DEVELOPING AN ENVIRONMENTAL CORPORATE STRATEGY

Case Study: G-Star Raw and Responsible Management

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Case Study: G-Star Raw and Responsible Management

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Preface

The reason for this report is a personal newfound awareness about environmental affects of the fashion industry as a result of the internship at TUBE, a company concerned with improving accessories design through solutions that respect the ecological development of the planet.

To deal first hand with these concerns, during the time at TUBE, led to the desire of deepening the knowledge and state of the industry in regards to its increasing environmental impact, sustainable solutions and how can other companies be helped further.

Researching for and elaborating this final graduation report was a gratifying and fulfilling experience, which would definitely not have been possible without the help, guidance and suggestions of the following: Patricia Brien, Stuart Su, Camilla Ericsson, Fabrice Justin, Amelia Gois, Paula Pontes, Zsarek Ailer and at last all of those who participated on the online survey.
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CHAPTER 1. INTRODUCTION

The purpose of this thesis is to develop an environmental corporate strategy using G-Star Raw as case study. More specifically, the main objective of the project is to formulate a corporate strategy that can be used by G-Star to become more environmentally sound and complement its current Corporate Social Responsibility (CSR) programme.

This strategy will present environmental objectives and the best practices to achieve them by suggesting practical steps and strategic solutions that can be implemented by any denim label that must integrate environmental decisions in daily operations and long-term planning.

Environmental impacts of the fashion industry are most related to polluting activities and the extensive use of resources and it is only recently with the widespread acceptance of the impact of climate change and global warming that the public has come to acknowledge how industrial processes are interfering with ecology in various degrees and effective action needs to be taken.

The goal of this report is to understand the environmental impact of the industry and provide a strategic/tactical implementation plan for jeans brands, in particular G-Star, to attend to ecological concerns but remain economically competitive. As G-Star, there are other major industry players that have not complied with the requisite of environmental sustainability and for those companies this thesis represents a valuable guideline and reference point.

This thesis is also meant to inform students, related professionals and the general public about the state of the clothing industry in regards to environmental stewardship and also organizations that provide assistance in dealing with environmental issues and what measures can be taken to manage and avoid negative impacts.

Concerns with social issues in the textile industry are not discussed as part of the strategic plan as well as specific financial outcomes deriving from the implementation of the strategy. The thesis will only focus in integrating product, planet and profit as nature and commerce must thrive and grow parallel.

The decision to use G-Star as a case study is a result, as mentioned earlier, from a lack of a comprehensive corporate responsibility programme focusing on the environment and also due to accusations made by the Clean Clothes Campaign (CCC), during 2006, that G-Star's producers do not properly respect labour laws and do not meet the brand’s standards. The attention put on this issue has alerted consumers and the market for G-Star's perhaps dubious actions and therefore requiring the brand to become more transparent and talk publicly about its business.
To accomplish the aim of this project the following research methodology is used: first, desk research in background studies and literature review in order to understand the complicacies with the definition of environmental sustainability in the clothing industry and denim sector, also the role of legislation, non-governmental organizations (NGOs) and the consumer; and then empirical research is accomplished by means of consumer based online questionnaires to recognize new consumer attitudes towards environmental issues and if it relates to shifts in buying behaviours; shop observations to experience how “eco-products” are being currently marketed and finally direct interviews with professionals within the sphere of sustainable fashion where different issues regarding the subject at hands were discussed.

Therefore it is important to mention that the intent of this report is not understand and improve social elements of management, or integrate people, planet and profit. Nevertheless, it is impossible to formulate a strategy concerned with environmental impact without the emergence of some type of social benefit.

In the realm of social conditions and fair labour practices there are organizations and multi-stakeholders initiatives that have started to tackle the social problems and networks have been created to help workers in different parts of the world to fight for their humanly rights. In what concerns the planet and the industrial damage being caused to it, the efforts are by far reaching the same results as in the social responsibility area. May this thesis help clarify fashion’s environmental problem and stimulate for the development of a better and more concerned industry with all its surroundings.
1.2 Problem Definition and Sub-questions

**Developing an environmental corporate strategy.**
*A case study on how G-Star can become greener in its business.*

*Note: The brand G-Star is only used as an example for any other fashion denim company that sees the need to care for the environment. This report is meant to help and guide on establishing an environmental policy.*

1. **Why are we concerned with the problems of the fashion industry?**
   (Chapter 2)
2. **What are the business models we can look at to clean fashion up?**
   (Chapter 3)
3. **What consumer’s trends of now must G-Star look at in order to avoid being pushed by bad PR?**
   (Chapter 4)
4. **What models of sustainability, in design, can G-Star look at?**
   (Chapter 5)
5. **How can G-Star use cotton differently?**
   (Chapter 6)
6. **Who should G-Star turn to when making the shift?**
   (Chapter 7)
7. **Fashion denim brands are already shifting practice, who should G-Star look to for inspiration?**
   (Chapter 8)
8. **How can G-Star denim story, with innovative design edge, become greener?**
   (Chapter 9)
9. **How does eco in mainstream brand shop floors looks like?**
   (Chapter 10)

Each sub-question is discussed in the end of the respective chapter by means of a critical summary/recommendations.
CHAPTER 2. ENVIRONMENTAL CONCERNS, INDUSTRY AND CLIMATE CHANGE

Why are we concerned with the problems of the fashion industry?

The fashion industry has several undesired impacts in the environment and it has only been recently with the changes observed in climate and global warming that these impacts have been strongly observed and taken into account. The extensive use of resources and mainly pollution resulting from different processes and systems in the fashion industry cannot but be linked with the environmental changes observed today and treated as one overall issue. This chapter makes the connection between global warming and industrial processes and how the recent focus in climate changes has brought attention to fashion’s environmental problems.

2.1 Changes in Climate Behaviour

The United Nations Intergovernmental Panel on Climate Change (IPCC), accepted as the leading organization on the overall impact of climate change, assures that the world must reverse the increase of greenhouse emissions into the atmosphere by 2020 to avert further disastrous environmental consequences. The destruction of the planet’s natural ecosystems, which work as a natural absorber for carbon emissions, is augmenting the discharge of greenhouse gases into the atmosphere resulting in unexpected and irreversible changes in climate behaviour witnessed already by many.

In February 2007, the IPCC published the fourth assessment report, elaborated by 388 experts and scientists, as a benchmarking report for policy makers. The summary is a follow up of the past 6 years of research by the IPCC, making use of more comprehensive findings and scientific research that led to a better understanding of essential data, processes and model simulation regarding climate change. The fourth IPCC report is focused on understanding the human and also natural factors influencing climate change and projecting future estimates of climate change. (IPCC, 2007)

The IPCC defines climate change as any alteration resulting from natural variability or human activity. It is the impact of human activity on ecology that the United Nations wants most to convey to governments and consumers.

Furthermore the report excels in proving how “changes in the atmospheric abundance of greenhouse gases and aerosols, in solar radiation and in land surface properties alter the energy balance of the climate system. These changes are expressed in terms of radiative forcing, which is used to compare how a range of human and natural factors drive warming or cooling influences on global climate”. (IPCC, 2007)

When it comes to the emission of greenhouse gases the IPCC exposes that since 1975 the presence of carbon dioxide, methane and nitrous oxide in the atmosphere have raised considerably, mainly as a consequence of human
activity. The escalating concentrations of carbon dioxide are attributed mainly to land-use change and fossil fuel, while agriculture is responsible for those of methane and nitrous dioxide. (IPCC, 2007)

Figure 1 shows how atmospheric concentrations of greenhouse gases go far beyond pre-industrial values determined from ice cores spanning many thousands of years. The larger panels represent ice-core data and the smaller insert panels the concentration of gases since 1975 where emissions have increased exaggeratedly comparing to ice-core data.

But threats coming from the emission of greenhouse gases go far beyond a rise in temperatures. The ICCP report (2007) expresses concerns with the increasing rate to which species are being extinct, (a hundred times faster than the rate in the fossil period); rapid rise of so-called dead zones, where marine life no longer can be supported, as a result of depletion of oxygen caused by pollutants as fertilizers and current changes in bio-diversity being the fastest in human history.

In the report “A New Sea” written by Dr. Rob Huebert (2008) and commissioned by the World Wild Funds International Arctic Programme, an analysis of the Arctic’s current state points to the inevitable alterations the Earth is suffering from displacement of climate’s natural order.

The ecological alterations that the Arctic is suffering are said to transform irreversibly, in a very near future, the home of the polar bear and walrus (see Figure 2) but also the life of 4 million people that live in the vicinity of the Arctic Ocean. The WWF report (Huebert, 2008) implies that global warming has instigated these alterations faster than they should occur. The result is an accelerated modification of crucial conditions of life in the Arctic regions in following decades.

Figure 1- Changes in atmospheric concentrations of carbon dioxide, methane and nitrous oxide. The data presented in the larger panels represents the concentrations in the last 10 000 years and the inside panels since 1975. The atmospheric samples are in red and the measurements from ice core have different colors to distinguish between studies. (Source: ICCP 4th Report, United Nations,2007)
The 2004 Arctic Climate Impact Assessment and more recent climate studies indicate that the alterations being felt in the region are due to global warming and are transforming “the fabric of the entire polar region” (Huebert, 2007).

It is in the Arctic Ocean that temperatures are rising more than in any other region of the planet, which means that ice is melting and disappearing, with some scientists predicting that by 2050 the region will be ice-free in summer (Huebert, 2007).

The most recent satellites study of the ice cover in the Arctic has found a 9% per decade loss of ice, instead of the 3% melt rate per decade thought to be since the 70’s.

These developments in the Arctic region are an example of how climate change and global warming represents a chain of linked events rather that isolated ones. Rising temperatures, caused by carbon dioxide emissions, melt ice packs, which will increase sea levels and obstruct the natural order and functioning of ecological systems.

Although global warming was identified almost a century ago, it is only very recently with the rapid rise of the sea level, erratic weather and devastating disasters like Hurricane Katrina, that became present in everyone’s mind the reality of this situation that can not go by unannounced, it is not anymore a mere forecast or prediction, the consequences of greenhouse gas emissions and worrying increases in average temperature are becoming visible and proving itself to be a concern difficult to overlook.

The consumer and the public in general is now, more than ever, aware of these problematic situations and can easily understand the link between the emission of greenhouse gases and erratic climate alterations. The current reality of global warming and the need for innovative environmental solutions in industrial processes and day-to-day life is an extensively explored topic in daily media. NGOs, high ranking political figures, like Mikhail Gorbachev for Louis Vuitton’s Climate Project (2008) and even celebrities from different artistic venues, as Andre Agassi, Catherine Deneuve, Keith Richards and Leonardo DiCaprio have taken a strong position in divulgating the current problems and alerting that actions needs to be taken now in order to avoid the detrimental affects of environmental degradation in our ecosystems.

Despite diverging and controversial opinions on the matter, the urgency of global warming and the need for action against climate change has gained huge momentum in 2007. First with the eye opener documentary entitled ‘An
Inconvenient Truth”, released in 2006 by the former Vice President Al Gore, which obtained an Academy Award and most importantly transpired to society a group of facts and scientific reasoning over the global warming issue. Second the award of the Nobel Peace Prize to the IPCC and consequently Mr. Gore, awoke in the minds of governments, industries and the public, even if political adversaries dismissed and labelled the conclusions over climate change as alarmist and exaggerated, for the need of environmental solutions and sustainable management of industries and consumption, it also made the consumer aware of how intense industries like fashion are on the environment.

2.2 Significance and Environmental Impact of Clothing Industry and Denim Sector

Since the previous year has been concerned with issues to do with the environment, overly talked about in debates, media and in conferences where world leaders meet, industries and companies start to be taken accountable for having or not green solutions to their business practices. Greenhouse gases emissions, pollution and untamed use of resources are responsible for the ecological changes that are being felt in the planet and they represent the by-product of many industrial sectors, including apparel and denim, on which this thesis is focused.

The clothing industry and denim sector, due to the growing importance of global warming, must look at its own ecological impacts and won’t be able to ignore them in the future, environmental issues are now bundled together because of global warming awareness and it is because of this that the fashion industry must change in order to become environmentally sound.

But environmental issues having been in business agendas since the last decade, despite media’s recently help to put the message across more effectively to the public, environmental management has been an increasingly important issue in contemporary business management, policymaking and strategic planning (Schaper, 2002). Many multinational companies and large corporations have already been stimulated, by legal and public pressure, to incorporate environmental goals into their corporate strategy, to publicize their actions and to contribute to the heightened awareness among all business of environmental issues (Kassinis, 2001).

Today, more than before, companies are facing pressure from local and national governments and the increasingly environmentally aware consumer (discussed in Chapter 4) to develop products/services/processes that respect nature and tackle environmental problems.

