertise to access an international audience is not available in-house.

4.2.2.3 ARANYA
The investments required to expand the business were not possible with the in-house capacity. The Bengal Foundation took over the brand and the production doubled. The Foundation invested on a second showroom was in Dhaka.

Hand-loom products of high quality require higher costs of production on labour due to the lead time. The price of the end product can be marginally different from the synthetic counterpart but the costs of marketing and branding on an export market are not bearable for the scale of production. In order to access export buyers the transportation cost is the highest (air), reaching a third of the cost of production of an item.

4.2.2.4 ACROSS THE SECTOR
There are credits in place for Small and Medium organizations encouraged by the government. The target group is women entrepreneurs, although men also have access. In the case of Banks, the requirements for women applying for loans are difficult to fulfill. For instance for a loan of half million tks. an economical guarantee of a million is required. This is a requirement for women in business not for men. The interest rate for SMEs is generally low, however the challenges to access and survive in the market are bigger.

4.2.3 BUSINESS MODEL
Assumption: “The selection of a business model that assures sustainability, profitability and betterment of workers is highly difficult.”

4.2.3.1 BEXIMCO
Even though the product addressed the dimension of environmental sustainability and BEXIMCO addresses the social dimension standards the profitability of the upcycle initiative is still questioned. The acceptance of the product by the final consumer will define the success of the business model.

The business model that BEXIMCO aimed to comprise a higher labour cost of production to assure a higher payment to the workers involved. The business model that BEXIMCO wants to reach is a zero waste facility and be branded a progressive facility with high environmental standards, CSR and good working conditions. In this regard they saw benefit in being included in the sustainability report of WWF.

4.2.3.2 TRIPTY
The business model of Tripty is based on “Ethically made products in Bangladesh”. The aim of the Tripty Project is to provide positive options and alternatives to fast fashion, being example of a brand doing something else, something new and good.

The orders are made based on pre-sales online. The business model reaches the consumers through information and transparency by different mass media means explaining by whom; where and how items are produced. The information helps to boost the feeling of ownership in consumers. Further the decisions are taken in a participative way in the management team and with workers.

Other features of the business model is the special attention to include trainings, the selection of partners requiring opportunities to women in vulnerable situation and planning future investments of profits to generate capacities.

4.2.3.3 ARANYA
Aranya business model is based on being a fair trade organization, environmentally friendly and highly participative with their workers. They focus on rescuing traditional environmentally friendly techniques and provide support to initiatives in-house. They invest effort to strength dialogue among similar organizations and with civil society to improve living conditions in Dhaka. Aranya actively participate and encourage the involvement in international fairs and meetings with other craft organizations. The marginal profit might be less but the livelihood improvement compensates the effort. The business model involves less profit due to the increase of labour costs, however is part of the mission and vision of the organization.

4.2.3.4 ACROSS THE SECTOR
Difficult to obtain a business model encompassing sustainability due to the dependency of an export oriented business model based on profitability at the lowest production cost.

4.3 SKILLS & CAPACITY
4.3.1 JOB/ROLE CULTURE
Assumption: “The challenge of further innovation and change is the lack of skills and capacity in the country as part of the role culture.”

4.3.1.1 BEXIMCO
Human resources are an important factor for BEXIMCO therefore recruitment is always encouraged trough bringing professionals from all parts of the world. The synergies between colleagues can improve the company performance. There are people recruited from Sri Lanka, India, Pakistan, Europe, who enriches the work executed at BEXIMCO. This professionals are mainly from management areas and design.

4.3.1.2 TRIPTY
CDP and PADP rely on the designs of Tripty Project. The managers of the organizations are the only ones with high education but not related to design. Based on the trainings the workers get from external designers they are encouraged to experiment with their own designs but their skills are not sufficient to satisfied an export market by their own. Fort the same reason the efforts to establish a workers owned factory failed (e.g. the knowledge gap for management and collective decission making process was overpassed Tripty Project capacity).

Tripty Project, PADP and CDP engage in empowering women trough investing efforts and money. PADP and CDP focus a lot of efforts on reducing the gap trough training on work rights, literacy, and life skills like household economical management.

4.3.1.3 ARANYA
The organization is working in the local market and trying to expand to the export market. The designers are mainly in-house and are national Bangladeshis. The organization encourage women to start business when enough skills are develop. But the recommendation is to start small. For women entrepreneurs without skills for management a good start is to have few exhibitions. Entering the
market as supplier of an umbrella brand of craft products is a recommendation to get to know the
dynamic of market beforehand. There are also external NGO’s offering to assume the due diligence
costs and help the merchandizing of products.

4.3.1.4 ACROSS THE SECTOR
There is low access to professionalization in design; the career is new and still exclusive. Industries
preferred designer who have been exposed to the international market or to the international
trends. Foreigner professionals of certain areas (design, marketing, product engineering) are
preferred due to the slow update capacity of the national Bangladeshi educational system. Thereof,
access to job opportunities as designers for national Bangladeshis who have not studied abroad are
limited. In the overall scale this subtle preference is a factor that hindrance the challenge the role
culture in the sector.

Moreover, there is the assumption that retired military staff are best for management due to their
skills in project management and orienting people. Retired military staff have stronger network
capacity in public institutions including the financial system.

4.3.2 CAPACITY BUILDING FOR INFRASTRUCTURE
Assumption: “Capacity Building is challenged by learning methods and external factors such local and
national conditions such infrastructure and education.”

4.3.2.1 BEXIMCO
The upcycling project the set-up of a line of production was required. BEXIMCO facilities have enough
space to provide it, since only 20% of the available space is in use. The conditions of Bangladesh are
poor regarding energy, roads, sanitation but this is not a challenge inside the organization. The
facilities are well prepared to satisfy all the production needs.

The challenge was to have constant training of the best 120 stitchers of BEXIMCO. Bangladesh has a
big pool of workers but not necessary are all “A” category and in most cases they do not how to read
so training have to be interactive and aim at overcoming the knowledge gaps. The recruitment of
people in charge of cutting was required and exhaustive training. Having the best stitchers working a
side is a major challenge for the organisation since it is dependent on their main production not in
the upcycle.

4.3.2.2 TRIPTY
There is a trainer in charge of capacity building and exchange of knowledge between skilled women
is encouraged. But a major challenge to achieve excellence in trainings is the lack of infrastructure
and funding. They cannot afford and find extra room in the area to provide all the necessary trainings
and to produce centralized. For example according to PADP an important missing training is teaching
young women in communication technology such as computers.

4.3.2.3 ARANYA
Aranya does not perceive their infrastructure or the learning methods in place as a challenge. The
recognition of refreshment of skills is perceived as necessary to boost inspirations and innovation.
The exchange of knowledge with similar organization is rather a driver of improvement. There are
trainings organized not only in-house, but at national level and with neighboring countries such as
Malaysia, Bhutan and Nepal. There are efforts to bring at least one skilled worker to the international
events where exchange occurs. Later the selected worker shall exchange knowledge in-house.

4.3.2.4 ACROSS THE SECTOR
The country has mainly poor infrastructure regarding stable energy supply, safe transport, drinking
water and roads maintenance. Thereby, the overall operational capacity of organization is challenged
including ability to change.
4.4 MENTAL MODELS

4.4.1 COGNITIVE

Assumption: “The challenge of transmitting the message of change towards sustainability is to allow knowledge transfer and understanding of the meaningfulness of the change. In the case of workers the challenge is to understand the need for change and their ability to generate the change.”

4.4.1.1 BEXIMCO

Conveying the message from the managerial vision to the workers was challenged in many ways: the change agents were the sustainable director (bengali speaker) and Reet Aus (did not speak bengali at that moment). Further there was a language barrier to explain the logic of the technique and therefore to boost self-confidence on workers. Thereof, translators were required to bridge between workers and the trainer. The skills of the translator to boost confidence are challenged by lack of expertise as upcycle trainer.

The idea of sustainability was explained to workers as well as the potential contribution of the project towards the environment. The ideas were not fully believed by the workers, who kept questioning the need of the technique. Workers seemed to not see the direct benefits of reducing waste in a company. Further, the understanding of the whole idea of sustainability and the logic of upcycle in the project was questioned regarding if this new way of production (time consuming and effort intensive) could have a social impact on them. The workers were encouraged through the explanation of the idea of sustainability but not through extra money for their work.

4.4.1.2 TRIPTY

Tripty Project face a communicational barrier for transmitting the message due to the language barrier. To overcome the language barrier they brought college students to be able to communicate between Bangla and English.

It was a challenge to allow the understanding of workers of why the repurposing of fabrics and natural dying can benefit them. Workers have questioned why Tripty Project wants the natural dying of fabrics, and some of them they do not understand the rationale. They don’t understand why people outside are excited of natural dyes or repurposing old sarees.

In order to overcome communication barriers and give support to the partners during the production of items, it was really important and key to teach managers (persons in charge of supervising) how to use basic functions of their phones such as skype, picture sharing among others. In that way Tripty is able to exchange information enabling picture transfer of patterns and designs as well as get update on their process.

4.4.1.3 ARANYA

Not a challenge because when the merger with Bangla Foundation occurred the change agent was original founder of Aranya. Bangla Foundation was accepted previous explanation to the workers and on the basis of vision and mission compatibility.

4.4.1.4 ACROSS THE SECTOR

There is the perception that brands feel there is a “trap” and too much blame on each others between buyer, consumers and producers. For example brands believe people will not pay extra, but resulting from this the consumer does not get good information. Further ‘sustainable’ brands are usually small because the finishing quality is not perceived as “good” compared to the industrial level even when they pay more attention to the whole production process.

4.4.2 EMOTIONAL & INTENTIONAL

Assumption: “Resistance to change is the most difficult to overcome, when class relations are institutionalized in the management style and the exploration of the right motivation is ignored”
4.4.2.1 BEXIMCO
Managers perceive that is difficult because “workers don’t have brain, they are like machines”. Workers felt frustrated and overwhelmed with the production logic that they did not understand and resulted in a slow and intensive work. Moreover, they didn’t feel motivated to do all the exhaustive work. Workers did not receive any “extra money” in exchange.

4.4.2.2 TRIPTY
Tripty Project invested 2 years to set up the company and build trust, the most important. In the process they had to overcome so many misunderstandings when talking to the people. The process of building trust is essential to understand cultural differences and improve the quality of the communication.

Tripty Project experienced that in some cases people were not comfortable saying that there is something they cannot do; that they do not know how; or for what they do not have the machinery necessary. Moreover, Tripty Project has the impression that Bangladeshi people usually do not want to disagree with the foreigner and takes too much time and patience to explore what they truly think.

4.4.2.3 ARANYA
Not a challenge because the management style is people oriented and executed by a national Bangladeshi able to communicate in bangla. The management style is participative and allows direct communication with the workers. The size of the organization is small (40 workers in house) that allows friendliness and a close relation. Workers felt insecure when the merger and changes in the organization were implemented. The owner and manager organized a meeting with all the workers to deliberate about theirs questions, insecurities. The necessary condition to allow the change was the manager stayed in the organization to conduct changes. The motivation for the workers were the increased on salary (Fair Trade).

4.4.2.4 ACROSS THE SECTOR
Class relations are strongly institutionalized in the culture. Workers are considered problematic and easily influential by NGOs and social groups. They level of knowledge of accurate fact is poor (managers simply know better). Therefore, the best option is to avoid disruption in the systems through a top-down strict management approach.

4.5 COMMUNICATION

4.5.1 SHARED VISION
Assumption: “The lack of a shared vision built with a degree of participation internally and externally hindrance the scope of changes.”

4.5.1.1 BEXIMCO
The shared vision inside the company is not a challenge because depends on the management and strategic planning. Across the sector is challenging because the competition is tight between manufacturers, even if BEXIMCO would share their findings to improve the sector. Moreover, buyers boost competition squeezing the costs of production. Sustainability is an increasing demand from the global market. BEXIMCO has gone through different improvements aiming to become a sustainable organisation. The upcycling project fitted in BEXIMCO’s aim and provided the vision of becoming a zero waste facility. The research and development of the technique has been only explored at the large scale in BEXIMCO.

4.5.1.2 TRIPTY
The Tripty Project aims to boost a Common Vision at all levels, in the administrative sphere, with workers, along the supply chain and with the ultimate consumer. The common vision is boosted through joint activities and efforts towards improving sustainability in the production, finding creative solutions for all types of waste produced in the facilities and improving living conditions of workers.
The common vision from the workers perspective of CDP is motivated by the activities they do in a collaborative way such as improving facilities in the communities (rain harvest collection), education for children and repurposing used fabrics that contributes to women in the villages and to the environment by reducing waste into landfills.

PADP networks for aid focused in urban planning and urban community development. A strategy to improve living conditions has been joint work with citizens. Some of the activities that are supported with active participation of neighbours is the provision of slab latrine, deep tube well, water tanks and dust bins.

PADP targets to improve the organization influence on the policy level. There are many things that remain to be solve at a higher level which necessary require governmental support. The main areas is to improve the living conditions in the urban area, the housing of poor people, the related public services and the environmental quality people is exposed to.

4.5.1.3 ARANYA
This was not perceived as a challenge internally, but externally a challenge due to the lack of desire of working in a collaborative way with the crafters association and others. There is no common vision with similar organizations as a sector yet.

Aranya is a member organization of fair trade. It also belong to the World Fair Trade Organization (WFTO) and to the World Crafts Council from Bangladesh. This is a space to strength dialogue among similar organizations. They actively participate and encourage the involvement in international fairs and meetings with other craft organizations. The exchange of knowledge is part of the common vision to develop further capacities and rescue traditional techniques but to have an impact in the society and have joint efforts that is rarely prone to happen (high competitiveness).

4.5.1.4 ACROSS SECTOR
The industrial sprawl without planning is a trigger on quality of life. There is room for improvement particularly from international donors pursuing to support the achievement of sustainable goals. Now that the MDG’s have passed, there is a growing support to work through local organizations and not necessary international NGO’s. The government has limit scope of impact, therefore, the international support is key. However, until now our main focus on the millennium development goals has trough women empowerment. The main impact of working from involving in those was the exchange of information.

4.5.2 BARGAINING POWER
Assumption: “Workers betterment from changes is challenged by the lack of recognition of workplace human rights.”

4.5.2.1 BEXIMCO
There is no Trade Union in BEXIMCO. Trade Unions are highly problematic. The workers do not have enough education and they are highly influenciable by political actors and NGO’s. BEXIMCO claims that workers are key in the business process, so their satisfaction at their workplace is important. BEXIMCO interest is to have an environment where workers enjoy and feel happy. If a worker is happy they do their job the best possible and consequently also the managers and owners are happy. “It is important to reward them with practices of CSR such as a child care service, a hospital, dinning service among others. In that way they are loyal and remain in the company”.

4.5.2.2 TRIPTY
Tripty, PDAP and CDP do not have a trade union and their size and type of organization does not apply to one either. First there are not too many female workers and second the relationship is based on trust.
The structure and goals of both organizations suit into a direct model of communication where continuous meetings are held. There are weekly and monthly meetings to discuss the most pressing needs and how to address them. Finally, there is dislike to Labour Unions, they are normally associated with problems and internal disagreements.

4.5.2.3 ARANYA
The size of the organization does not require a Trade Union. The relationship among managers and workers comprised in good working conditions and space for dialogue has proved to be enough. The business pursued by the organization aims to improve the livelihood opportunities of crafters therefore assures to provide the legal salary and provide support for children education through scholarship access and microcredits.

4.5.2.4 ACROSS SECTOR
There is dislike to Labour Unions, they are normally associated with problems and internal disagreements.
5 RESULTS CASE STUDY 2 – GREENING THE SUPPLY CHAIN – REACTIVE CHANGES

5.1 PRODUCTION PROCESS

5.1.1 TECHNOLOGY

Assumption: “Environmental innovations are challenged by technology availability.”

5.1.1.1 CONTINENTAL GARMENTS IND.(Pvt.) LTD

The technology required to implement Accord in the company required too many changes in infrastructure. The building is totally new comprising all rules in place. The conditions of Accord for new buildings are not the same than for old buildings. The company is phasing out the old installations because it was not worth to adequate it. Most of the devices and technology required for fire and safety, particularly the fire doors were challenge. Accord accepts only certified doors, which implied higher cost of production. Moreover, most devices are supplied by importers.

5.1.1.2 KNITTEX INDUSTRIES LTD.

Not perceived as a challenge. Enough providers for the fire and safety are already in place. Buyers contribute to the technology transfer through their own suppliers. Importing technology requires transportation trough long distance, which might not be the most sustainable alternative.

5.1.1.3 NEW LINE CLOTHING LTD.

The building had to be restructured because when was built did not have any fire and safety criteria. The walls, windows, stairs, door, electrical system among others had to change implying a high cost. The accessories for fire and safety were obtained through an importer organization, which caused delays.

5.1.1.4 ACROSS SECTOR

Technology is a challenge because machinery is not produced in the country. Fire doors and fire and safety accessories are mainly imported (implies a higher investment cost). Most of the buildings used by the garment industry where built without following fire safety rules even when laws were in place. The governmental capacity is challenged to monitor the factories that still operate illegally, without registration or permission.

Buyers main concern now is the fire and safety rules, then cost of production and finally the machinery in place (if is resource efficient or not)

5.1.2 PRODUCT FEATURES AND TECHNOLOGY.

Assumption: “The tension of the supplier firm between providing high quality and labor standard compliance together with low production costs, speed and flexibility hinderance change.”