The textile and denim sector are one of those industries to be hold accountable due perhaps to its size or to its likeness of new products, delivered at a record time. The clothing and textile industry amounts to a worth over US$ 1 Trillion worldwide, it employs approximately 26 million people and contributes to 7% of world exports (Allwood et al., 2006). It consists of important profit stocks and development of many countries in the world, and partly of developing countries.
In the EU, 120,000 textile and clothing companies employ more than 2 million workers, accounting for 7% of the total manufacturing employees in the EU industry (European Commission, 2008). Looking at the denim sector in specific, the global jeans market at US dollar retail values has increased from US$50.5bn to US$51.6bn since 2004 until 2007, this represents a growth of US$1.1bn, an increase of 2.2% over this three-year period (Newbery, 2007).

Jeans consumption per person, in 2007, is said to have fallen 0.1 jeans (from 0.28 jeans per year to 0.27) per person per year primarily due to stagnating and aging populations of Western European countries. Furthermore, unit retail prices have also fallen by 1.3%, in 2007, driven downwards by low cost-country sourcing of both jeans and denim. (Newbery, 2007)

But in order to understand better the jeans market it is important to observe its major regional markets; Table 1 shows the relationship between jeans retail values and population.

<table>
<thead>
<tr>
<th>Population (m people)</th>
<th>North America</th>
<th>Western Europe</th>
<th>Japan and South Korea</th>
<th>Rest of the world</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail market (US$m)</td>
<td>17,988</td>
<td>17,010</td>
<td>8,737</td>
<td>7,888</td>
</tr>
<tr>
<td>Population (% of world)</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>86</td>
</tr>
<tr>
<td>Retail market (% of world)</td>
<td>35</td>
<td>33</td>
<td>17</td>
<td>15</td>
</tr>
</tbody>
</table>

*Note: data may not sum due to rounding*

Table 1- Jeans Retail Market and Population, 2007 (Source: Newbery, 2007)

As the table shows above, the main points to consider are that in 2007, 85% of the jeans retail value market (1% decrease since 2004) belongs to the developed countries with 14% of the world’s population, while the rest of the world registered 15% of the retail value market (1% rise since 2004) with 86% of the world’s population. (Newbery, 2007)

These differences between retail spending and population still exist but have been diminishing slowly. It is said that these disparities represent major concerns for the denim and jeans industries as the developing countries are forecast to counterbalance the growth in consumption in the future, representing how globalized the jeans market is becoming.

As an important and growing industry into new markets and opportunities, the apparel and denim sector has been responsibly for affecting the planet’s welfare almost since the beginning of the industrial revolution. Today it is easy to observe the untamed relationship between achieving higher productivity and the use of resources and pollution. Relying on powerful processes as logistical systems, the production of natural fibres like cotton, manufacturing and dying, to name a few, the apparel sector seems to heavily participate in the shrinking of the earth natural resources and contribute to undesired ecological impacts.
Shown below in Figure 3, are the environmental and also social impacts of the industry at the generalised stages of a normal garment.

The outstanding issues are the use of elevated amounts chemicals and pesticides and high quantity of water in harvesting cotton, production and usage of garments. Transportation is responsible for emissions of Co2, which are inevitably whether by plain or boat. Transportation by sea is considered to be less pollutant though, as transporting 1 tonne of goods over a distance of 100km emits 0.7kg of Co2 by ship compared to 158.0 kg by airplane (Defra, 2007), hence some brands’ adherence to the latter as an option to reduce emissions.

Social and also economic impacts are considered in Figure 3, due to the fact that adherence to sustainable solutions might also result in financial gains for companies, brands and workers and health benefits to those who are directly affected by fashion’s current unsustainability (mainly work force during manufacturing and production processes).

In order to present a sound environmental strategy, the key issues in ecological impact by the apparel and denim sector need to be clearly defined. The main concerns to retain are:

**Cotton Production**
The traditional cotton harvest (10% of the world’s agriculture) and its fibre production entail the heavy use of pesticides (25% of the world’s total)(Hamnett, 2007), fertilizers and other non-regulated substances that damage the environment and the health of workers. But also the total life cycle of cotton that demands high amounts of water and energy and ends up in landfill or incineration, is not sustainable by far. The production of cotton and its impact is explained further in Chapter 6.
Use of Chemicals
There are several chemicals, fertilizer and materials used in different intensive processes like bleaching, washing and dyeing that are toxic, damage soil conditions, water quality and biodiversity. Water and energy consumption in pre-treatments and finishing processes and unprocessed waste generated by factory plants also represents a critical area. It is said that about one half of the world’s waste problems are related to the production of textile goods (McDonough, 2002).

Animal Welfare
During the production of wool, leather and even silk, animal welfare must be assured and regulated. The problems are related to catching, breeding, transportation and living conditions of animals used in the fashion industry.

Transportation
With complex supply chains and steps in the industry, the transportation of fabrics and clothing around the globe by suppliers and brands, result in soaring Co2 emissions due mainly to outsourced production in distant developing economies.

Clothing Maintenance
When consumers wash and dry garments significant amounts of water, detergent and energy are used, impacting the environment with Co2 emissions and contributing for climate change. Around 80% of garments carbon footprint, depending on the fabric, is generated from clothing maintenance and care (Collins, 2002).

Disposal
The end of the life cycle of a garment is in most cases landfill sites or incinerated, the issues are with oil based fabrics like polyester that take a long time to decompose. With the unprecedented growth of fashion consumption, numerous amounts of clothing lay decomposing contributing for fashion’s growing carbon footprint and pollution.

It is difficult to separate the clothing industry from the denim sector in regards to its environmental impact. The key issues above are generalized for the industry as a whole, jeans productions also entails the same problems related to finishing processes, washes and aesthetic treatments mainly linked with the use of chemicals during production and many factories that produce jeans also produce other garment styles.

The primordial problem with the environmental impact of the denim sector lies with the extensive demand and use of the cotton fibre, pollution and wide use of resources, but still all of its impacts are covered in the issues presented and those are the points that must be analysed and taken into account by apparel, textile and denim companies when considering environmental management and diminishment of negative ecological impact.
2.3 Summary

As explained in the beginning of the chapter, important bodies of research like the IPCC, other NGOs and independent figures have effectively put across the urgency of action that needs to be taken to counterbalance these ecologically negative results of uncontrolled industrial models and processes.

To become “green” or sustainable is a concept that now, the consumer identifies as a direct approach to combat environmental damage, it does not represent the same apprehension that flourished in the beginning of the 90s, where environmental concerns were based on relatively small groups of individuals, identified almost as anti-industrial and anti-capitalistic, pushing products that were discredited due to poor design and lack of aesthetic value. Perhaps the message then was not transmitted effectively or the effects of global warming were not felt as vividly as currently.

We are currently concerned with the problems of the fashion industry because climate change focus has brought much awareness to fashion’s own ecological problems, it is because of this awareness that action is necessary and attention put out in industries that are considered critical. The clothing sector as been looked at because its own processes cause much pollution and resource use. Society became aware of environmental problems and fashion has been taken in the array of problems and is expected to take on a proactive attitude.
CHAPTER 3.

THE FASHION INDUSTRY AND SUSTAINABLE BUSINESS MODELS

What are the business models we can look at to clean fashion up?

As the previous chapter illustrated the necessity of embracing sustainable solutions and processes, it is important to understand the definition of sustainability, its different interpretations and what it entails. The present chapter discusses this definition and also how major key industry players have taken sustainable business models into corporate rooms and what results have been achieved. There are important companies and brands that are trying to pioneer the environmental sustainability of fashion, and those companies are important for G-Star to observe and learn from them.

Those who have not thought of environmental management of some order can no longer ignore this situation, as social and governmental pressure increases. To embrace sustainable solutions is a process that gives rise to some complicacies due the complexity and globalization of supply chains in fashion industry, proving difficult to focus in specific issues and are those complicacies that this thesis wants to alert to by exposing the effectiveness of sustainable business models so far.

3.1 Definition of Sustainability

Sustainability has been the agenda of industries and some fashion companies for some time now. The search for sustainability that was initiated in the late 70s and early 80s is concerned with the different problems that arise from the modern industrial crisis. One of the most important is considered to be: the depletion of natural life support systems to an alarming level and the incapacity of the industrial system to correct this depletion. The modern industrial crisis undermines natural life support systems, which leads to the loss of ecosystems, biodiversity and environmental stability.

The awareness of the magnitude of destruction has compelled the critical examination of the definition, meaning and constituents of 'sustainability'.

In the report entitled Sustainable Production and Consumption: A Business Perspective, published in 1996, by the World Business Council for Sustainable Development (WBCSD), sustainable production and consumption is defined as ‘involving business, government, communities and households contributing to environmental quality through the efficient production and use of natural resources, the minimization of wastes and optimization of products and services’. (WBCSD Policy Statement, 1995)

The pursuit of sustainability involves a search for a production process that is based on understanding nature as a system of limits and possibilities, of growth and regeneration. Further, this pursuit should enhance and revitalize life support systems in a human scale. Accordingly sustainability is any process that can be maintained indeterminately and in its environmental usage, relates to the ability
of sustaining current and future ecological balance. Nevertheless the definition of sustainable development seems to encompass many factors and perspectives on environmental, social and economic issues. The United Nations NGO Committee on Sustainable Development (UNNGOCSD) accepts the Brundtland Commission’s definition of sustainability, which was adopted by the Rio Conference, 1992. This definition of sustainability, agreed in 1987 by the Brundtland Commission, generalizes sustainable development as:

“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. (UNNGOCSD, 2008)

Furthermore, the ‘Declaration of Rio On Environment and Development’, 1992 identified that sustainable development ‘was a balance of three dimensions: environmental protection, economic growth and social development’. (UNNGOCSD, 2008)

The diagram on the right, adopted by the Rio Conference, 1992, exemplifies this theory.

As the diagram demonstrates sustainable development can only be considered if the process is economically and environmentally friendly and when everyone in such a society is ensured a livelihood. The processes are interconnected and the definition goes beyond sole environmental concerns.

3.2 Problem Definition for Businesses

Most large firms are aware of their effects on the environment and often seem to have the resources to implement environmental management, which is defined as management of those activities of a firm that have or can have an impact on the environment (Starkey, 1998). However, many smaller fashion companies are often unaware of environmental impact and lack the resources to implement environmental initiatives (Biondi et al., 2000; de Bruijn, 2000; Friedman et al., 2000), the majority of which seem to have been designed for large companies and lack information for the fashion industry in general.

Researchers such as Hutchinson (1998), Merritt (1998) and Anglada (2000) have shown earlier that many company owner/managers have a high awareness of their role in environmental remediation, and have a strong desire to actively do something. However, most studies have reported that there is often a great
deal of difference between the stated attitude of owner/managers and the actual environmental performance of their firms.

Developing vague codes of conduct or collections marketed, as ‘green’ or ‘eco’ tend to further confuse the consumer and cannot be considered as sustainable development or efforts to manage environmental impact. Frequently, statements in codes of conduct cannot be properly checked and are not explanatory enough. Temporary solutions are not sustainable as far as future livelihoods of natural systems and do no offer the sufficient transparency to stakeholders and consumers.

Furthermore, often businesses use the triple bottom line as a tool to integrate sustainability into business agenda, but focusing only in people, environment and economic concerns might create difficulties in pursuing different design opportunities that go beyond ‘end-of-pipe’ initiatives.

Thus, the fashion industry requires assistance and guidance to find ways to improve its sustainable environmental performance and activeness and on which issues to focus efforts. Some initiatives have been developed involving government assistance, consultants and environmental organizations, as a way to stimulate environmental action.

The use of environmental management systems (EMS) as ISO 140001 that provide a framework against which organizations can be certified, is considered to be rather effective in stimulating environmental management. This type of standard is only concerned with the impact that arises from production and not the later stages of product usage. But other than large firms with comprehensive plans, explained later, not much action has been taken by other companies to encourage effective and transparent improvement in their environmental performance.

### 3.3 Sustainable Business Models

As mentioned, pressure on businesses regarding environmental issues has been increasing, and it is becoming clear that the demands placed on business to improve environmental practices will continue to grow and have an influence on how companies operate (Kassinis, 2001; Greenan et al., 1997). Instead of viewing these demands as a threat, it is thought that businesses should seize the opportunity to improve their environmental performance. It is anticipated that those organizations which respond to this challenge, will reap the rewards of a competitive edge over rivals who fail to recognize environmental issues. “Hence not only is it ethical for a company to improve its environmental performance, but it may also be sound business practice” (Greenan et al., 1997).

A sustainable business model in the fashion and clothing industry requires the inclusion of environmental criteria into purchasing policies, efficient product design and the promotion of a more sustainable consumption by using effective communication and marketing about product information.
Important retailers as Marks & Spencer and lifestyle sport brands as Nike have paved the way to other companies when it comes to environmental initiatives. Their strategy and actions prove that it is possible to start to tackle the eminent problems and gain important results and advantages, directly connected with diminishing and avoiding future environmental impacts of the clothing industry but also obtaining competitive advantage.

**MARKS & SPENCER: 5 Years Plan To Make Sustainability In The Present and Future.**

The company was established in the UK in 1884, the headquarters are in London and it has 702 stores around the world with 75,500 employees. Marks & Spencer (M&S) does not only sell clothing but also carries food and home products. Clothing makes up for 50% of the group’s turnover, set around USD$ 15.5bn, while food makes up for 45% (Textiles, 2007).