5.1.2.1 CONTINENTAL GARMENTS IND.(Pvt.) LTD

It is a high challenge because the Bangladesh is the preferred country based on a competitiveness on low production costs. The requirements from buyers are not coherent with their willingness to pay. The expected changes menace the profitability of the business and the reactive capacity to allow changes and keep production at the same time.

5.1.2.2 KNITTEX INDUSTRIES LTD.

The fire and safety changes in infrastructure requires working out of the “normal schedule” to not stop production. They required to hire extra people for building, controlling and pay the “extra costs”. The electrical system requires infrastructural changes that stop production therefore work at night is required. The payment to workers at night and during holidays like EID is double than a worker during day time.

5.1.2.3 NEW LINE CLOTHING LTD.
This was perceived as a challenge because the restructuring of the building required extra work at all levels, therefore extra costs.

5.1.2.4 ACROSS THE SECTOR
In the fast fashion industry, the turnaround or lead time is the most pressing challenge because styles are changing so fast. Activities cannot stop for changing infrastructure. The changes required reorganization of tasks and extra work. The changes are expected to generate an invisible productivity and improvement in quality and labor standards.

5.1.3 PRODUCT FEATURES
Soft environmental policies such certifications and labels are a constraint more than an advantage but are preferred because assure auditing process and flux of change.

5.1.3.1 CONTINENTAL GARMENTS IND.(Pvt.) LTD
The only significant pressure comes from organizations such Accord and Alliance who monitor and audit intensively to ensure if Bangladesh is still enjoying a free trade quota or not. Other certifications and labels are accessory and not considered a challenge since are not too strict and are already in place for some years. The amount of consumers preferring eco labels are not significant for the business operations.

5.1.3.2 KNITTEX INDUSTRIES LTD.
Certifications and labels are part of the daily business. The manufacturer satisfies the demand of products and the characteristics required. The manager questions the labels commenting “…after all the chemical production process that a T-shirt requires there is nothing organic left in the cotton (laughs)”

5.1.3.3 NEW LINE CLOTHING LTD.
A challenge that required the reorganization of the whole building; of tasks, required recruit people and train them plus re-adequate the facilities. The production line using organic cotton has to be handle and manufacture separately from the one that is not organic. The production cannot get in contact.

5.1.3.4 ACROSS SECTOR
Certifications and labels are becoming part of the daily business. Auditing process are requiring from the sector to change faster. Other certifications required BSCI (Business Social Compliance Initiative); WRAP (Worldwide Responsible Accredited Production); SEDEX; ALLIANCE (counterpart of ACCORD but for U.S), GOTS and Oeke Tech

5.2 MARKETS
5.2.1 BUYERS POWER
Assumption: “Changes in the production require the buyer support to determine the scope of change. Buyers have the power to determine the future of change."

5.2.1.1 CONTINENTAL GARMENTS IND.(Pvt.) LTD
Challenge because buyers assure the success of change. However in this process ACCORD and ALLIANCE are the drivers of change who keep changing the conditions and requirements of change. The challenge is not only in a factory level but in the national sphere. The changes required keep changing and this is only required to Bangladeshi industries.

5.2.1.2 KNITTEX INDUSTRIES LTD.KNITTEX INDUSTRIES LTD.. Some buyers, particularly german buyers require the use of certain technology to reach a higher level of efficiency in terms of quality, energy and water usage. In practice the machines reach the desired outcome. The implementation of this machinery has been with the assessment and economic support of the german buyers who required it specifically.
5.2.1.3 NEW LINE CLOTHING LTD.
The investment required for this change is “invisible” the ultimate consumer does not see it. Therefore, buyers are key. This organization relies on the design, product development and advice from their buyers to act further and accordingly.

5.2.1.4 ACROSS SECTOR
This change challenges the allowance of trading possibilities of the country and the sector. Moreover, other changes usually depend on buyers. Most organizations do not offer design or product development, which makes them rely completely on the decisions and preferences of its buyers. The process of ACCORD has been assessed by buyers who contribute mainly with advice, recommendations and help networking to trainers and suppliers. There are complaints regarding the role of buyers participating also with investments.

5.2.2 COSTS AND INVESTMENTS
Assumption: “The high costs and investment related to change hinder the possibilities to change.”

5.2.2.1 CONTINENTAL GARMENTS IND.(Pvt.) LTD
The investments are really high but the costs of production cannot change. The process is incoherent because there is expectation from the industry without solidarity. The buyers compromised on supporting the investment but so far my organization has not received any economical support or commitment to have long lasting contracts to assure the turnover.

5.2.2.2 KNITTEX INDUSTRIES LTD.
Not perceived as a challenge. But admitted that is a challenge in the sector. This organization had to clear completely their bank accounts to assume the costs of change including the new effluent plant ($12 million).

5.2.2.3 NEW LINE CLOTHING LTD.
Perceived as a big challenge since the costs of production increases too much to remain competitive. The commercial loans obtained reached the 18% interest rate.

5.2.2.4 ACROSS SECTOR
Organizations can access to Letter of Credits however the lead time can reach 90 – 120 days challenging the capacity of payment. Currency devaluates affecting competitiveness with neighbouring countries. Only organizations working with knit products have tax exemptions (government incentive). Interest rate from financial institutions range from 13% - 18%

5.2.3 BUSINESS MODEL
Assumption: “The selection of a business model that assures sustainability, profitability and betterment of workers is highly difficult.”

5.2.3.1 CONTINENTAL GARMENTS IND.(Pvt.) LTD
The business model in the garment industry is based on low cost of production in labor. This implies a lot of pressure on suppliers to keep the business running with low standards.

Managers perceive incoherence in the business model. Buyers require changes but do not give enough support to overcome the financial struggle of changing. Moreover, they still ask reductions on production costs. The threat that buyers shift their business to neighboring countries is omnipresent.

5.2.3.2 KNITTEX INDUSTRIES LTD.
Not perceived as a challenge for them because their buyers are serious and punctual. But in the sector, the lead time and turnover of most contracts between buyers and suppliers can cause payment delays to workers. The business model depends in greater extend on the buyer, if they push for higher competitiveness is difficult or the supplier to invest on sustainability.

5.2.3.3 NEW LINE CLOTHING LTD.
The business model is challenged by the relation between buyers and retailers, if they do not assure coherent and loyal conditions for suppliers is not possible to have a stable market. The production costs vary depending the economic

5.2.3.4 ACROSS SECTOR
Difficult to obtain a business model encompassing sustainability due to the dependency of an export oriented business model based on profitability at the lowest production cost.

5.3 SKILLS & CAPACITY

5.3.1 JOB/ROLE CULTURE
Assumption: “The challenge of further innovation and change is the lack of skills and capacity in the country as part of the role culture.”

5.3.1.1 CONTINENTAL GARMENTS IND.(Pvt.) LTD
Challenge overcome, at the beginning of the process there were not enough organizations able to provide trainings on fire and safety. Now there are plenty trained with support of buyers.

Bangladesh does not have the expertise to assume the risks of assuming a brand or a marketing strategy to gain over consolidated brands with more than 60 years in the market. The investments to be a manufacturer maybe are higher than the ones of be a retailer. But the expertise to open a brand in a cultural different market comprises too high risks.

Workers are not prone to change too much. They do not have education and are not stable. Workers sometimes move to a company for 50 or 100 taka more until they realize they were treated better in our organization.

5.3.1.2 KNITTEX INDUSTRIES LTD.KNITTEX INDUSTIES LTD.
Not a challenge – The organization does not have a department in charge of design or product development, however relies on a “middle men agency” -> Wilson Ltd. “The staff working in Wilson are Bangladeshi nationals, the country manager studied in London”.

5.3.1.3 NEW LINE CLOTHING LTD.
Workers are trained always to assure productivity and control the quality. Problems emerge due to the instability of workers in their attendance and changing organizations. Reasons to skip work are visits to family members in the villages. The problem for the organization is that firing a worker is not easy by law and involves a long tiring paper work process with authorization of the Ministry. The organization compromises on offering the best conditions to motivate their productivity and loyalty.

5.3.1.4 ACROSS SECTOR
Know-how is not available for most manufacturers which rely either on buyers for design and product development on third parties “middle men”. Trainings mainly seek to improve productivity. There is low access to professionalization in design, the career is new and still exclusive. Moreover, access to job opportunities are factors that hindrance the challenge to change in the sector.

5.3.2 CAPACITY BUILDING FOR INFRASTRUCTURE
Assumption: “Capacity Building is challenged by external factors such local and national conditions such infrastructure and learning methods.”

5.3.2.1 CONTINENTAL GARMENTS IND.(Pvt.) LTD
The organization has enough capacity in-house, including a department in charge of trainings. The trainings focus on improving productivity and assure safety. The challenge comes from the national capacity in place. There are no stable energy supply for factories or neighborhoods, roads challenge the commuting time to work and for delivery of products (a high risk) and political instability challenges all activities. Moreover, productivity is the priority, we can profit and assure workers salaries only if the orders are completed in time. The roads constrain and political instability forces us to finish the orders with a respectful buffer time.
5.3.2.2 KNITTEX INDUSTRIES LTD.
Not a challenge for capacity building inside the factory. The national and local conditions increases the cost of production and affects the whole system in the sense that the quality of education is lower than in other countries. “Young professionals have either to leave to study abroad like me in London or invest high amounts of money in private universities, such as for design”.

The lack of public services and the related infrastructure increases the running costs. The organization has to buy gas to run the factory. A liter of compressed natural gas bought from the government can cost 40 tks per liter but for a private use is 400 tks. The minimum amount required in a day of production is 3 full trucks.

5.3.2.3 NEW LINE CLOTHING LTD.
Tis is not perceived as a challenge. Training can take place while the production process with a combination of learning by doing, by using and by looking approach. The focus of the training are areas that increase productivity and improves the use of machines and accessories.

5.3.2.4 ACROSS SECTOR
The local conditions comprise poor infrastructure regarding stable energy supply, quality of roads, drinking water and organizations complain they have to pay extra for local “security”.

5.4 MENTAL MODELS
5.4.1 COGNITIVE
The challenge of transmitting the message of change towards sustainability is to allow knowledge transfer and understanding of the meaningfulness of the change. In the case of workers the challenge is to understand the need for change and their ability to generate the change.

5.4.1.1 CONTINENTAL GARMENTS IND.(Pvt.) LTD
The understanding of the managers is challenged by the fact that the process takes place only in Bangladesh. He questions why all this requirements happen in this country after one incident while neighbouring countries have similar or even worst events.

5.4.1.2 KNITTEX INDUSTRIES LTD.
Not a challenge if interactive methods like videos are used. Workers need to understand the consequences and benefits of fire and safety.

5.4.1.3 NEW LINE CLOTHING LTD.
Challenge in all levels of the organization. Owner did not understand why was so important to change and did not see it possible. It took time until the export activities were dependant on the change. Workers did not like the new rules and accessories.

5.4.1.4 ACROSS SECTOR
Challenges in many ways the business culture. Organizations are required to certified the origin of their products such fire doors, to comply exhaustively due to surprise monitor and audit controls and to think twice in which facilities allocate a factory.

5.4.2 EMOTIONAL & INTENTIONAL
Assumption: “Resistance to change is the most difficult to overcome, when class relations are institutionalized in the management style and the exploration of the right motivation is ignored.”

5.4.2.1 CONTINENTAL GARMENTS IND.(Pvt.) LTD
Managers perceive that is difficult for workers to feel comfortable using certain accessories such metallic globes, uniforms, eye protection (diminish visibility) and others that make them feel warmer. Manager seems frustrated because the process occurs without dialogue between buyers and suppliers.
5.4.2.2 **KNITTEX INDUSTRIES LTD.**
A challenge, workers are not used to accessories for fire and safety. They feel uncomfortable wearing masks, globes, special glasses among others. They perceive those as heavy and that slow their work performance.

5.4.2.3 **NEW LINE CLOTHING LTD.**
Frustration from part of the owner of the organization because the building was his design and the investment did not pay off. The restructuration of the building overpassed the willingness to pay from the owner on the facilities. The owner invested in good quality supplies and restructures that are paying off in quality of products – for instance the modern cooling system which improves the quality the air in the facility as well as the quality of garments.

5.4.2.4 **From the side of the workers, they feel uncomfortable with the new accessories, rules and extra trainings which demanded time out from home. ACROSS SECTOR**
Challenge in all levels of the organization. Owner did not understand why was so important to change and did not see it possible. It took time until the export activities were dependant on the change. Workers did not like the new rules and accessories.

5.5 **COMMUNICATION**

5.5.1 **SHARED VISION**
The lack of a shared vision built with a degree of participation internally and externally hindrance the scope of changes.

5.5.1.1 **CONTINENTAL GARMENTS IND.(Pvt.) LTD**
Externally there is no dialogue. There are spaces where buyers and suppliers meet to discuss next year trends, fabrics, colors but there is no real space for dialogue with organizations that are pushing for changes.

5.5.1.2 **KNITTEX INDUSTRIES LTD.**
This is not a challenge. It is believed this changes are the best to encourage safety, the reputation of Bangladesh and improve production and to motivate workers. Internally workers want work and even more work otherwise they get bored with nothing to do. BGMEA has regular meetings to discuss and find agreements regarding wages and further collaboration.

5.5.1.3 **NEW LINE CLOTHING LTD.**
Not a challenge, the control is getting strong at all levels. Suppliers and Buyers think twice to make business with organizations not complying. Suppliers do not want to see Bangladesh losing its position in the global market, therefore encourage changes to colleagues. The ethical practices are becoming shared, and on which the ultimate consumer is gaining awareness and information of why is important to pay a higher cost.

5.5.1.4 **ACROSS SECTOR**

5.5.2 **BARGAINING POWER**
Workers betterment from changes is challenged by the lack of recognition of workplace human rights.

5.5.2.1 **CONTINENTAL GARMENTS IND.(Pvt.) LTD**
According to the manager, Trade Unions are not safe for the factories. Trade Unions are highly polityzed and influenced by some NGOS’s brainwashing them. The organization considers enough to have a Working Participatory Comitie (WPC) in charge of listing and filing complains, follow with an agreement based on negotiation.
According to the manager the most important issue is to pay workers on time. If he assure the payment on time, then the organization will avoid problems with workers. The manager reflects that is natural to find disagreements in the factory with or between the workers. Therefore, the WPC assure an effective communication channel to assist them in their needs, solve the problems and improve the working environment. The line supervisors have an important role to assure effective communication.

5.5.2.2 KNITTEX INDUSTRIES LTD.
Trade unions are distrusted by the organisation and perceived as trouble maker. The organisation perceives itself as rolemodel for labour standards and documents this with medical facilities and workers participation committees.

5.5.2.3 NEW LINE CLOTHING LTD.
Workers use a workers committee instead of a labor union. Labour unions are perceived to be difficult to handle due to the strong influence of NGO’s. Moreover, the workers are not educated so they are easy influenced consequently misbehave bringing consequences to loose productivity. Workers skip job to visit their families in the villages, they change factories without previous notification and overall is hard for organizations to find serious people to work in this sector.
### 5.6 SYNTHESIS CASE STUDY 1