Last January 2007, M&S announced its business-wide environmental plan. ‘Plan A’ as it is named is said to cost the retailer USD$390m and will impact in the next five years all of its business operations.

M&S made the commitment that by 2012 it will (Textiles, 2007):

- Set improved standards in ethical trading
- Expand sustainable sourcing
- Become carbon neutral
- Dispatch no waste to landfill
- Help and guide staff and consumers on how to live a healthier lifestyle.

‘Plan A’ is made up of 100 points and guidelines concerning five major areas, climate change; waste; raw materials; fair partner; and healthy eating. The eco-plan is supposed to irreversibly change the way the company does business.

In an interview for the Textiles Magazine (2007), M&S’s Chief Executive, Stuart Rose has said that, “*Every business and individual needs to do their bit to tackle the enormous challenges of climate change and waste. While continuing to sell great quality, stylish and innovative products, our costumers, employees and shareholders now expect us to take bold steps and do business differently and responsibly. We believe a responsible business can be a profitable business*” (Rose, 2007).

With Plan A, M&S is committed to improve business operations combining sustainable practices with both positive and negative aspects of global corporate sourcing. More specifically, the commitments in the most relevant areas are (Textiles, 2007):
Climate Change

- All operations in the UK and North Ireland are to be carbon neutral, accomplished by reducing energy use and maximising the use of renewables. M&S expects, with this, to cut Co2 emissions by 80%. Since suppliers and consumers cause significant amounts of emissions, the plan also intends to inform and guide them to reduce their carbon footprint.
- Stores will be powered with ‘green’ renewable energy, making M&S 25% more energy efficient. This is also accomplished by creating renewable energy generated by waste from M&S food halls, farms and factories.
- Carbon offsetting is only to be used as a last resort and all lorries are to run in 50% bio-diesel.

Waste

- Stop sending waste from factories, stores and warehouses to landfill
- Developing alternative ways for clothing disposal, as donation, composting and recycling.
- Reduction of packaging and carrier bags. Packaging material is to be sourced from sustainable or recycled supplies (cardboard, metal, glass) but still M&S plans to reduce packaging by 25%.
- Restrictions on packaging materials and focusing on materials that are easy to recycle, so consumers do not dispose of them. This includes using four types of plastic (corn starch derived plastic PLA, PP, PET and PE). With it M&S hopes to use a ‘closed loop’ whenever possible.

Raw Materials

- Ensuring raw materials come from sustainable sources
- Expanding the organic cotton ranges, that started with baby clothing
- Working with cotton producers to ensure that more fairtrade and organic fibres become available every year.
- Using recycled plastic, like bottles, instead of oil to produce polyester for clothing and home products. The first products in store are recycled fleece tops for men, said to be expanded to include women’s and children’s fleece clothing and later on to include trousers, suits and furniture.
- Assuring animal welfare by only using leather and wool derived from sources that respect independent standards.

Suppliers

- Helping suppliers to ensure ethical and sustainable production and to meet M&S improved environmental standards.
- Stimulating innovation and help suppliers to secure funds for investment in sustainable production processes, workforces and local communities.

With Plan A, M&S is taking bold steps that target environmental impact but also social aspects of its business, the plan goes beyond a mere development of a CSR strategy or department or introducing an organic collection. The steps are taken to ensure the future sustainability of all its processes, starting at the manufacturing and supplier level. The commitment made by M&S for the next five years and beyond, targets the complex supply chain and the company knows that it is necessary to raise awareness from suppliers, consumers and other
brands but also supply the tools in order to ensure that environmental challenges can be met.

NIKE: Using “Cradle to Cradle” As An Inspiration For Policy.

The American sports brand was one of the most targeted companies in the 90s concerning CSR practices, labour conditions and overall ethical business processes. It can be said that Nike had to respond to these problems in order to keep its market share and brand value, but certainly the efforts made in the last decade seem to have paid off and the actions taken towards environmental and social concerns can be looked at by other companies in order to analyse how a key industry player took the problems and turn them into advantages.

Nike has one of the most comprehensive CSR programmes in the fashion industry with specific departments that attend to the entirety of the company’s CSR concerns. The CSR programme has extended beyond a tool to define problems that need solutions or to become less ‘bad’. Nike sees its corporate responsibility as a source of innovation within the company. Nike’s goals are to change the conditions in the supply chain, contract factories and local communities where the company operates. The areas Nike is focused on are (Nike CSR Report, 2006):

1. Reduction of global environmental impact thru sustainable product and supply chain innovation, in direct operations and contracted factories
2. Improvement of working conditions in the contract factories
3. Using the brand to give access to excluded communities to the benefits of sport.

Nike’s exploration of sustainable development originated with small a group of managers and designers that started asking questions about the long-term environmental impacts of the company. While studying the possible solutions, Nike’s managers analysed different emerging theories of sustainability and finally based their efforts on the cradle-to-cradle thinking (explained further in Chapter 5). This means that environmental impact does not represent a threat but an opportunity for innovation and modernization as cradle-to-cradle thinking conjectures that intelligent design can eliminate the concept of waste, therefore eradicating the divergence between nature and commerce.

The company’s first steps to achieve a sustainable business model were to make a commitment into ecologically intelligent design. Together with McDonough Braungart Design Chemistry (MBCD), Nike started material assessments in order to determine chemical composition and environmental impact of materials and manufacturing processes used in the production of athletic shoes. A list of positive materials that respect the company’s emerging criteria for sustainable design was then developed.

By 2020 Nike aims to (McDonough, 2002):

“Eliminate the concept of waste in product design, using materials, energy and resources that can be easily recycled, renewed or reabsorbed back into nature.
“Eliminate all substances that are known or suspected to be harmful to human health or the health of natural systems.

“Close the loop and take full responsibility for its products at all stages and process lifecycle, including disposal by consumer.

Nike also realizes the environmental impact of cotton production and as a response plans to use a minimum of 5% organic cotton in all cotton apparel by 2010.

Nike has publicly made aware its effort towards sustainable methods and is one of the only companies using multi-stakeholder partnerships to ensure a public and transparent strategy that uses NGOs, activists, and governments to change its business model.

HEMA: A Dutch Example of Sustainability

The Dutch company is a very positive example for many business, having a strong design edge in its products and value for many, the company has started for a few years to include organic cotton in its baby clothing and also work on other organic collections for home products. Hema shows how the Dutch market has already started to go green and cares about the consumers demand for eco products.

The strategy is to keep prices at the same level of other products and slowly introduce sustainable materials in its design and products. Hema claims to test all its products’ eco friendliness according to company standards and measures are taken to diminish environmental impact.

2.3 Summary/Recommendations

Companies small or big, face many challenges in elevating their business into a more sustainable practice. The solutions that are present can be overwhelming as many managers think primarily of related costs and how complicated the steps to reduce or better eliminate environmental impact are. Nike, M&S and Hema are positive examples how the environmental issues can be turned into innovative and competitive solutions that represent long-term benefits. These are the business models we can observe and learn from in order to clean fashion up.

It is very important for G-Star to look at the basic models of Nike, M&S and Hema to take inspiration from and work out its own best policy to clean up fashion. If Dutch companies like Hema have already started to go green and other small businesses are doing it there is no reason for G-Star to resist this market tendency. It is advisable for G-Star to carefully analyse M&S’s 5 years plan and develop its own environmental plan with a specific time target and environmental objectives. From Nike, G-Star must retain how the design process is an important and fundamental aspect to instigate sustainability and to become greener.
CHAPTER 4. SUSTAINABILITY AND CONSUMER TRENDS

G-Star will be pushed by bad PR if they don’t take in account the consumer trends of now. Here they are below.

The increasingly aware consumer holds the power of purchase and ultimately can positively influence the changes that are needed in the clothing industry to clean up its act. This chapter looks at the consumer behaviour and trends and how those factors represent an important push for the fashion industry.

4.1 Evolution of Consumer Trends

The fast-fashion trends, observed in the last years, where consumers looked for stylish clothing at a cheap price with questionable quality are coming progressively to an end as more and more consumers are aware of the environmental impacts of the clothing industry. For that reason many branded faces have already adhered to leaner, cleaner and greener business models.

In the past, ecological trends in fashion did not succeed because consumers were not properly informed of the options and the products that were being pushed were expensive, lacked in design quality and overall value.

Today the new conscious consumer is asking new important questions, the group of consumers that represented a niche market before, is becoming increasingly important in the fashion and clothing industry and demanding a lot of transparency. With untamed access to information and many groups alerting for the environmental conditions in which clothing is produced, companies can no longer ignore consumer pressure to become sustainable.

The trend-conscious, demanding consumers want change in the clothing industry, environmental impact reduced and availability of products that are innovative and attend to those concerns. The culture of fast/ disposable fashion, aided by celebrities and chain stores like Primark and H&M is slowly being eradicated. Many consumers are now actively trying to “greenify” their lives, because they realize the problems with ecological degradation and pollution, arise from unsustainable industrial processes in clothing production and not only.

4.2 Buying Behaviours

The sale of organic products has suffered a considerable rise in the last two years and also many new developments in the car and food industry confirm how conscious the consumer is becoming in different industrial segments. American Express has performed a study to understand how the boom in organic products is developing in the luxury segment. In its ‘21st Centurion Report’, published in 2006, the organization concludes that consumers aren’t just buying a new product; they are buying a whole set of values. Furthermore, the report explains that luxury consumers are interested in pursuing a healthy lifestyle while minimising their ecological footprint, in food habits, fashion, furniture and travelling. The conscious consumer seeks brand that show sustainable concerns
throughout the supply chain, whether is through sourcing sustainable materials, contributing for the livelihood of local communities or ensuring diminishment of ecological impacts (American Express, 2006)

The consumers ultimately hold the power to drive sustainability into fashion as it is happening already in other industries. Still price is one of the strongest key differentiator; the new consumer is evidently looking to purchases that reflect a new consumption attitude and that goes beyond any hype. It represents a long-term trend, as more pressure is put on environmental damage, climate change and carbon emissions.

“The group of consumers that want to know how and where their products are produced is getting bigger and bigger. We are now past the hype. You read about it everywhere. The consumer awareness has to do with consumer groups involved, which there is many concerned with ethical and environmental issues in fashion and also to do with the easiness of getting hold of good information about it”(Daavelar, 2008).

For this project an online questionnaire was elaborated in order to find out the most relevant opinions consumers have regarding fashion’s environmental impact an the willingness to buy products that respect ecology. The most prominent findings of the research are that consumers are now aware of fashion’s ecological impact and are starting to taken that into purchasing decisions. The majority of the respondents (63.5%) are very interested in clothing that is produced in an environmentally friendly manner and willing to purchase it. Answers also showed that if the design and quality of the eco products were justified the consumer would also pay more for that added value.

4.3 Summary/Recommendations

The results of the questionnaire, to be found in Chapter 10, really come to show why companies like M&S, Nike and Hema have all take steps to diminish its ecological footprint, it is because the consumer is demanding it and willing to pay for a good quality, design eco-product. The growing trend of the conscious consumer, observed in the result of the questionnaire, is a reason why jeans companies and other have changed their business models to greener versions, as presented in the earlier chapters of this project.

If G-Star doesn’t observe the consumer trends of now, they will suffer even worse PR because the consumers’ wishes are not catered for. Like the companies mentioned, it is important for G-Star to move with what is happening, with the consumer base and attend to these needs. Competitors are doing it; consumers are demanding it, G-Star can only but start now.
Companies have only two options when it comes to their footprint on ecology. One is to analyse their situation and take a proactive attitude concerning environmental stewardship and the other to simply ignore the situation. For those companies that want understand the environmental significance of clothing industry there are already design theories that can help in developing better design systems. The present chapter deals with models of sustainability in design, by analysing the Cradle-to-Cradle design theory and further more the important role of fashion designers in environmental issues.

5.1 Cradle-To-Cradle Theories

The 25-year discussion of environmental issues founded by Rachel Carson’s “Silent Spring” has contributed to the development of ideologies about product design and materials that want to combat a legacy of toxic materials and come to revolutionise industrial processes. Cradle-to-Cradle is an out-of-the-box, new form of thinking that looks at the concept of waste as it is in nature: non-existent. For William McDonough and Michael Braungart, the authors, waste can only but represent and advantage for product design.

According to Braungart and McDonough (2002), product design must begin with a careful analysis of healthful ingredients, which can be continuously used, reclaimed and reused in high-quality products. Hence, starting design at ‘molecular level’ is the solution. When design happens at this level, synthetic products can be created as technical nutrients, meaning that they can, after disposal, be returned to industrial systems without causing any harmful effects. The natural materials, or from natural ingredients can be conceived as biological nutrients and therefore be returned to the earth.

These two concepts of technical and biological nutrients is the main foundation of cradle-to-cradle thinking where waste equals food. Textiles companies and products like Nike’s biodegradable soles have, already applied this new effective recycling of the future. It represents a new industrial philosophy that eliminates toxic elements in the materials flow, also by designing ecologically safe products it triggers added value and avoids environmental impacts and health concerns for workers.

5.2 The Importance Of Design In Sustainable Business Models

For a company in pursuit of sustainable development, ecologically intelligent design ought to happen at all business levels, a product is not environmentally safe if it comes from a polluting factory or if it is distributed through warehouses where energy efficiency is overlooked. Managers and industry professionals must look at they way the supply chain is structured and how it can be improved, despite its complexity. Also clothing design in fashion is one of the main processes where attending to environmental concerns and awareness must start.
Sustainable business models in fashion have as crucial players the designers. The role of the fashion designer and also buyer cannot be overlooked, within developing new models. Their power can have more positive results than politicians, business managers and even environmental activists. If a designer or buyer adheres to positive environmental design and products, the market can suffer benevolent alterations that have an effect on businesses (Fuad- Luke, 2002):

- Less is spent on raw materials and production, resulting in better profits for companies.
- Consumers have more efficient, better-value products.
- Governments spend less on regulatory enforcement.
- Improved environment and quality of life.

The choices a designer or buyer makes when selecting new environmentally friendly materials or products, have a powerful effect on companies and markets, they a have bigger role in pushing sustainable development than the responsible consumer because the products they select will effect the market in general. Even if environmental concerns are perceived as hype or short-term trend, designers/ buyers that attend to these concerns will make environmental stewardship an elementary part of production and not a response to a trend or hype.

Once designers/buyers are concerned with the environmental impact of fashion and make it part of their work, this is also likely to influence manufacturers and producers to develop environmentally friendly production.

Figure 5- Old Design Model (Source: Guidelines, Dahl, 2002)  

Figure 6- New Design Model (Source: Guidelines, Dahl, 2002)
Fig. 5 (Old Model) and Fig. 6 (New Model) are charts developed by Environmental Resources Management and the designer Lynda Grose (Dahl et al., 2002) that exemplify the current design model and how this can be taken further into a new design model.

The old model shows that designers/buyers are not making use or looking for information about the way the fabrics and garments they select are being produced. Production is therefore not included in their field of work. The designers/buyers only look at trends regarding colours, fabrics, cuts and sales possibility (Dahl et al., 2002).

In the new design model, the awareness of production methods takes as much emphasis as shifts in cultural trends. It is the designers’ responsibility to take these issues into account in sustainable development. This notion of responsibility is fundamental for the new shift of encompassing environmental concerns into designing and buying.

5.3 Designing Legendary Jeans That Remain Legendary.

The shift in the design model, mentioned earlier, is an important factor for the successful development of a sustainable business model. By starting awareness at the design level, this can generate further developments in sustainable production. The role of the fashion designer is quite important in this whole process, to change the model in Fig. 5, it requires much information and willingness.

Many fashion designers can feel overwhelmed by the scope of action needed to change a system on practice since the industrial revolution, but it is the designer that has the power to translate sustainable ideologies together with trends and cultural and economic movements into new ideas and therefore products that last, are attractive to consumer and therefore not disposed easily.

The confusion that environmental impacts in fashion can generate comes from the lack of resources and knowledge. Fashion designers that want to take sustainable principles into their sketchbooks and design plans may face hostility within their companies since cost is one of the main driving factors and many companies are financially weary of starting sustainable processes if their competitors have not. But if designers understand the current situation, then disadvantages can be turn into profitability and better achievements at an environmental, social and economical level making sustainability become integral to good design. Businesses can only change with designers’ help. An e.g. is the British designer Stella McCartney, in the high-fashion segment, that together with the French luxury group PPR, has set up a sustainable laboratory near Paris to manufacture organic skin care products for the Stella McCartney brand.

There are already tools in place that can help designers to meet these challenges. Many organizations, groups and institutions, discussed further in Chapter 7, can
offer guidance and support when it comes to options available and steps that can be taken regarding sustainable fibres, chemicals processes and so on.

G-Star’s philosophy has always be related to “Raw”, “Industrial” products that are connected with the ideas of strong and long lasting designs, it can be considered the essence of “Slow “ fashion. The designs are related more with style and durability than trends and transient fashion. It is important for G-Star to include sustainability in design and to continue this legacy of raw and strong products. Designing legendary jeans that are never going out of style, that remain legendary.

5.4 Summary/Recommendations

G-star must keep up designing jeans with emphasis on design, like they have done until now. Good sustainable designs, means that jeans are not outdated easily and that the consumer will keep them for longer and feel an extra value to the purchase and therefore the price can also be higher as it is a product for the conscious consumer and from the “Slow” fashion movement. The product is more about style, quality and less about temporary fashion and trends

G-Star's fashion designers and buyers are significant players in bringing sustainability into design and consequently into the company’s concept of business. G-Star needs to think about these approaches of sustainability and models in the design department and designers must put forward the ideology of a new sustainable design model. This will make the company more than a simple jeans brand, it will take the business to a different level of achievement and also if awareness starts with designer/buyers, this can create pressure for producers and manufactures to attend to environmental concerns in production processes. Whereas the consumer has the power to demand environmentally responsible products, designers have the opportunity to push these demands into the whole of the supply chain.
CHAPTER 6. THE PRODUCTION OF NATURAL FIBRES: THE COTTON CASE

Cotton is the base of denim; denim is the base of G-Star. How can G-Star use cotton differently?

Chapter 6 is concerned with cotton, which is by far the most used fibre in the clothing and denim industry. The prolific use of this natural fibre is responsible for the majority of undesired environmental impacts of the industry. This chapter exposes its use in the denim industry, how G-Star can optimize its use, the difference between normal, organic, and genetically modified cotton crops and other alternative fibres.

6.1 Overview and Facts

According to Textiles Intelligence Outlook International (Global Trends in Fibre Prices, Production and Consumption) published in Issue 131, September-October 2007, world fibre production grew by 4.3 % in 2006/07, as a result from a 5.0% increase in the cotton fibre demand.

<table>
<thead>
<tr>
<th>World Cotton Balance Sheet</th>
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</thead>
<tbody>
<tr>
<td>(Millions of 480-lb. bales)</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Production</td>
</tr>
<tr>
<td>Supply</td>
</tr>
<tr>
<td>Consumption</td>
</tr>
<tr>
<td>China</td>
</tr>
<tr>
<td>Non-China</td>
</tr>
</tbody>
</table>

Table 2 - World Cotton Balance Sheet
(Source: http://www.cottoninc.com/MarketInformation/MonthlyEconomicLetter/)

Table 2, above, shows how the world production of cotton has been rising considerably as a result of growing consumption in China. When comparing the increase in consumption in China with other countries (Non-China), the growth is far more steady in China the last 6 years, accounting for a rise of 25.6 millions of 480-lb.bales, whereas in other countries there was a considerably low rise of 4.5 millions of 480-lb.bales, since 2002.

This can be attributed to the growing number of companies outsourcing In China making cotton consumption levels increase without precedents and consequently augmenting its environmental impact. These changes are also supposed to reduce the cotton-harvested area in the USA by 15% in2008/09.China and USA remain the world’s major producers of cotton; while India, the African Franc Zone, Australia and Brazil are expected to register considerable increases in cotton production for the next years. Pakistan, Turkey and Uzbekistan are projected to maintain production levels. (Secretariat of the International Cotton Advisory Commitee, April 1, 2008).
6.2 The Denim Industry

The current progresses in the denim industry contribute widely for the demand of the cotton fibre. According to the Apparel Search Company, denim is a “rugged cotton twill textile”. Jeans are made of denim, which is a construction of cotton fabric made from a yarn dyed warp and an undyed weft yarn. Traditionally the warp is indigo dyed, now in the synthetic format since natural blue dyes are rare.

Customarily, processing and finishing denim is a multi-stage process consisting of dyeing to modify the shade of the fabric, using enzymes for a faded look, bleaching to achieve contrasts, and then treating the fabric with chemicals or softeners. Many of the chemicals and dyes used in the production of denim are believed to have an adverse effect on the environment and the human health and uses high amounts of water that remain untreated.

Natural fibres like cotton are usually bleached before dyed, using chlorine-containing bleaching aids that contribute for high-chlorine content in wastewater, making it hard to purify.

6.3 Environmental Impacts of Non-Organic Crops vs. Organic Crops

Companies’ commitment to sustainable development must go beyond the differences between organic and conventional cotton production, it requires an analysis of practices and operations along the complex supply chain, nevertheless, it is important to grasp the differences between the two ways of producing the most sought after fibre in the fashion industry.

Conventional cotton production is present in 60 countries and covers 5% of all cultivated land (Step, 2008). The traditional production uses significant amounts of pesticides, sprayed over the crops to protect it, which causes serious health problems to workers because of their high toxicity and is responsible for soil degradation. In producing countries synthetic insecticides are connected with large-scale poisoning and consequently deaths in developing countries.

According to the World Health Organization, 20,000 people die every year of pesticide poisoning from conventional cotton farming and a further 1,000,000 people a year suffer from long-term pesticide poisoning (Smith, 2000).

Water consumption is the other major environmental impact together with soil degradation. The actual water consumption is in the range of 7,000 to 29,000 liters per kg of cotton fibers. This is at least 20 times higher than the amount of water used in the subsequent production of textile products (e.g. dyeing and finishing) (Hamnett, 2007). Other associated impacts are elevated emissions of GHG from the use of chemical fertilizers, desertification, long-term contamination of water supplies (Hamnett, 2007) and loss of biodiversity.

Organic cotton crops are grown without any use of synthetic fertilizers or pesticides and defoliated by natural means. It uses natural pest killers as benign insects and ‘trap crops’, to diminish the presence of destructive insects. Because
of this, organic cotton seems to be accepted as the main alternative to conventional cotton but it still only accounts for less than 1% of the world’s cotton usage and is at present more expensive than conventional cotton, but if demand rises this might change in the future.

There is much debate about the differences in growing cotton conventionally and organically. Organic crops yields are about 14% lower than conventional but production costs seems to be reduced due to use of organic fertilizers (Brown, 2007), still some researchers defend that in order to harvest the same amount of cotton as a conventional field almost twice the amount of water is needed.

The Research Institute of Organic Agriculture, in the UK, claims to have found significant advantages of organic over conventional cotton in cotton farming in central India. The number of pest management days needed per year is reduced by around 40%. The costs of fertilizers and pest management were significantly reduced. Another study concerning African cotton farming claims that organic cotton crop growing improves yields per acre enhances soil fertility and enhances food security.

While concerns with environmental impact of conventional cotton production derive from the extensive use of pesticides, the use of organic cotton is more beneficent and considered to significantly reduce the life-cycle toxicity of cotton products.

6.4 Organic Cotton and Fair-Trade

It is said that farmers can get better financial results by switching to organic cotton crops. This happens because of a reduction in costs related to eliminating the use pesticides and fertilizers and therefore the input costs necessary for the production. Nevertheless, for farmers to switch to organic crops must leave the soil rest for three years to be able to produce cotton organically, which can represent a drop in yields.

For example, in the Kahramanaras region of Turkey, switching to organic cotton production resulted in a drop in yield from 3,160 to 1,500 kilos per hectare. But the yield gradually recovered, with production increasing to 2,750 kilos per hectare. (Step, 2008)

Cotton is a very important crop for many developing countries, alongside with precious stones, but farmers have many problems regarding the cotton business. When conventional cotton is produced they are entangled with the demands of brokers that provide the seeds and buy the cotton, while in organic production the farmer might have better control of the entire process and better financial results.
6.5 Genetically Modified Crops

Genetically modified (GM) cotton crops are currently produced in the USA, China, India, Australia and Mexico and are the third most import GM commodity (Swezey, 2006). GM cotton is mutated to produce the pesticides needed to combat the pests that attack conventional cotton crops and also to provide herbicide tolerance, which protects the cotton plant against herbicides spraying and so killing the necessary weeds while protecting the cotton plants (Ward, 2007).

The most popular types of GM cotton are the Bacillus thuringiensis and the Roundup Ready (Ward, 2002). The argument by many is that GM cotton is capable of reducing pesticide and herbicide use on cotton plants while increasing yields in comparison with conventional crops.

However recent reports such as “Who benefits from gm crops?” (Friends of the Earth International, 2008), expose that undesired results have come from the utilization of GM cottonseeds. Its use has been unable to protect against other known pests accounting for the higher use of pesticides and decrease in yield. Concerning herbicides, the GM cotton has not succeeded in stopping herbicide-resistant weeds to develop, thus increasing the use of herbicides. It is fair to say, as seen, that GM crops present many environmental uncertainties that makes its use a dilemma (Villar et al., 2008)

6.6 Other Alternative Fibres

In light of the harmful environmental impacts and uncertainties of cotton crop growing, some producers are looking at alternative fibers that can present different properties and opportunities. The most widely observed are:

**Hemp**
Hemp has been most discussed, but due to lack of aesthetic properties, being the hemp textiles always beige in color, has been hard for the consumer to embrace it. Hemp uses a highly mechanical process to become a fiber and the correct infrastructure it needs is not developed yet. Despite being an easy crop to grow organically, hemp is frequently bleach-dyed with the help of toxic compounds.