<table>
<thead>
<tr>
<th>ASSUMPTION</th>
<th>CATEGORY &amp; SUBCATEGORY</th>
<th>BEXIMCO</th>
<th>TRIPTY</th>
<th>ARANYA</th>
<th>SCOPE OF CHALLENGES</th>
<th>ACROSS THE SECTOR</th>
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</thead>
<tbody>
<tr>
<td>Environmental innovations are challenged by technology availability.</td>
<td>PRODUCTION PROCESS</td>
<td>NO on machinery. Know-How for upcycling at the industrial scale was “imported” (foreign designers).</td>
<td>NO on machinery. Existing traditional techniques used in hand-made products. Upcycle of organic fibers was introduced by designers.</td>
<td>NO, from machinery or know-how. Aranya exploits their in-house capacity – national Bangladeshi designers continually trained.</td>
<td>Know how on natural dying and traditional weaving, handloom and stitches are disappearing.</td>
<td>Technology in terms of machinery is mainly imported, existing know-how for technical innovations based on slow fashion techniques is getting lost due to lack of exploitation.</td>
</tr>
<tr>
<td>The tension of the supplier firm between providing high quality and labor standard compliance together with low production costs, speed and flexibility hindrance change.</td>
<td>PRODUCTION PROCESS     &amp; Product Features</td>
<td>Yes, Speed &amp; flexibility perceived as relative challenges. Not industrial finishing quality perceived as major challenge (from ultimate consumer).</td>
<td>Yes, Quality control in terms of hygienic standards perceived as a challenges that can be overcome through training.</td>
<td>No, Finishing quality a problem for some customers. Natural dyed products rarely produce two items with the same tonality of color.</td>
<td>Consumers knowledge is limited regarding care of products and techniques involved in hand-made products. The expectations on finishing quality require knowledge from consumers.</td>
<td>Technologies in terms of machinery evolve in a way that distinguishing hand-made characteristics and qualities from automatized production are becoming harder.</td>
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<td>Soft environmental policies such certifications and labels are a constraint more than an advantage but are preferred because assure auditing process and flux of change.</td>
<td>PRODUCT FEATURES</td>
<td>Product Features</td>
<td>Yes, Certifications not used – Tripty Project considers audit an un-trustful check list. The approach is information dissemination and transparency.</td>
<td>Yes, A major challenge that implies unbearable costs for production capacity and increases considerably the production costs.</td>
<td>Traceability of raw materials is a problem even using certifications.</td>
<td>Certifications and labels are required by buyers to enable trade, however buyers do not consider the increase cost on production that they represent and keep squeezing the costs of production.</td>
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<td>ASSUMPTION</td>
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<tr>
<td>Changes in the production require the buyer support to determine the scope of change. Buyers have the power to determine the future of change.</td>
<td>MARKETS</td>
<td>Role of Buyers</td>
<td>Beximco contributed to create a small brand and assure their products on it.</td>
<td>Not a challenge, Tripty is the buyer driver of change. Yes for supplying partners PDAP and CDP it is a challenge.</td>
<td>Depends, Aranya is self sufficient inside Bangladesh, but for their efforts to the export market are dependant on potential buyers.</td>
<td>Big buyers who produce the waste in the facilities could make “the difference” if they join to the initiative. At the end is “their” waste.</td>
</tr>
<tr>
<td>The high costs and investment related to change hinderance the possibilities to change.</td>
<td>MARKETS</td>
<td>Cost &amp; investments,</td>
<td>Not a challenge, production costs shifted from material (highest) to labor.</td>
<td>No, Assumption does not apply to Tripty but to its partners PADP and CDP.</td>
<td>Yes, Aranya as a brand could not bear the investments costs on expanding capacity and merged with Bengal Foundation.</td>
<td>SME’s rely more in external financial sources to bear the investment costs, while larger suppliers can finance this partially out of the own capacities.</td>
</tr>
<tr>
<td>The selection of a business model that assures sustainability, profitability and betterment of workers is highly difficult.</td>
<td>MARKETS</td>
<td>Business Model</td>
<td>because even when they aim a shift on the costs of production from raw material (highest) to labour, the profitability is questioned.</td>
<td>No, because Tripty business model is based on an identity built around sustainability “Ethically made in Bangladesh”.</td>
<td>No, Not a challenge.</td>
<td>Difficult to obtain a business model encompassing sustainability due to the dependency of an export oriented business model based on profitability at the lowest production cost.</td>
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<td>ASSUMPTION</td>
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<tr>
<td>The challenge of further innovation and change is the lack of skills and</td>
<td>SKILLS and Capacity</td>
<td>Jobs/ Role Culture</td>
<td>Foreign professionals for the management areas and for design and product development are preferred.</td>
<td>Yes, The skills gap in workers is too high, there are literacy barriers, language barriers and professional education.</td>
<td>Yes, They work mainly with national Bangladeshi professionals, designers and young professionals. Further development is encouraged through providing training for workers in international craft workshops, events, fairs &amp; others.</td>
<td>There is low access to professionalization in design, the career is new and still exclusive. Moreover, access to job opportunities are factors that hinder the challenge to change in the sector.</td>
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<td>capacity in the country as part of the role culture.</td>
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<tr>
<td>Capacity Building is challenged by external factors such local and national</td>
<td>Skills and capacity</td>
<td>Capacity Building for</td>
<td>Not perceived as a challenge, but as a part of the daily business with trainings focused on productivity.</td>
<td>Yes, Poor infrastructure and poor resources in place. Partners have limited opportunities for further capacity building.</td>
<td>Not perceived as a challenge.</td>
<td>Poor infrastructure regarding stable energy supply, safe transport, drinking water and roads maintenance.</td>
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<td>conditions such infrastructure.</td>
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<td>Infrastructure</td>
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<td>ASSUMPTION</td>
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<tr>
<td>The challenge of transmitting the message of change towards sustainability is to allow knowledge transfer and understanding of the meaningfulness of the change.</td>
<td>MENTAL MODELS</td>
<td>Challenged by language barriers with the change agent (designer).</td>
<td>No, not a challenge (expected). Language barrier between designers and workers. Workers did not understand why foreign buyers wanted to work old techniques (natural dyes) and buy their used clothes (upcycling).</td>
<td>No, Not a challenge because when the merger with Bangla Foundation occurred the change agent was original founder of Aranya. Bangla Foundation was accepted previous explanation to the workers and on the basis of vision and mission compatibility.</td>
<td>Yes, organizations do not change because they do not have any incentive. From the garments sector only factories working with knitting have governmental incentives. Workers do not understand why or how this will improve their livelihoods.</td>
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<tr>
<td>Resistance to change is the most difficult to overcome, when class relations are institutionalize in the management style (selwyn pag. 87) and the exploration of the right motivation is ignored ()</td>
<td>MENTAL MODELS</td>
<td>Managers perceive that is difficult because the concept was not understood by the workers and the management showed difficulties accepting this.. Workers felt frustrated with the production logic that they did not understand and made them work</td>
<td>Not a challenge, Tripty Project has a human oriented management. However, cultural differences can bring communication barriers out of the management style. Workers are excited to see the results of the new</td>
<td>Not a challenge because the management style is people oriented and executed by a national Bangladeshi able to communicate in bangla. The management style is participative and allows direct communication with the workers.</td>
<td>Big organizations have a top down approach, there is no planning with workers participation. Seminar oriented training to explain benefits of projects. Workers have problems understanding the notion of</td>
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<tr>
<td>The lack of a shared vision built with a degree of participation internally and externally hindrance the scope of changes.</td>
<td>COMMUNICATION</td>
<td>Shared Vision</td>
<td>Perceived as a challenge because the competition among companies is based on low production costs. BEXIMCO would share the findings on the research with the sector but they fear the investments won’t occur. Moreover buyers are not totally loyal to a supplier they change to different countries and suppliers looking for the lowest cost of production.</td>
<td>Not a challenge, work is done in a collaborative way internally and including external actors, NGOs, civil society and other actor to reach further.</td>
<td>No, not a challenge internally but externally a challenge due to the lack of desire of working in a collaborative way with the crafters association and others. There is no common vision with similar organizations as a sector yet.</td>
<td>The Common Vision in the external level is a challenge due to the effort and investments required to convey and transfer the message. To create awareness on consumers, buyers and even further other institutions such governmental institutions.</td>
</tr>
<tr>
<td>Workers betterment from changes is challenged by the lack of recognition of workplace human rights.</td>
<td>COMMUNICATION</td>
<td>Bargaining Power</td>
<td>There is no Trade Union in place but a workers participative committee. CSR is used to promote workers satisfaction and loyalty to the organization.</td>
<td>Tripty capacity does not apply for a Trade Union. It is not a challenge because they proceed ethically with workers</td>
<td>The size of the organization does not require a Trade Union. The relationship between managers and workers comprise in good working conditions, fair</td>
<td>There is dislike to Labour Unions, they are normally associated with problems and internal disagreements.</td>
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</table>
wages and dialogue.
## 5.7 SYNTHESIS CASE STUDY 2