**Bamboo**
Bamboo is a natural fiber that grows extremely fast, requiring almost no pesticides or chemicals, but just as the hemp it is fairly expensive to produce and because of that difficult to acquire. Bamboo presents many obstacles in the dying process and shrinks considerably with use.

**Pineapple Leaves**
Pineapple leaves are 100% natural grown without the use of chemicals but the resulting fabric is nearly impossible to dye, uncomfortable to the skin and lacks on malleability.
Coconut

Coconut use in the clothing industry is still in its infancy, the material is not widely produced making an expensive commodity. Coconut materials are breathable and present a light coconut aroma.

It is difficult to generalize the impact of all types of fibers since natural and chemical have different demands and have all specific impacts and not all connected with production processes. Table 3 makes a distinction between the environmental impacts of natural and chemical fibers in order to clarify the issues.

Table 3: Environmental impact of Natural and Chemical Fibres (Source: Guidelines. The Sustainable Solution Design Association, 2002)

<table>
<thead>
<tr>
<th>ENVIRONMENTAL IMPACT</th>
<th>NATURE FIBRES</th>
<th>CHEMICAL FIBRES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NATURAL</td>
<td>REGENERATED</td>
</tr>
<tr>
<td></td>
<td>Cotton</td>
<td>Viscose and similar fibres</td>
</tr>
<tr>
<td></td>
<td>Flax etc. bast fibres</td>
<td>cellulose fibres</td>
</tr>
<tr>
<td></td>
<td>Wool etc. animal fibres</td>
<td></td>
</tr>
<tr>
<td>GROWING / FIBRE MANUFACTURING</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Water consumption</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Pesticides</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Wastewater</td>
<td>-</td>
<td>++</td>
</tr>
<tr>
<td>Air emission</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PRODUCTION OF FABRICS</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Water consumption</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Wastewater</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>PCP/TcCP</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Chlorine bleaching</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Metal complex dyes</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Allergy-provoking dyes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Carrier</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Petrol-based printing</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>AFTERTREATMENT / FINISH</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>++</td>
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<tr>
<td>Flame retardants</td>
<td>++</td>
<td>++</td>
</tr>
</tbody>
</table>

+++: Significantly relevant environmental impact by the fibre in question
++: Partly relevant
+: Not relevant

1: The category of bast fibres includes ramie, jute and hemp, for example
2: Including amongst others acetate, triacetate, cupro, lyocell and modal

Many issues have to be taken in account by designers and companies in the selection between natural and chemical fibers. The main difference can be attributed to the fact that chemical fibers use resources in the oil format that are non-renewable, not in the case of viscose, which is extracted from wood.
In conclusion, both natural and chemical fibers present environmental impacts that derived from the whole of the fiber life cycle. To analyze the impact of the production of any fiber is necessary to look at how much water consumption, chemical and pesticides are used, the type of chemical used, look at the local flora and how waste is generated and disposed.

When it comes to the environmental impact of conventional cotton, as Table 3 shows, the choice of organic over non-organic crops can minimize the use of pesticides and toxic chemicals that contribute in large for the depletion of natural systems. Even if the production organically grown cotton is in development, companies can alleviate the ecological effects of cotton garments if they choose for 100% organically grown cotton, without the use of defoliants before cotton picking and solvents during the wet treatment.

6.7 Summary/Recommendations

G-Star must start now to use a percentage of organic cotton on all of its products. The company has to realize the effects of conventional cotton production and start incorporating a minimum amount of organic cotton, like Hema, H&M, Levi’s and Wrangler are already doing it.

G-Star’s fabric is denim and, as the chapter explains, there lies many environmental problems due to cotton production, the company has been announcing since 2007, in Textilia Magazine, about possible eco jeans but those promises have not come across. The advise is for G-Star to optimize the use of cotton by looking at the possibilities of using organic cotton thread and certain amounts of organic cotton in its clothing as soon as possible. For their raw, industrial and long lasting designs, maybe 100% organic cotton jeans wouldn’t be the most appropriate, but the company must now start introducing a small amount of organic cotton on all of its apparel in order to gain competitive edge and tackle environmental issues.
CHAPTER 7. INTERNATIONAL CERTIFYING ORGANIZATIONS

Who should G-Star turn to when making the shift?

For G-Star to undergo a process of looking at the company's current processes in order to attend to environmental concerns, this cannot only be done internally. Designers, buyers and producers must be involved with external organizations, activists and consumer groups to discuss environmental concerns and prospects. There are already organizations that create awareness, offer support, labeling and/or certification for sustainable businesses and products. This chapter gives an overview of the leading organization and labeling schemes and which ones are suitable for helping G-Star's shift.

7.1.1 European Union and the Flower Label

The flower logo is EU’s certificate for textile products that have a reduced environmental impact compared with products using standard production. The main goal of the EU flower is to inform consumers about products that attend to environmental affects and provide direct and reliable information about this type of products. Furthermore, the goal of the EU with this logo is to instigate supply and demand of environmentally friendly products (European Commission, 2008).

Who can use the label?
All producers and importers who sell their products in the member states of the European Union, Liechtenstein, Norway and Iceland can use the label.

Criteria
The foremost environmental issues are analysed in the entirety of the product's life cycle stages and taken in account. Requirements are based on the reduction of wastewater pollution, GHG emission, toxicity of materials and maintenance properties of the products, this for the case of textiles. Regarding production of textiles there are no condition for it to be organic. Every three years new criteria is stipulated, requiring products to be re-submitted against new criteria (European Commission, 2008).

Costs
The initial cost of the label is set in accordance with the company's turnover, making it fair for all brands to obtain it. Also a fee is charged every time there's application for compliance with new criteria (every third year).

"The EU Ecolabel is essential in facilitating consumers' sustainable choices favouring the more sustainable segment of products and services on the market."
The Swedish Consumers’ Association (Sweden)
7.1.2 The EKO-label

The EKO Sustainable Textile quality symbol is the Netherlands's certification for textiles products (yarns, fibres, materials and clothes) that respect sustainable production. The label is awarded, by the Control Union Certifications, (formerly Skal International), for organic production only when it meets EU requirements and regulation and is the only label that also attends to working conditions.

The scheme is designed to guarantee sustainable textile production and promote developed in collaboration with industry professionals, environmental organisations and consumer groups.

The standard aims to reliably certify the consumer of an organic textile from the very first step of the process. The label only applies for textiles made of natural fibres produced in accordance with EU standards (Control Union, 2008).

Who can use the label?
Any producer, company or brand that meets the requirements for sustainable textile products, from natural fibres, according to European standard of organic production stipulated by EEC-Regulation 2092/91, or NOP regulations (Control Union, 2008).

Criteria
The criteria for the label are developed with the intent to obtain as much environmental gain as possible. The EKO-label certification uses GOTS (Global Organic Textile Standard) that establishes the guidelines to ensure the organic status of textiles, from manufacturing to labelling, not only environmentally but also socially. Furthermore, also includes the company’s internal environmental conditions, namely environmental management systems, wastewater discharge and working conditions along the supply chain (Control Union, 2008).

Costs
Costs for this labelling scheme are not publicized.

7.1.3 Oeko-Tex 100

The certificate assesses and monitors any harmful substances present within processed textiles intended to come in contact with the consumer, the permissible values are stipulated whether the textile is in contact with skin or not. This label is only concerned with standards for the ready to sell product and is currently the strictest and most difficult certification to obtain.

Despite being an international programme, is most commonly known in Europe. The label still needs to develop awareness with the consumers and to become better recognized.
The main goal of the label is to inform consumers of textiles that do not pose a risk for human health and the scheme is particularly demanding when it comes to baby products.

Oeko-Tex strict standards also apply to the environmentally sound production and disposal phase of textiles, as in air quality, waste and water management and recyclable properties.

7.1.4 International Organization for Standardization (ISO)

The ISO offers international standards for businesses, government and society. The ISO 14000 groups are concerned with environmental management and offer many certifications in the field of environmental management. There are two main standards to observe, the ISO 14001:2004 and the ISO 14004:2004.

ISO 14001:2004
This standard stipulates the conditions for an environmental management system (EMS) which can be obtained by any organization regardless of its size or business scope. It is meant to help identify and manage environmental impacts of businesses, products or services, but doesn’t provide concrete targets of environmental performance. Its concern is to provide a framework for environmental policy, by giving generalized requirements for an EMS (ISO, 2008).

ISO 14004:2004
This standard is meant to provide guidance in implementing, developing and improving an EMS and its conformity with other management systems. As ISO 14001:2004 it is also meant for any organization, regardless of location, size or scope (ISO, 2008).

Both certifications can pose certain challenges for small and medium-sized enterprises (SMEs) during implementation, but according to ISO’s experience, the process can be done successfully and many benefits regarding business and environmental performance result from the implementation of an EMS. In order to help companies overcome the challenges and obtain the maximum benefits, ISO offers guidance and consultants for EMS implementation procedures at an extra cost (ISO, 2008).

7.1.5 Organic Exchange (OE)

The OE is a globally recognized charitable organization, originated in the USA, concerned with promoting organic farming, specially cotton, and informing consumers of products that have been organically produced or that contain a certain amount of organically produced components through two certification programmes, as follow:

OE Blended Standard
This labelling can be used for garments, which contain a blend of conventional with a minimum of 5% organic cotton fibres. It also allows publicizing the amount of organic cotton
fibre used, making claims clearer in the eyes of the consumer. (Control Union, 2008)

**OE 100 Standard**

Companies and brands can use this label for fabrics and finished products made of 100% organically grown cotton. It is concerned with the whole process of production but the labelling main coal is to bridge the gap existing in the certification of 100% organic fibres.

The labelling programmes offered by OE allows for the use of the logos, which helps consumers better identify organic garments and also companies to raise their private standards. The labelling can and should be used to have a better control and traceability over their suppliers and producers. It encourages organic farming and makes sure the organic cotton used only comes from certified farmers (Control Union, 2008).

H&M is currently one of the holders of this certification. The company has included organically grown cotton (around 5%) in certain baby and children’s garments since 2004. Until now the Swedish organization has used more than 80 tonnes of organic cotton according to OE, Part of H&M’s 2007 collection was made with 100 % organic cotton. During the same year the company reportedly used 600 tonnes of organic cotton.

### CHAPTER 7.2 Non-Certifying Organizations

Along with certifications and labelling schemes, brands can also opt as first approach to understand the problems with CSR and environmental concerns, to have a dialogue with NGOs and other organizations that provide advice and clarify concerns in fashion’s social and environmental dimensions. Here the focus is exclusively on Dutch organizations as G-Star is also a Dutch brand. The main findings of the interview with Geert-Jan Davelaar (Amsterdam, 21st March, 2008), project coordinator for the Clean Clothes Campaign, are also here presented.

**7.2.1 MVO Nederland**

MVO (Maatschappelijk verantwoord ondernemen) is a Dutch governmentally funded-organization, which is helping G-Star alleviating the problems that derived from accusations regarding suppliers’ dubious social conditions. To use MVO was the label’s first effort to a clearer CSR policy along with an increased assertiveness in its Code of Conduct regarding environmental and social concerns, assuring that compliance to G-Star’s internal standards must be met by all its manufactures.

The organization’s main concerns are to divulgate CSR provide assistance in social, environmental, and also economic issues to SMEs. It offers a centre of
expertise in corporate responsibility issues that try to improve the policies of companies and alerts that CSR extends to the whole of the supply chain,

According to MVO (2007) “CSR is process whereby a company assumes responsibility, across its entire supply chain, for the social, ecological and economic consequences of the company’s activities, reports on these consequences, and constructively engages with stake holders”.

Regarding environmental impacts the MVO’s CSR Frame of Reference (2007) says that:

- Businesses have a responsibility regarding environmental impacts of their activities.
- Efforts should be made to minimize these negative impacts
- Transparency to stakeholders and correct reporting of activities and impacts are essential.
- Citizens have a right to decision and participation in environmental matters, as stipulated by the 1998 UNECE Aarhus Convention.

Furthermore the MVO also states that for any CSR strategy to be implemented, a substantial operational aspect cannot be overlooked, the Multi-stakeholder approach. This is when all the relevant stakeholders are identified and brought in to the boardroom for awareness processes and discussion over opposing views. All stakeholders should be involved in developing a CSR policy, implementing it and furthermore verifying the results of such policies.

Another relevant operational aspect is making sure that CSR programmes are implemented all along the supply chain, this is the supply chain approach, enforcing CSR standards in production and along the entirety of the supply chain and taking responsibility for implementation.

This should be one of G-Star’s main concerns and constitute a core concept in CSR strategy. It is important to take preventive action regarding environmental issues and account for responsible management in all operations.

7.2.2 The Clean Clothes Campaign (CCC) (Interview with Geert-Jan Davelaar)

The CCC is the organization responsible for alerting the public about G-Star’s standards not being respected by suppliers (see Fig.7 below). CCC is a NGO concerned with social standards in the fashion industry. As Geert-Jan Davelaar (2008) explained in a personal interview for this thesis:

“CCC started in the end of the 80’s due to problems with factories where C&A was sourcing. Activists and women’s groups did an action and realized that there were big problems in the clothing industry in general. The result was a campaign organization focused in cut-make-trim (CMT) processes. That is how CCC was born.”