<table>
<thead>
<tr>
<th>ASSUMPTION</th>
<th>CATEGORY</th>
<th>SUBCATEGORY</th>
<th>CONTINENTAL GARMENTS IND. (PVT.) LTD</th>
<th>KNITTEX INDUSTRIES LTD.</th>
<th>NEW LINE CLOTHING LTD.</th>
<th>ACROSS THE SECTOR</th>
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<tbody>
<tr>
<td>Environmental innovations are challenged by technology availability.</td>
<td>PRODUCTION PROCESS</td>
<td>Technology</td>
<td>Challenged the whole building structure (new building in place now). Fire doors are a complicated requirement because have to be certified. All devices are imported; the challenge is delivery time and higher price.</td>
<td>Not perceived as a challenge. Enough providers for the fire and safety are already in place. Buyers contribute to the technology transfer through their own suppliers. Importing technology requires transportation through long distance, which might not be the most sustainable alternative.</td>
<td>The building had to be restructured because when was built did not have any fire and safety criteria. The accessories for fire and safety were obtained through an importer organization, which caused delays.</td>
<td>Technology for this change is a challenge because machinery is not produced in the country. Fire doors and accessories are mainly imported (implies a higher investment cost). Most of the buildings used by the garment industry where built without following fire safety rules even when laws were in place. The governmental capacity is challenged to monitor the factories that still operate illegally, without registration or permission. Buyers main concern now is the fire and safety rules, then cost of production and finally the machinery in place (if is...</td>
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<td>ASSUMPTION</td>
<td>CATEGORY</td>
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<tr>
<td>The tension of the supplier firm between providing high quality and labor standard compliance together with low production costs, speed and flexibility hindrance change.</td>
<td>PRODUCTION PROCESS</td>
<td>Technology &amp; Product Features</td>
<td>The changes challenge the profitability, competitiveness, reactive capacity and rate of production.</td>
<td>The changes affected the speed of production; therefore extra working shifts are required. This is a challenge also in good labor conditions because they require people working late night.</td>
<td>Perceived as a challenge because the restructuration of the building required extra work at all levels therefore challenge the orders in place.</td>
<td>The changes caused reorganization of activities, extra work and are expected to generate an invisible productivity and improvement in quality and labor standards.</td>
</tr>
<tr>
<td>Soft environmental policies such certifications and labels are a constraint more than an advantage but are preferred because assure auditing process and flux of change.</td>
<td>PRODUCT FEATURES</td>
<td>Product Features</td>
<td>Certifications and labels are part of the daily business. Labels are not that representative. Accord and Alliance as agreements are challenging the factory and the sector.</td>
<td>Certifications and labels are part of the daily business. The manager questions the labels commenting “...after all the chemical production process that a T-shirt requires there is nothing organic left in the cotton (laughs)”</td>
<td>A challenge that required the reorganization of the whole building and of tasks; required recruit people and train them plus re-adequate the facilities. The production line using organic cotton has to be handle and manufacture separately from the one that is not organic.</td>
<td>Certifications and labels are becoming part of the daily business. Auditing process are requiring from the sector to change faster. Other certifications required BSCI (Business Social Compliance Initiative) WRAP (Worldwide Responsible Accredited Production) ALLIANCE (counterpart of ACCORD but for U.S)</td>
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<td>ASSUMPTION</td>
<td>CATEGORY</td>
<td>SUBCATEGORY</td>
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<tr>
<td>Changes in the production require the buyer support to determine the scope of change. Buyers have the power to determine the future of change.</td>
<td>MARKETS</td>
<td>Role of Buyers</td>
<td>Challenge because buyers assure the success of change. However in this process ACCORD and ALLIANCE are the drivers of change who keep changing the conditions and requirements of change.</td>
<td>Buyers play a pivotal role. This organization was helped by their German buyers, who required and brought energy and water efficient technology to be used only in their brands. The brands contributed also economically and engaging in longer contracts.</td>
<td>The investment required for this change is “invisible” the ultimate consumer does not see it. Therefore, buyers are key. This organization relies on the design, product development and advice from their buyers to act further and accordingly.</td>
<td>Challenges the allowance to trade with Europe.</td>
</tr>
<tr>
<td>The high costs and investment related to change hinderance the possibilities to change.</td>
<td>MARKETS</td>
<td>Cost &amp; investments</td>
<td>The investments are high but the costs of production cannot change. The buyers committed to supporting economically but the organization has not received any support that could assure the turnover.</td>
<td>Not perceived as a challenge. But admitted that is a challenge in the sector. This organization had to clear completely their bank accounts to assume the costs of change including the new effluent plant ($12 million).</td>
<td>Perceived as a big challenge since the costs of production increase too much to remain competitive. The commercial loans obtained reached the 18% interest rate.</td>
<td>Organizations can access to Letter of Credits however the lead time can reach 90 – 120 days challenging the capacity of payment. Currency devaluates affecting competitiveness with neighbouring countries. Interest rate from</td>
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<td>Assumption</td>
<td>Category</td>
<td>Subcategory</td>
<td>CONTINENTAL GARMENTS IND.(PVT.) LTD</td>
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<tr>
<td>The selection of a business model that assures sustainability, profitability and betterment of workers is highly difficult.</td>
<td>MARKETS</td>
<td>Business Model</td>
<td>The business model in the garment industry is based on low cost of production, particularly in labor.</td>
<td>Not perceived as a challenge for them because their buyers are serious and punctual. The lead time and turnover of most contracts between buyers and suppliers can cause payment delays to workers.</td>
<td>The business model is challenged by the relation between buyers and retailers, if they do not assure coherent and loyal conditions for suppliers is not possible to have a stable market. The production costs vary depending the economic competitiveness before other countries.</td>
<td>Difficult to obtain a business model encompassing sustainability due to the dependency of an export oriented business model based on profitability at the lowest production cost.</td>
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<tr>
<td>The challenge of further innovation and change is the lack of skills and capacity in the country as part of the role culture.</td>
<td>SKILLS and Capacity</td>
<td>Jobs/ Role Culture</td>
<td>Challenge overcome, at the beginning of the process there were not enough organizations able to provide trainings on fire and safety. Now there are plenty trained with support of buyers. Workers do not have education and constrained the</td>
<td>Not a challenge, design and product development is subcontracted to an agency working with national Bangladeshi staff (designers).</td>
<td>They work mainly with national Bangladeshi professionals, designers and young professionals. Further development is encouraged trough providing training for workers in international craft workshops, events, fairs &amp; others.</td>
<td>Know-how is not available for most manufacturers which rely either on buyers for design and product development on third parties “middle men”. Trainings mainly seek to improve productivity. There is low access to professionalization in design, the career is new and still exclusive.</td>
</tr>
<tr>
<td>Capacity Building is challenged by external factors such local and national conditions such infrastructure.</td>
<td>Skills and capacity building</td>
<td>Capacity Building for Infrastructure</td>
<td>No, infrastructure in the organization is not a challenge. Time is a challenge, trainings have to be organized in a way they do not affect productivity.</td>
<td>Not a challenge for capacity building inside the factory. The national and local conditions increases the cost of production.</td>
<td>Not perceived as a challenge. Training can take place while the production process with a combination of learning by doing, by using and by looking approach. The focus of the training are areas that increase productivity and improves the use of machines and accessories.</td>
<td>Moreover, access to job opportunities are factors that hindrance the challenge to change in the sector. The local conditions comprise poor infrastructure regarding stable energy supply, quality of roads, drinking water and organizations complain they have to pay extra for local “security”.</td>
</tr>
<tr>
<td>Assumption</td>
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<tr>
<td>The challenge of transmitting the message of change towards sustainability is to allow knowledge transfer and understanding of the meaningfulness of the change.</td>
<td>MENTAL MODELS</td>
<td>Cognitive</td>
<td>Managers understanding is challenged by questioning why the process if required only to Bangladesh and not to other countries. Managers perceive the scope of changes are even intrusive of the culture.</td>
<td>Not a challenge if interactive methods like videos are used. Workers need to understand the consequences and benefits of fire and safety.</td>
<td>Challenge in all levels of the organization. Owner did not understand why was so important to change and did not see it possible. It took time until the export activities were dependant on the change. Workers did not like the new rules and accessories.</td>
<td>Challenges in many ways the business culture. Organizations are required to certify the origin of their accessories such fire doors, to comply exhaustively due to surprise monitor and audit controls and to think twice in which facilities allocate a factory.</td>
</tr>
<tr>
<td>Resistance to change is the most difficult to overcome, when class relations are institutionalize in the management style (selwyn pag. 87) and the exploration of the right motivation is ignored ()</td>
<td>MENTAL MODELS</td>
<td>Emotional &amp; Intentional</td>
<td>Managers perceive that is difficult for workers to feel comfortable using certain accessories such metallic globes, uniforms and eye protection (diminish visibility). Manager seem frustrated because the process occurs without dialogue between buyers</td>
<td>A challenge, workers are not used to accessories for fire and safety. They feel uncomfortable wearing masks, globes, special glasses among others. They perceive those as heavy and that slow their work performance.</td>
<td>Frustration from part of the owner of the organization and from the workers who felt uncomfortable with the new supplies and rules.</td>
<td>There are mixed feeling, of proud and hope that the sector is improving and of worry and frustration that the competitiveness is undertreat. In addition the questioning of why only Bangladesh is audited and not neighbouring countries.</td>
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<tr>
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<tr>
<td>The lack of a shared vision built with a degree of participation internally and externally hinderance the scope of changes.</td>
<td>COMMUNICATION</td>
<td>Shared Vision</td>
<td>Externally they don’t have dialogue. They meet with buyers in the fashion weeks but there is no real space for dialogue with organizations that are pushing for this changes that treats the sector.</td>
<td>Not a challenge. Internally workers feel safer and they want work. They want even more work otherwise they get bored with nothing to do. BGMEA has regular meetings to discuss and find agreements regarding wages and further collaboration as a sector.</td>
<td>Not a challenge, the control is getting strong at all levels. Suppliers and Buyers think twice to make business with organizations not complying. Suppliers do not want to see Bangladesh losing its position in the global market, therefore encourage changes to colleagues. The ethical practices are becoming shared, on which the ultimate consumer is gaining awareness and information of why is important to pay a higher cost.</td>
<td>Challenged, There is common vision among associations but not including buyers or workers. The understanding of the consequences of decisions on the broad system is not seen.</td>
</tr>
<tr>
<td>Workers betterment from changes is challenged by the lack of recognition of workplace human rights.</td>
<td>COMMUNICATION</td>
<td>Bargaining Power</td>
<td>Not Trade Union but a Workers participatory committee. Workers can bring drinking water to their homes from</td>
<td>Not Trade Union but a Workers participatory committee.</td>
<td>Not Trade Union, but a Workers Participatory Committee.</td>
<td>Labour rights are challenged by the overall local conditions. Workers live closer to the factories but the living conditions are poor (slums). Factories and workers do not have</td>
</tr>
</tbody>
</table>
the factory.  

energy supply, drinking water and effective transportations systems.
6 DISCUSSION

6.1 Limitations of the study

6.1.1 Interview Partners

6.1.1.1 Selected Innovations

A limitation of case study 1 is the selected innovations, which are representative of best practices encompassing a different market. This practices are not representative of the fashion industry as a whole or the Bangladeshi sector, or mass consumers. The results provide a view on the challenges of small initiatives trying to make a difference targeting a specific consumer.