“Mainly because this part of the industry is so complex and so we want to focus in labour conditions in those processes”.
Each country with its CCC campaign functions independently but still they all come together with the help of the International Secretariat in Amsterdam. The Dutch CCC is currently not specifically involved with environmental impacts of the fashion industry, because it feels that it doesn’t have yet the necessary knowledge to do so. In the UK, the local CCC has made many efforts into putting environmental issues in the agenda.

Concerning CSR policies and implementations it was stated in the interview, by Mr. Daavelar (2008) that:

“One of the most important CSR issues is transparency. There should always be a dialogue between all the stakeholders involved with the company, in society. Each stakeholder can learn, evolve and take things further, which is a crucial aspect of CSR. There is the need to talk about what is important for you as CCC, as a company, as an environmental organization or labour group. These groups need something from each other and that is very important.

Attending to the issues, really depend on the company and how serious they take the subjects [...] there are new companies based only on ethical ideologies and there are some that need CSR as a PR tool, which is fine in a way. Companies in the fashion business should be aware that consumers and groups will ask questions about the things they say they are doing and what they are really making happen.”

The project Mr. Daavelar is coordinator of tries to raise awareness with important future industry players, fashion students that will become designers and managers; it is there where understanding of the current problems in the industry must be exercised.

When asked about other non-certifying bodies, Mr. Daavelar (2008) expressed some concern: “Organizations like Made-BY, make a lot of promises but have no clear results. They should show the consumer what their concerns are; transparency, labour conditions or the environment, but not present the issue as if everything is okay. Concerning brands, they should make the consumer aware of the problems, state what they are doing and say: We are not there yet.
It is best for companies and brands to say they are doing the best they can, instead of saying that they are the best ethical company in the market, because there is no further transparency.”

(Please refer to appendix for the full interview)

7.2.3 Summary/Recommendations

It is advised for G-Star to become member of the Organic Exchange and obtain, to start with, the OE Blended Standard certification. This is the best option, at a beginning stage, because it allows to use conventional cotton with a minimum of 5% organic cotton and to publicize it in the labelling.

The OE should help G-Star in developing jeans that are still industrial, long-lasting designs but that start incorporating organic cotton in the best way, without affecting the company’s design principles. Until now the company has not obtained any kind of certification, it is important to do so.

Secondly, G-Star must obtain the ISO 14001:2004 standard because it’s one of the most effective standards to help in the management of environmental impacts of businesses and products. Being backed up by this standard means that G-Star will be aware of the general requisites for an EMS and will be able to obtain a certification. Furthermore the ISO can help in the implementation and general problems that occur from it. ISO is a world known organization and G-Star will only but benefit, if associated with it.

Lastly, G-Star must develop a better relationship with the CCC in Holland, not only because of past problems, but also because the organization can help G-Star to become more transparent and aware of the role of stakeholders in fashion companies. With good dialogue and communication, G-Star can positively learn from this organization, how its own business can be improved and what NGOs, like CCC, expect from brands and can help brands with.
CHAPTER 8: ENVIRONMENTALLY RESPONSIBLE BRANDS

Fashion denim brands are already shifting practice, who should G-Star look to for inspiration?

According to the CBI (2007) report on denim, the leading denim brands in Europe and rest of the world are Levi Strauss, Lee and Wrangler. The American brands dominate the market and compete with other major denim players for market share. This chapter analyses the labels that compete with G-Star, what measures are these companies taking regarding environmental concerns and what can G-Star learn from them.

8.1 VF Corporation

The VF Corporation (Vanity Fair) is an American clothing conglomerate with different lifestyle brands and one of the oldest apparel suppliers. The most important labels under its umbrella are Lee and Wrangler, which together with Levi’s are considered to be the only three genuine global jeans brand (Newbery, 2007). VF Corporation is specialized in jeans making with over a 100 years of experience in the industry.

VF in total (Lee and Wrangler, plus smaller brands as 7 for All Mankind, which have been acquired recently) has 19% of the total US market. In the U.K Wrangler has 6% of the total market and around 19% of the branded market; and Lee has only 5% of the total market, which is about 12% of the branded market. (Newbery, 2007) VF had in 2006 a reportedly turnover of EUR 4.1bn. (Newbery, 2007).

In the company’s code of conduct under public responsibility there is a reference to the organization’s environmental concerns. It is stated that the company will “manage its business in ways that are sensitive to the environment (...) will comply with all environmental, health and safety laws and will internally establish and comply with its own strict standards established on behalf of the well-being of our associates and the communities in which the Company operates.” (VF Code of Business Conduct, 2008) Furthermore there is no specific information about action or strategies taken to ensure that the environment or communities where VF brands operate are protected.

Wrangler Organics: Natural Processes

Wrangler introduced in 2007 a special collection that uses 100% certified organic denim cotton in cooperation with Italian laundries, which resulted in the development of natural processes creating unique finishings. The cotton is dyed with a higher than normal percentage of natural indigo dye (40 % opposed to the regular 8-12%). This means cast levels with no chemical or synthetic finishing techniques (Wrangler, Press Release, 2007).

The jeans brand states that is committed to the use of natural fibres and “old world fabrics” throughout the whole collection and the Wrangler Organics collection was the first step to ensure this further. Wrangler announced the use

Despite announcements by both Wrangler and Lee, only the first is publicly making efforts to produce jeans with the objective of diminishing environmental impact.

8.2 Levi Strauss: Keeping The Nasties Out

The first organic denim collection by the company, called Levi’s Natural, was released in 1991 after experiments with recycled denim and organic cotton. But it was not until 2006 that Levi’s made a new effort in organic apparel. Levi’s “Eco” denim is the first 100% organic cotton jean released in 2007. Levi’s plans are to incorporate the natural, insecticide-free cotton fibre in most of its lines. Control Union Certifications certified the jean as an EKO Sustainable Textile (Mesa, 2007).

Levi’s Eco denim line is identified by an embroidered lower case “e“ inside the jeans front pocket or bottom right leg and uses 100% certified organic cotton, washed with natural substances such as potato starch and mimosa flower. The packaging is in recycled paper and uses soy-based ink. Furthermore the design team developed natural dyes and buttons and zippers from recycled metal (Mesa, 2007).

Levi’s Eco was developed under the supervision of Control Union Certification and the brand claims the model to be the result of Levi’s research on consumer needs, which showed that there was a growing interest in sustainability, ethical style and in knowing the effects of the brand on the environment (Blanchard, 2007).

In 1995 Levis’ was one of the first global apparel company to implement strict guidelines on wastewater usage to be met by suppliers, laundries and finishing companies. A Restricted Substance List was then implemented, considered to be an industry-leading document that ensures environmentally responsible production.

Levi’s also recognizes the effects of emitting Co2 and other greenhouse gases into the atmosphere and became part of the World Resources Institute’s Green Power Group-California affiliates as an attempt to learn how together with other concerned companies, the brand can reduce emissions from its operations.

Levi’s is committed to develop a global environmental strategy and the following steps have been taken in that respect (Levi Strauss & Co, 2008):

- An assessment of products’ environmental impact- from cotton production to product disposal. Mainly focusing in air emissions, waste production and water usage.
• Validation study to verify data provided by contractors in order to improve the Global Effluent Guidelines and to make it more effective at supplier level

• Inventory of greenhouse gas emissions for owned/leased-and-operated facilities (headquarters, distribution centres, retail spaces, sales offices, etc.) Starting in the Americas, with intentions to set global emission reduction targets, for all regions with brand operations.

• Development of Facilities Environmental Impact to acknowledge the overall environmental impacts of worldwide Levi’s facilities.

The organization implies that is committed to first gather all the relevant data so an extended environmental strategy can be developed, with specific targets and objectives, to attend stakeholders concerns.

8.3 Nudie Jeans: Don’t Wash To Keep Jeans Longer

The Swedish jeans label claims to be anti-fashion stating in their website and booklet “The Naked Truth About Denim”, offered with each jeans pair sold, that they are “a true jeans brand not pushing short term trends”.

The label specializes in jeans and t-shirts and it was only in May 2007, that the company opened its first retail space, in hometown Stockholm. Considered a premium brand with prices ranging from Euro 100-400, it is only recently that Nudie felt the necessity to venture into its own controlled retail, plans for the next five years are to open up 10 stores and an undisclosed number of outlets in Germany and Japan. (Newbery, 2007)

Nudie is perceived a front-runner in environmental concerns with actions towards denim production that results in exemplary corporate social responsibility. The company’s Code of Conduct is based on the importance of protecting the environment and population and the compliance of suppliers and sub-suppliers. Nudie claims that their consumer is interested in how products are manufactured and the efforts the brand makes to diminish social and environmental impacts.

The company's ambition has lead to developments on washes, treatments, labelling and after care to combat the social and ecological effects of the garment industry. In order to obtain chemical-free processes and respect ecological procedures starting at yarn production, Nudie’s organic cotton is spun, dyed, woven and finished using potato starch and pre-reduced indigo (Nudie, 2007). Their denim producers develop 100% organic cotton and also blended yarn where the organic cotton is blended in into normal production. Nudie claims that every step of the production follows detailed and accurate rules in order to make it organic cotton (Nudie, 2007) and that all suppliers are obliged to comply with environmental legislation and susceptible to unannounced inspections. (Nudie, Code of Conduct, 2007)
The brand mainly uses unwashed or raw denim and advises the consumer to only wash the jeans after 6 months of use to achieve best aesthetic results (after care of the product is responsible for the most environmental damage due to the prolific use of water, detergents, energy)

8.4 Kuyichi: Fair Trade And A Shift To Organic Cotton

The Dutch fair trade initiative called Solidariad started Kuyichi in 2001, using Oro Blanco fair-trade cotton from Peru. The company's main effort goal is to offer organic cotton and fair trade jeans wear manufactured in a pure, organic and fair-traded manner. From all environmental conscious jeans makers, Kuyichi is the one that offers the most styles and washes with a retail price under the 80Eur (Mesa, 2007).

Kuyichi says it currently uses organic cotton in 70-80% of all collections and the goal is to work 100% with organic cotton in the future. The designs are considered to be comfortable and wearable in a price range slightly lower than its other eco competitors.

The brand is dedicated to support organic farming, improve biodiversity, soil quality and overall environmental quality for cotton farmers.

Made-By together with Kuyichi helps to improve sustainability and adds transparency to the production system. The label has helped Kuyichi in the responsible sourcing of cotton and to establish SA80000 certified supply factories.

Kuyichi views itself as the first label with organics to ally fair-trade and environmentally aware production but there are no further reference to specific strategies or benchmarking studies that can show results of the brand's efforts on reducing environmental impact.

8.5 Del Forte Denim: Fashion and Eco-Friendly Design

Tierra del Forte is the designer behind Del Forte Denim, a premium denim company made in USA with 100% organic cotton that started in 2005. After beginning her career and visiting a number of garment factories, the designer realized the necessity to create an eco-conscious denim line.

Del Forte Denim aims at “the eco-chic woman who is transforming the face of fashion” (Del Forte, 2008) and is best loved by celebrities due to its curvy designs. Del Forte regards itself as part of a major trend that unites luxury with ethical production.

The “greener” denim that Del Forte is devoted to achieve is entirely made of 100% organic cotton grown, milled, cut and sewn all in the U.S. The company is linked with The Sustainable Cotton Project (SCP), which concentrates on the production and use of cotton and creates links between growers of certified organically grown cotton with manufactures, consumers and new markets (Del Forte, 2008). SCP main objective is to create a cleaner production of cotton by
providing farmers with information and strategies about bio-agricultural methods. Del Forte Denim supports SCP financially by donating an undisclosed part of the company’s earnings.

Other environmental initiative Del Forte has taken is the Project Re|EANeration, an attempt to diminish the effects of denim disposal. When consumers are ready to part from their Del Forte jeans, the brand will recycled the used denim into new designs and presents the consumer with the opportunity to have 10% off the next purchase or donate the 10% to SCP (Del Forte, 2007). Furthermore Del Forte ensures the use of eco-friendly products and services whenever possible; high quality recycled paper, vegetable-based ink and carbon neutral web hosting.

8.6 Jack & Jones: The Democratization of Eco-Design

Bestseller is the family-owned Danish holding that acquired Jack & Jones in 1990. The brand offers denim and casual men’s wear, to a young and urban target group of 18-30 years. Jack & Jones wants to be considered as a prominent producer of denim products and make them available to a wider market.

JJ Eco is the eco-conscious collection developed by Jack and Jones in 2007. The brand claims with this collection its “objective is to make sustainable eco-fashion accessible to everyone”, so the line is available at 600 European stores and with a lower price than other organic brands, but slightly higher than the normal Jack & Jones price tag (Jack & Jones, 2007).