6.1.1.2 Selected Organizations

A limitation for case study 2 was the selected organizations. The organizations had mainly a good capacity and management in place, which are not totally representative of Bangladesh as a country or sector. Bangladesh has approximately 5000 factories, working under different conditions; strategies; innovations; structures; legal status; capacity; business models and business culture, among others. Therefore, it is highly complex to have an accurate impression of what is the scope of challenges or the most pressing challenge in the sector.

6.1.1.3 Number of interviewees

A limitation of the study is the number of people interviewee per organization and their role inside the organization. The number of people interview per organization does not represent all levels of the structure quantitatively and qualitative. The data collected is mainly from managers and middle managers. The information provided by the management is useful to understand the challenges perceived as a business but not fully as an organization. The understanding of challenges comprising workers point of view would have enriched the results particularly to analyze the degree of learning organization and in the categories mental models; skills and capacity; and communication (common vision & bargaining power).

Interviews with workers in case study 1 was possible until some degree with assistance of managers due to the language barrier, which might be considered bias on the data. In case study 2 was not welcome, thus not conducted. To overcome the lack of data from case study 2, a complementary interview to Nazma Akter (reknown female Trade Union leader) was conducted. Nazma’s opinion gives an overview of one of the position of workers in the sector but not in the organizations analyzed.

6.1.2 Time scale

The occurrence of changes and innovations has a long time frame that due to the nature of the research cannot be observed. The information obtained at the moment of the interview represent the opinion of challenges already overcome or still in process. The forth coming challenges were not fully expressed or perceived due to the difficulty to anticipate them. Moreover, the ever changing national, local and international conditions (ei. political stability, currency valuation, trade quotas, etc.) influence the scope of challenges depending each circumstance.

6.1.3 Quality of Data

A limitation of this study is that the data collected is based on opinions, perceptions and experiences of people. The data of such a small sample of interviewees is difficult to generalize but useful to describe, interpret connections between the dynamics and conditions of the country and the market; explore the existence of the problem and provide an overall context or panoramic view of the object of research.

The quality of information collected might vary in content and way of expression depending the situation, the environment and the humour of the interviewee. In addition, the personal characteristics such as personality and role of the interviewee will differ regarding the perception of
challenges and the scope of challenges. Moreover, a current challenge might be perceived as more threatening than one that has been solved, bringing an extra complexity to weight them.

6.1.4 Quality of Literature Review
A limitation of the literature review is that was extensive and overarching different areas and disciplines (including fashion design). The researcher face the challenge to determine where the limits of it are and is limited to their own expertise. Therefore, there might be important or more updated literature that was not considered even with exhaustive effort.

6.1.5 Quality of the analysis
A limitation of the analysis is that relies on a fine tune from the researcher to keep objectivity, contextualize the data obtained from new cultural interactions and to distinguish which statements are exaggerate or not completely true. There were managers perceived as more optimistic or enthusiast of putting the organizations under the best light. There were perceptions of the researcher that clashed from seen an eastern culture with western eyes, which required constant reflection and questioning to keep objectivity. Finally, the researcher relies on the bona fide of the interviewees regarding the veracity of the information provided.

6.2 Discussion of main results
6.2.1 PRODUCTION PROCESS
6.2.1.1 Technology
The revised literature emphasizing on technology push (Rehfeld et al., 2007; Horbach, 2008; & Ziegler, 2008) suggested that the most important innovations occurs in terms of machinery such as seeking resources efficiency (ie. energy and water). Under certain circumstances the technology changes are so large that requires they result on insufficient and highly costly efforts (Nemet, 2009).

The results from this study showed that the technology available in Bangladesh constrains changes. Further, the knowledge capabilities inside garment organizations are insufficient to boost research and development of technological innovations.

The results from case study 1 showed in all organizations that efficiency on resources can improve efficiency based on a versatile design as suggested by DeBrito (2008) & McDonough (2010), which was perceived as cost-effective. The results showed that there is existing and valuable know-how but endangered due to lack of exploitation and difficult to be exploited due to the role culture of assembly suppliers. The cost-effectiveness of the practices was not proved by any econometrical analysis revised by the researcher, only stated by managers.

6.2.1.2 Tension in the production process due to contradictions in the market
The contradictions in the market (explained by Barriéros, Gerreffi, Gibbon, Rossi and Seuring) imply that changes and innovations are difficult to occur due to a tension between firms based on producing at a low cost high quality products that should not last long. To reach the desired quality and productivity, the production process require good machinery. The production should occur under good labor conditions.

The results of case study 2 confirmed the assumption due to the fact that the process of change imposed is labor, time and cost intensive. Managers mentioned having to work double and triple shifts overnight to accomplish the changes and to be obliged by law to pay extra to workers. Managers brought the doubt that other organizations might not be paying what corresponds and triggering a bad reputation in the sector, however this doubt was by no means cleared.

The results of case study 1 contradicted the assumption and confronted it. The results confirmed that product based green supply strategies are more prone to avoid tension due to the allowance of a tailor made strategy of change.
6.2.1.3 Product Features

The literature suggested that soft environmental policies such as the certification of environmental management systems and environmental labelling (Rehfeld, et al.2007) assure auditing processes and flux of change to improve qualities in the product and its production.

The results confirmed that the aforementioned instruments assure auditing processes and flux of change. Case study 2 provides the strongest evidence due the attention the change generates in the national and global arena. The quality of the auditing processes or the impact of the instruments was not confirmed in either case. Case study 2 highlighted that the changes are invisible for the ultimate consumer and buyer. It might not change the perception of the product or production process before other producers.

The perception of an existing challenge varied between organizations. The cases provided evidence pointing that certifications imply a challenge due to an extra effort at all organizational levels regardless the organizational capacity. In case study 1 the change imply to import an environmental labelling (invite external auditors to the country and reorganization of tasks and processes). Managers pointed out that the processes require extra training to enable understanding of signs and letters in illiterate workers.

The results confirmed that environmental labelling are a challenge for small and medium producers. The results also shed light that business models targeting a stronger relation with the consumer can avoid the use of certifications and labelling by strengthening information channels.

The results of case study 1 brought attention to the role of the consumers and the level of information and knowledge they manage. The results suggested that consumers do not acquire knowledge regarding how products are produced, the benefits of different practices, and correct care of products. The lack of information in consumers lead to misunderstandings of sustainable practices and over-expectation on features considered as quality. In this respect none approach to explore the level of knowledge in consumers or quality of information available was taken.

6.2.2 MARKETS

6.2.2.1 Role of Buyers

The literature suggested (Barrietos, Gerreffi, Gibbon, Rossi) that buyers also referred as leading firms in global production networks have a determinant role coordinating the supply chain. Even more is suggested that the coordinating ability provides a power over the supply chain even when resources are not owned (Gibbon:2001,346).

The results of the case study slightly confronted the assumption regarding the capacity of the organizations indistinctly of the position in the supply chain. In case study 1, the distinction between buyer and supplier is blurry. BEXIMCO contributed to create a brand (buyer) thus has a share on it. Tripty Project has a buyer role which is supported by special conditions offered by its partners PDAP and CDP. Aranya is the only one playing as a buyer which shed light on the fact that the capacity of the organizations itself determines its power of changing.

The results of case study 2 were perceived as more important to the sector since are threatening the trade possibilities. It proved that organizations wanting to compete in a global market will find the means to enable change. The pressure of reactive changes proved to have greater dimension regardless if there is existing support in place. Nonetheless other changes were mentioned

Results of both cases showed that ideally greater impact could be accomplished if interests of change are aligned with bigger buyers, who indeed have a greater capacity, thus a sort of power. The literature suggested that the main advantage of buyers is the marketing strategies that allow a closer relation to the consumers. The results of case study 1 proved that inexpensive marketing tools such social media are effective to target a defined audience such as the requested in a product based supply strategy, only if skills to use it are available.
6.2.2.2 Costs & Investments

The literature on costs suggested that the high costs of changing technologies to more environmental friendly options are highly expensive and can affect the competitiveness (Domina, 1997; Bair & Gereffi 2001; Seurign, 2008; WTO, 2010; WTO, 2003), further is suggested that national conditions such currency revaluation motivated the shift of production to countries such Bangladesh (Gereffi, 1999:48) suggesting that the preference is to keep costs low.

The results of case study 1 proved the assumption that costs and investments are a challenge for changing. In the case of ARANYA proved the existence of a change that could have been disruptive but managed correctly was an adaptive. As suggested by the literature (Singh, 1996), the conditions under which the investment were obtained are considered lethal for an organization. The merger with the Bengal foundation facilitated the expansion of dying and selling capacity. In case study 1 all organizational changes rely entirely on the acceptance of the consumers to the new price range product, which is not the case for organizations of case study 2.

The results of case study 2 shed light on the harsh conditions of obtaining funding under the financial system of Bangladesh. Commercial loans comprise interest rates of 11% to 18%. Small and Medium business may obtain special credits as well as women entrepreneurs only if complicated and long application process are fulfilled. Doubts about the impartiality of the financial system were expressed and worsen before the possibility of corruptive practices.

6.2.2.3 Business Model

The literature suggests that the global business model in place brings up distributive struggles (Selwyn, 2013; Welford, 2006) challenging a change of model that encompasses reduction of environmental degradation (Rehfeld, 2007:91) and benefiting workers (Rossi, 2013).

The results of both studies confirmed the assumption that the current business as usual model undermines the scope of action of organizations seeking to change. Moreover the results opened the possibility that different business models are possible. Case study 1 emphasized the pursue objective of encompassing social and environmental dimension, but from the information obtained in BEXIMCO and TRIPTY, at the moment it was not fully probed the betterment of workers besides the improved human capabilities. It is important to note that both changes have a lifetime between 3 – 2 years respectively. Only Aranya emphasized on benefits from wages trough the Fair Trade Organization.

All organizations of case study 1 rely on consumer’s preference of the product features offered. The studied strategies require a higher level of awareness and knowledge. The awareness built cannot be totally absorbed by the marketing capacity of the organizations. Organizations suggest that a real convergence towards sustainable consumption requires active involvement of educational systems.

The results of case study 2 confirmed the assumption. The strategy falls under the category of greening the supply process due to seeking improvement of working conditions. The social dimension is evidently addressed but lacks the environmental dimension.

6.2.3 SKILLS & CAPACITY

6.2.3.1 Job/Role Culture and Capacity Building

The role culture is dominated by the assumption that knowledge transfer to further develop capacities where manufacturers are allocated occurs with influence of buyers (Gereffi, 1999:38) and that organizations change towards their own product require high value activities such design, product development, marketing and quality control (Gibbon, 2001:347; Bair & Gereffi, 2001:1887).
All cases confirmed the assumption with evidence that changes requires intensive and extensive trainings. The possibility of upgrading to higher value activities such own brand production are constrained due to the capacity building capacity regarding the national educational system; the country conditions (mainly infrastructure) and the role culture. Trainings have becoming an imperative in organizations in all organizations. In all cases trainings have proofed to be consequence or have relation with spill-over effects of international intervention.

6.2.4 MENTAL MODELS
6.2.4.1 Cognitive
6.2.4.2 Emotional and Intentional
The literature suggest that mental models have a key role in any sort of change and are highly important for organizations due to the importance of the human capital (Cole, 2004). The dimensions to tackle issues originated on rooted assumptions comprise a cognitive, emotional and intentional dimensions (Armenakis,1993:685; Piderit, 2000:783)

The results of both case studies showed evidence that proved the assumptions proving the importance of creating readiness to change in all the aforementioned dimensions. The necessary key Information, learning and knowledge to promote meaningful changes was challenged by language barriers, trust, efficacy of the desired result and most important engrained social differences.

The results presented an interesting finding which showed that the efficacy of the desired result had a strong relation with the emotional dimension, connection that was not foreseen. The understanding of the message of change was challenged because the rationality was connected to an emotional dimension. The justification of the extra effort required in both changes was not fully understood by managers or workers because the motivation behind did not fulfill their expectations. Further research in this area will require the analysis of motivations for managers (i.e. tax exemptions) and workers (i.e. changes comprising a higher degree of Corporate Social Responsibility):

The emotional dimension proved fully the assumption of resistance rooted to feelings of distrust and fear, which were expressed from the relation manager- buyers and in the relationship between managers and workers. The emotional and intentional dimensions showed strong connection with cultural relations based on engrained social distinctions. Managers expressed feelings of superiority and opinions undermining workers.

6.2.5 COMMUNICATION
6.2.5.1 Shared Vision
The literature suggested the importance of building organizational identities to facilitate adaptability to changes (Easterby-Smith&Lyles, 2003; Carnall, 2006 & DeBrito et al.2008). In all cases it was claimed that internally a common shared vision was assured by the management strategies in place. In all organizations it was perceived that a common view as a sector, with the buyers is missing. Examples of efforts to build a common vision externally is claimed to need a transparent and coherent market. The need of coherence requires awareness at all levels, thus buyers and consumers can make compromises regarding the share on the waste is produced to satisfy the markets. The connection to the challenge with the current business model and the seek of profit and not common benefit was perceived.

From the point of view of workers (AWAJ) and supported by ARANYA and TRIPTY, factories are allocated where no infrastructure for housing is in place. This affects the living conditions of workers habiting in the vicinity. The salary perceived by workers is the minimum, thus commuting costs are not possible. Managers on the hand live in the urbanized area of Dhaka. Workers live in the vicinity but forming slums.

6.2.5.2 Bargaining Power
The literature suggested that there are no bargaining rights in place (Sellwyn 2013). The results confirmed that the presence of Trade Unions is minimal. The perception of Trade Unions is negative. The workers perspective questioned the possibility of assuring rights by alternative mechanisms. Workers recognized that discussing of salaries is important but there are also other ways of improving workers such as addressing living conditions. A direct improvement of urban conditions will improve their quality of life, it will be also be perceived as an improvement of salary. This requires an even higher level of participation and involvement. Both, managers and workers recognize that the government and international buyers should also be involved.

6.3 RESULTS THAT CONTRIBUTED TO EXISTING KNOWLEDGE

The results contribute to the problem identified in the following:

The results presented an interesting finding which showed that the efficacy of the desired result had a strong relation with the emotional dimension, connection that was not foresee. The understanding of the message of change was challenged because the rationality was connected to an emotional dimension. The justification of the extra effort required in both changes was not fully understood by managers or workers because the motivation behind did not fulfill their expectations. Further research in this area will require the analysis of motivations for managers (i.e.- tax exemptions) and workers (i.e.- changes comprising a higher degree of Corporate Social Responsibility)

The understanding of what each sector wants differs when referring to Corporate Social Responsibility for example. While the companies recognized as CSR childcare. The workers considered it as a minum legal requirement. But for example joint strategies for improving basic services as potable water and electricity as demanded by the workers and companies were still in process of being discussed.

Environmental innovative designs that considered the whole life cycle of the product and concerned as well of the production process proved to be an effective alternative responses to the waste generated on the manufacture of garments.

The Bangladeshi educational system plays a role in this matter. On one hand, there are only three institutions focused on fashion design. Even when the focus is towards quality control, the attention towards product engineering and creative design is turning on. This curricula has been introduced only 10 years ago. The institutions offering it are mainly privately funded thus in offer at a bigger expense. However, from the perspective of recently graduated the access to a job position is very limited. The exposure to practice is limited due to the preference of hiring foreign designers or practitioners. Nonetheless, slowly these areas are also been occupied by a growing pool of national Bangladeshis with international education.

7 Concluding Remarks
7.1.1 System Complexity

- In this study a number of different challenges for organisational change were identified. The challenges are highly complex and show interconnections among them, which are boosted by intrinsic conditions of the country and of the way of making business. Further, the scope of challenges vary regarding the size and capacity of response of each individual
organization. Managers perceived that the level of awareness and knowledge from consumers to boost a dramatic change encompassing the three dimensions of sustainability is still not representative.

- The most pressing challenge in all cases are the costs of change and capacity of investment. The proactive changes proved to be easier to encounter creative and dynamic responses to the challenges. The difficulty of creating a market and targeting an audience that accepts the changes on the product can escape until certain degree the scope of costs, but cannot escape the lack of skills that alternative responses require. Overall the development of changes by small and medium organizations relies heavily on foreign investors or financial support of non-governmental organizations. There is evidence that proves that reactive changes reach a wider dimension but the lack of effective communication channels brings a degree of resistance to change that questions the real impact of the change. The management strategies for reactive changes were not expressed as innovative but followed a usual top-down approach.

- There is not a common vision on the system besides agreement on the importance of the garment industry in the Bangladeshi functioning system, thus the importance on reminding competitive. Agreement that included workers. A common vision of sustainability in the sector is missing and its construction could potentially bring effective solutions to engage in further meaningful results.

- The learning organization provided useful criteria to understand the importance of fostering learning capacity at all organizational levels including the final consumer. The characteristics of the learning organization result effective to response to the challenges of change. Analysis revealed that for smaller organisations the management approaches encompassed human oriented management; collective and participatory planning and joint efforts to strength capacities.

- Future research is suggested to explore strategies and tools that could strength dialogue in the Bangladeshi garment industry including suppliers, buyers, workers and governmental institutions. Finally further research to understand the dilemma of possible motivations in the sector to truly change towards a sustainable production would ease the process of change towards more sustainability.
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Picture: Living Wages comparison:
9 ANEXES:

9.1 Case Study 1: BEXIMCO

9.2 Case Study 1: TRIPTY
9.3 Case Study 1: ARANYA
9.4 Case Study 2: Continental Garments Ind. (Pvt.) Ltd
9.5 Case Study 2: Knittex Industries Ltd.

9.6 Case Study 2: New Line Clothing Ltd.