The design team created solutions in regard to washes, treatments and other details. The collection is produced with 100% certified organic cotton by EKO but also fair-traded, certified by the FAIRTRADE... and is mainly composed by t-shirts, jeans and sweatshirts.

The jeans, as the rest of the collection, are produced with the biggest consideration to the environment, assures Jack & Jones. Each style comes with organic details; buttons are made with coconut shells, back labels made of real leather and instead of rivets, strong stitching is used. Furthermore all the thread used is organic cotton thread. Jeans’ treatments are also organic, to obtain a rough or dirty look, bark, wood and roots are used. The washes are accomplished with clean water and natural stones.

In t-shirts and sweatshirts, prints are made using water-based dyes or natural oils and also sewn with organic cotton thread. The consumer can identify the collection by a small green dot present in all styles. Jack & Jones maintains intentions to repeat the eco collection in the following years (Jack & Jones, 2007) and prides itself in being one of the first brands to start a consistently organic and fair-traded certified collection (Jack & Jones, 2007).

Bestseller’s code of conduct on environmental protection suggests that the supplier shall promote environmentally friendly production and develop a system for environmental management. Furthermore, that system is expected to be visible as soon as one enters the premises of the factory but there is no further reference to which system is in use.
8.7 Summary/Recommendations

The brands presented are a good example for G-Star to look at and take inspiration from when developing its own environmental policy and marketing eco products. G-Star must take in all of what other fashion denim brands are doing and give an own, focused approach. That approach should encompass the principles of the G-Star brand and establish a secure place for the brand within the marketplace of eco denim brands. Using the ideals of “Raw”, which connect with purity and salvage, G-Star must venture into developing its own industrial denim design also organic.

Combining the idea of rough and pure are within the brand guidelines and a new type of denim that uses organic cotton with strong design elements, will keep G-Star within the innovators group of brands and offer something truly unique, new and eco-conscious to its consumer.
CHAPTER 9. G-Star Raw: A Denim Story With Innovative Design Edge

How can G-Star denim story, with innovative design edge, become greener?

9.1 History

G-Star started in 1989 when it was known as “Gapstar” and today is considered to be a trendy Dutch denim brand that since the beginning of the 90’s associates itself with the motto: “No image, just the product”. G-star tries to distance itself from trends by expressing an interest for denim that goes beyond hypes or seasonal trends, instead their philosophy is to always offer the consumer a product that has an excellent price/quality relationship (Hospes, 2007).

In 1991, G-Star’s current director Jos van Tillburg hired Pierre Moriset as the company’s head designer and 3 years later, after starting to import to Austria and France, Gapstar, because of American company GAP, became G-Star. Morisset is the responsible for G-star’s first iconic jeans model, Elwood.

Elwood was inspired in rain –wet motorcycle pants and it was first released in 1996. G-Star’s Elwood model did not catch the market’s attention until later on. It was an unexpected jeans model using raw denim, rarely used at the time, and featured a design shift from the traditional jeans being produced during the mid 90’s. Leaving behind the light washings and 5 pockets consistency, G-Star’s Elwood brought new features as the 3 dimensional leg, the butt stitching, the seam in the upper leg and the knee pad (Hospes, 2007).

Elwood is part of G-Star’s denim history and have now been sold over six million times worldwide (Dartmaan et al, 2006), this jeans model was re-visited in 2006 to celebrate its 10th anniversary and a small collection named “Elwood 10” was launched.

Today G-Star is viewed as an innovative, cutting-edge denim brand using raw materials like salvage denim and raw denim, new cuts and washes. G-Star made its name with its raw denim and that philosophy of strong, industrial denim and design is what made the company boom. The Dutch fashion denim brand aspires in the future to become the new Levi’s (Hospes, 2007).

9.2 Marketing

“Just the product” is the slogan that dictates G-Star’s marketing approach and company goals since the brand’s establishment. This philosophy of putting the product in the limelight of the company’s actions is expressed in all marketing efforts and brand communications.

There is not story-telling marketing at G-Star’s, the products speak by themselves and this ideology is present in the totality of G-Star’s world as shop interiors, any type of advertisement or promotional campaign and fashion shows. Furthermore it is the company’s internal marketing and graphics team
that is responsible for making sure the product always takes the centre stage (Hospes, 2007).

9.3 Advertising

G-Star advertises in most of the well-known fashion publications and also through environmental and print campaigns seen throughout major cities in the world (see fig.8 and 9), those are the two most used mediums for the company’s marketing communication.

The advertisements have the product as only concern, the models used are never the central point of the campaigns, instead they are presented as props for the clothing, there was no facial expression or direct contact with the observer, until recently and campaigns are always shot in studio. One can say that the clothing is intended to convey all the necessary messages.

Figure 8 - G-Star Advertisement, Amsterdam (Source: Author's own, 2008)

Figure 9 - G-Star Advertisement, Amsterdam (Source: Author's own, 2007)
9.4 Products

With the philosophy “product over image”, the company became best known by its continuous renewal on product lines, innovative cuts, fits and washes. G-Star Raw Denim collection first introduced in 1996 is believed to be the most important and influential contribution of the company for the development of the global jeans market (Dartmaan et al., 2006). In the same year the model Elwood was released but both did not predict the success the brand has today, it took perseverance from G-Star. Raw denim, which is optimally processed in the weaving stage, was the company’s response to markets’ need for innovative and functional products, but it took awhile to catch on.

9.5 Finance

G-Star’s director Yost van Tillburg claims that the company’s goal is not to become a multinational brand that will agglomerate other brands, but rather stay loyal to their love for denim and to keep on making jeans with innovation and passion (Hospes, 2007).

G-star is considered a global company with 100 monobrand shops and with its headquarters located in Amsterdam. In 2003 van Tillburg performed an independent management buy-out from the group Secon and G-Star became fully independent.

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<tr>
<th>HOW BIG IS G-STAR?</th>
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<tbody>
<tr>
<td>Turnover:</td>
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<tr>
<td>2006: 470 Million euro</td>
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<tr>
<td>2005: 332 Million euro</td>
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<tr>
<td>Points of Sale:</td>
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<tr>
<td>4,900 points of sale in 51 lands, from which more than 100 are G-Star monobrand shops (end of 2007)</td>
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<tr>
<td>Showrooms:</td>
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<tr>
<td>80 showrooms and 28 offices worldwide</td>
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<tr>
<td>Employees</td>
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<tr>
<td>600 employees worldwide (30 nationalities), from which more than 300 are in The Netherlands</td>
</tr>
</tbody>
</table>

The reasons to become independent as explained by Tillburg are mainly because the company already owned accounting, warehousing and purchasing apart from Secon, a management buyout was therefore facilitated and represented a strategic step for the brand (Hospes, 2007).

The company has 28 offices, 80 showrooms and nearly around 600 employees worldwide. G-Star’s growth strategy has been planned step by step. Plans are developed 3 years ahead, in general in the first year is expected a 40% growth, the second a 10% growth and third an 8.5% growth respectively. The products are sold in around 60 countries and the annual turnover is said to reach 500 million (Dartmaan et al., 2006).

G-Star is considered to be an innovative brand in regards to fashion and styling but also because of finishing and new materials. When compared with other
brands, G-Star, as table 4 shows below, is in the innovators segment with medium process. Table 4 exposes G-Star’s main competitors, price levels and fashion acceptance.

<table>
<thead>
<tr>
<th>Fashion acceptance</th>
<th>Innovators</th>
<th>Trendsetters</th>
<th>Trend followers</th>
<th>Late adopters</th>
</tr>
</thead>
<tbody>
<tr>
<td>High C 80–200+</td>
<td>M&amp;F Girbaud Von Dutch</td>
<td>True Religion Blue Blood Nudie Edun</td>
<td>Seven for all mankind J Brand DKNY jeans Armani jeans</td>
<td>--</td>
</tr>
<tr>
<td>Low C20–60</td>
<td>--</td>
<td>Cheap Monday Dr Denim &amp;D (H&amp;M) MNG (Mango) TRFC (Zara)</td>
<td>Cars Jeans Gap Jinglers (C&amp;A)</td>
<td>Tesco Matalan Zeeman No brand names</td>
</tr>
</tbody>
</table>

Table 4 - G-Star and Competitors (Source: CBI Report· The EU Market for Denim Jeans, 2007)

9.6 Stores:

G-Star continues to open more G-Star stores in key cities throughout the world. The interior of the G-Star stores is directly connected with the brand’s driving design ideals: rough, stylish, pure, and functional (see fig 10, below).

The interior uses only natural materials such as wood and leather with concrete and steel showcasing the clothing in its pure design form and also enables the
consumers to identify strongly with the brand and become familiar with the overall style; accessible luxury street wear and masterfully crafted denim.

9.7 Summary/Recommendations

As the biggest denim brand in The Netherlands, G-Star, with its strong design edge, must become greener by echoing that design edge in products that are eco-friendly. Having in mind the concept of raw, functional and strong denim, G-Star is has to make the raw denim also organic, to give it a different innovative edge. G-Star needs to take steps in developing jeans and clothing that present the same quality, innovation but are as green as possible.

The use of a minimum amount of organic cotton, certified by the OE Blended Standard, the use of organic cotton thread, reinforced stitching instead of metal rivets and other eco-friendly haberdashery like recycled zippers and the use of eco friendly packaging and labelling from recycled paper are simple and effective steps for G-Star to become greener and preserve its strong design principles. As innovation is the key for the brand, a G-Star eco–product would be raw and innovative, always surprising the consumer, with style and timelessness to become a classic. G-Star must step up to its name and develop jeans that are as innovative, strong and durable as they are environmentally friendly. Only then the company will become more than a fashion denim brand and rise above its competitors that are slowly gathering pace in the eco-conscious consumer trend exposed by the desk and market research.
Chapter 10. Market Research

10.1 Research Methodology

10.1.1 Secondary Research

The secondary research is undertaken through to narrow down on a more specific topic with more practical meanings and deeper thinking for further research.

Desk Research
To recap, the aim of the research is to develop an environmental strategy to be used by fashion and denim companies by integrating ecological concerns into business models and consequently a strategy formulation.

Desk research is accomplished by background studies and literature review in order to understand the complicacies with the definition of environmental sustainability in the clothing industry and denim sector, also the role of legislation, non-governmental organizations (NGOs) and the consumer. As the research area covers a wide range of relevant topics, articulation of an appropriate research environment and original triggers of the research is necessary. The first chapters disclose the general picture of the research background and help understand the state of the fashion industry in regard to environmental stewardship.

Once more, in order to gain profound knowledge and information of the relevant area of the research, extensive reading helped to define specific subjects, problems, developed theories and key players. By studying the literature by accredited scholars and researchers, the reasonable importance of the research and to find out the application potential of the strategy that is generated at the end could be confirmed.

10.1.2 Primary Research

The purpose of the primary research is to understand market trends and characteristics and gather consumer opinions regarding the environmental impact of fashion.

During the field research, primary data was collected by means of online surveys, individual interviews with related fashion professionals and observation in shops where “eco” products are being marketed.

The goal of the field research is to produce quantifiable insights into consumer behavior, buying attitudes and to gain better understanding of the market, identify changes, gain a understanding of consumer opinions and needs and to improve market awareness, by using a structured approach and a sample of people, in the case of the online questionnaires.

10.1.3 Hearing It From The Buying Place

Despite being a quantitative research, the goal of the online survey is focused in attitudes, values, opinions and motivations of the consumer. And also to further understand consumer lifestyle. The online survey is an effective approach to get
the information within the time limits and the findings are valuable for further discussion as it has the power to be used as strong evidence to explain the topic at hands and to analyze the possible solutions.

**Questionnaire Design**
The first questions of the questionnaire aim at understanding participant’s lifestyle, clothing expenditure, importance given to the country of origin, willingness to buy eco-products and awareness of ecological problems. The second half of the online survey is directed at G-Star consumers and their opinion of the brand and the reasons to buy G-Star products; in total there are 20 questions. The questions are designed in a reasonable order, with simple language and for those participants that don’t know G-Star, the questionnaire designed allowed to complete the survey but skip those particular questions. (Please refer to appendix for the complete questionnaire transcript).

**10.1.4 Findings**
The online survey was made available from November 2007 until March 2008, through www.surveymonkey.com. A specific link was sent that allowed respondents to click and complete the entire questionnaire in no longer than 5 minutes. At first the respondents were selected from the author’s own contact database and after it was sent to fashion students from the AMFI and also posted in www.hyves.nl, in specific G-Star fan groups, some of them having more than 20,000 members. This was done so that a comprehensive sample could be obtained.

A total of 85 people accessed the link and completed the questionnaire; 50.6% male and 49.4% female. The majority of the respondents are aged between 18-25 (30.6%) and 25-30(23.5%).

![Gender Age Chart]

Concerning occupation, 56.5% of the respondents are employed while 44.7% are students and 10.6% have other occupations. None of the respondents are unemployed. The favorite hobbies and activities are music (51.8%), followed by using the Internet (42.4%) and going out/clubbing (38.8%). In second place come reading books (36.5%), sports activities (35.3%) and shopping (32.9%). Reading fashion magazines (21.2%) and spending time with family (21.2%) come in last. It is important to mention that Internet, in all age groups, is having a bigger importance than any other activity. Hence, Internet should be
considered as an increasingly important medium for marketing and communication, in this case more than fashion magazines.

Clothing expenditure is as follow:

**Monthly Clothing Expenditure**

When shopping for clothing only 4.8% of the respondents say that it is important for them to know where their clothing comes from and how is produced. 83.3% of the respondents attribute importance to design/fit followed by quality (53.6%) and price (46.4%). However 32.9 % of the respondents say they are interested in knowing which country their clothing comes from but that doesn’t constitute an important purchasing factor.

The majority of the respondents (63.5%) is aware of organic fabrics like cotton and seems very interested in clothing that is produced in an environmentally friendly manner.

When asked if they are willing to pay more for clothing produced in a planet friendly way, 62.4 % of the respondents said yes while the rest (37.6%) are not willing to do so. The research shows that the interest in eco friendly clothing and the awareness of its existence is quite relevant and gaining momentum. This seems not yet to be influencing the decisions on clothing purchases as only 4.8% thinks about how their clothing is produced when shopping, but it shows that the consumer is aware that there are options and they are willing to spend a bit more if they know the clothing attends to ecological concerns.

The majority doesn’t own eco-friendly garments but 35.8% answered they did own, a percentage expected to be much lower at the beginning of the research. It shows that the interested in ecology and fashion is slowly becoming more
important as a relevant part of the consumers are already taking in account environmental aspects when buying new garments.

Regarding environmental issues and responsibility for environmental damage the following chart illustrates the responses obtained.

<table>
<thead>
<tr>
<th>Responsibility Regarding Environmental Damage</th>
<th>Consumer/Public</th>
<th>Governments/Policy Makers</th>
<th>Companies/Brands</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.30%</td>
<td>30.90%</td>
<td>35.80%</td>
<td></td>
</tr>
</tbody>
</table>

It is interesting to observe that the consumer attributes almost the same responsibility to the different parties involved. The responses show that the consumer sees ecological problems as a concern of everyone and not only of governments or big corporations.

This shows that also they are willing to make efforts to change the current ways and if the right options are offered they will embark on helping the fashion industry to diminish its environmental footprint.

But when asked about organizations that help brands to produce in better ways, only 27.2% answered that they know such organizations, which comes to show that if a brand is connected with a certifying label or organization, better communication of that label and what it stands for must be achieved to put the message more efficiently across.

The last section of the questionnaire focused on G-Star shows that 81.5% of the respondents know the brand, but only about 50% know where the brand comes from. The 66 respondents that know the brand have heard of it mainly in magazines (42.5%), window displays (33.8%) and outdoor ads (28.8%) and they answered that the main reasons for choosing G-Star are design/fit (28.8%) followed by quality (12.5%), trends (11.3%) and price comes at last with 1.3%.

Here what can be concluded is that for a brand like G-Star it’s important to communicate with its consumers through good magazine and outdoor advertising and to keep on presenting innovative products with good design and competitive edge. Price, according to the respondents, seem not to be the most important factor when buying G-clothing, showing that if an hypothetical eco collection was to be developed, the consumer would be willing to pay more if its quality and design was justifiable.

10.1.5 Conclusions
From the questionnaire results and analysis it is easily identifiable that number of consumers aware of environmentally friendly fibers and clothing is not as low as would be expected. The public in general feels that they are also responsible for the problems of the environment and if given the right options they are willing to buy and spend more on clothing that attends to ecological concerns.
What the consumer is not aware is of labels and certifications that give clothing brands its ecological factor, and that has to be taken in account when a company wants to use a body like MVO Nederland to help in bring sustainability to the boardroom. More communication efforts are therefore necessary, the consumer needs to be well informed of what those organizations are involved with and how they helps brands in being a better world citizen.

With brands like G-Star, that have become well-known and the consumers are loyal because of its esthetic value, fit and quality, making efforts to use more organic cotton, would be okay even if the average price of the garment must go higher, the consumer seems to be willing to pay more for a good quality product that is produced in a better way for the environment, because it adds a different value to its purchase.

10.1.6 Direct Interviews

As part of the primary research two different professionals were interviewed. The first was Paula Pontes, founder and head designer of the Dutch brand “TUBE”, where the author was an intern for 6 months, which produces different types of fashion bags using only materials that have been discarded by different industries and that otherwise would go to landfill and/or pollute the environment.

The direct interview occurred at the TUBE design atelier in Enschede, where the brand is located, on the 15th of March 2008. For the full transcript of the interview please refer to appendix.

The main findings of the interview with Mrs. Pontes is that the Internet has a growing importance in the divulgation of sustainable brands and that that medium has helped the brand divulgate its philosophy and promote its products. Many consumers that are interested in those types of product use the Internet as main medium to gather knowledge and information about sustainable brands and available products.

Furthermore the designer exposes how difficult it is for a small, handmade label to be sustainable in its processes, mainly because of the lack of the right sustainable materials and lack of investment on those materials. When asked about if consumers were aware of the impact of clothing production on the environment, the designer shared that it has become, in the last 10 years, very important in purchasing decisions, this is because of legislation, that demands labelling to be more comprehensive and also the fact that the consumer is starting to ask more questions about the human and environmental conditions of clothing production processes. The consumer is very curious of what he\she buys and this interest and search for awareness is increasing more than ever.

Concerning other brands and their efforts to become sustainable, the response was that there is lot of work to be done and many brands are only interested in financial well-being. For a fashion company, low producing costs means high sales and profits and that model is difficult to leave behind. But other
developments, like global warming and pollution, are making awareness of fashion’s environmental ways a factor in the decision making process.

From the interview, can be concluded that the designer sees, since the beginning of her sustainable brand, many changes occurring and that the consumer is increasingly interested in deeply knowing how the clothing that is available came of existence. The problems are the lack of investment in sustainable fabrics and in ecological design and the raw materials used that are extremely polluting for the environment.

The second performed interview, which has already been discussed Chapter 7.2.2, with Geert –Jan Davelaar, project manager for the Dutch CCC, was advised by this project’s process coach, Patricia Brien, in order to have an overview of how this NGO is handling human concerns in the fashion industry and how brands and the general public is responding to its efforts.

The interview helped to clarify the position of activists and MSI in tackling ethical concerns in the industry. Despite not being directly involved with environmental concerns, the CCC is hoping in the future to make more efforts in that direction.

For certain fashion companies a body like the CCC, can represent a threat because of the awareness they create in consumer groups and society in general. Instead of regarding this type of organizations as intimidating, brands like G-Star should work closely together with this type of stakeholders in order to have better knowledge of the concerns and problems regarding human and environmental conditions of the fashion industry. For many managers, mainly at senior level, bringing such activist groups or stakeholder can be regarded as a menace, but with dialogue and mutual efforts, it can only represent gains in the long-term.

G-Star has to promote dialogue with consumer groups, NGOs, producers, suppliers so that together better solutions and transparency can be achieved, which can only but please stakeholders and investors.

10.1.7 How Does Eco In Mainstream Shop Floors Looks Like?

To understand how brands that have released collections promoted as ecological or environmentally friendly are marketing their products and how the consumer is responding to those collections, shop observations felt necessary, so that a better understanding of the market’s response to such products could be achieved.

The three stores that were visited are Jack & Jones, Levi’s and H&M. All of them located in Amsterdam’s Kaalverstraat, the main shopping area in the city.
Jack & Jones Shop

The company released in 2007 the first eco-collection with plans to do so the following year, which is available in stores now and certified by the GOTS with the EKO Sustainable Textile Certification and the Fairtrade/Max Havelaar certification.

The garments were displayed in a separate section of the shop with specific banners and visual material talking about the benefits of the collection and more information was made available through a brochure that explained why the brand started this collection and also how the consumer could indentify the eco garments. This seems rather unnecessary, since specific merchandise stand was built for this collection and was hard to miss.

Many of the shoppers in the store would stop by the stand and look at the garments but only a small amount of them grabbed the brochure and read it in the shop. At the time of the observation, only one sale of an eco product was witnessed, during a period of 30 minutes. Some of the shoppers passed by the collection without giving it much importance or if it caught their attention seemed to be because of a particular design or print.

When one of the shoppers was asked if he would rather buy the eco collection because it was better for the planet instead of the normal garments, the answer was: “Only if it has a nice design and I really like it, but I would not just buy it because it’s good for the environment.”

The impression the collection gives is that Jack & Jones is only trying to attend to another trend in fashion, in this case the green trend and the company’s environmental efforts seems to stop there.

Levi’s Shop

Visiting the Levi’s shop was mainly because of the release of the first certified eco jeans model certified by Control Union, with the EKO Sustainable Textile Standard.

There was no reference in the shop about this product and it took awhile until it could be found. Even after asking the sales assistant, who was not aware of this model and much looking, the Levi’s-Eco jean was found, only identifiable by a green Levi’s label similar to the traditional red one in the right back pocket of the garment and a tag informing about the use of certified organic cotton (see Fig.11)

What is curious is that the staff could not give any information about this garment and was
completely unaware of its existence, which leaves to conclude that Levi’s environmental efforts have not reached through the entire staff. For a brand like Levi’s, a different approach was expected. The staff must be well informed about the brand’s products and must also be able to explain to shoppers about it.

**H&M Shop**

During the visit to H&M, the efforts the company is doing in regards to the use of more organic cotton in its collections could be observed. The products that are eco or that use organic cotton is present in many areas and it feels that is not a marketing attempt but a true effort to include more alternative fibres.

In the children's department the majority of the clothing is made with organic cotton, in other areas many garments can be seen with an organic cotton tag, not overly shown, rather discreet. The Organic Exchange with the OE Blended Standard certifies H&M’s eco-friendly garments.

Many of the shoppers were purchasing organic garments and in every rack there were garments that use certain amounts of organic cotton. It felt that H&M was rather trying to educate the consumer by presenting so many garments with organic cotton. For H&M loyal costumers seem to be difficult to avoid the eco garments, since so many are offered. Since 2007, the percentage of organic cotton used by H&M has raised considerably and that can be seen in the shops.

Instead of intensively marketing its eco-products, the garments are all displayed together and there is no in-store references about H&M environmental efforts or collections. These products are just naturally offered and it’s up to the consumer to look for them or to discover what they bought during or after the purchase.

One of the shoppers shared that she is very happy to see that such a big company as H&M is selling organic cotton garments and that the price is the same as other clothing in the H&M store. She also stated that recently she prefers to buy clothing with organic cotton because of a documentary she saw in the BBC, about the problems with pesticides in traditional cotton production, which she was unaware of before.

**10.1.8 Summary/Recommendations**

Mainstream brands have already in their shop floors eco products and each brand shop visited is doing the marketing in its own philosophy and transmitting its own particular message. Doing the shops’ observation proved that G-Star should already have started with their own eco contribution for the market. But since it has not, the company can now analyze what and how other brands are doing and do it better in the G-Star style.

From the shop observations, it is important for G-Star to inform the staff at all stores selling G-Star products about these eco products, who certifies it, what is the story behind and what characteristics it presents. The staff must be able to completely elucidate the consumer about the product and its particularities.
Secondly any eco-collection must be well identifiable by means of posters and brochures, with the certification obtained explicitly showed and explained, furthermore the eco-products should be part of a strong denim message, that ties G-Star raw, functional style with eco friendliness and attention for the environment. Shopping bags, tags and other packaging material given at the moment of sale should all be environmentally friendly.

From the observation done at H&M, its clear that a small amount of organic cotton should be offered in all garments whenever possible, this would be for garments like t-shirts and sweatshirts mainly. Not necessarily backed up by extensive promotion like denim ought to be, but just presented as blended yarn, so the consumer becomes even more familiar with G-Star use of organic cotton.
CHAPTER 11. Advisory Report for G-Star’s Environmental Strategy

This chapter presents the conclusions in form of an advisory report for G-Star to improve its current strategy regarding environmental attributes. Not only it can be used by G-Star but also by another other company that seeks guidance in improving its current activities in regard to the environment.

11.1 Current Environmental Efforts

According to Porter (1985), a strategy in a firm is the pattern of major objectives, purposes, or goals and essential policies and plans for achieving those goals, stated in such a way as to define what business the company is in or is to be in and the kind of company it is or is to be.

A strong strategy statement is important, to define priorities and also to provide a sense of union within the business and direction towards which everyone in it can work for. It must summarize the intentions of the company and brings all employees working for the same objective.

At the corporate level, G-Star’s environmental strategy should unify all its business activities to be in line with the same overall goal, to assess and take action regarding negative and positive environmental impacts of all activities. A possible strategy statement, based on the definition of sustainability, would be to reconcile the economic growth of the company with caring for community and protection for the environment.

It is not practical for any company to attend to all impacts simultaneously; priorities must be established based on inputs from external and internal shareholders. While in a strategy of growth, it is fundamental for G-Star to be able to sell more products while keeping in mind environmental protection.

Summary of G-Star’s current environmental efforts:

• Association with MVO Nederland.
• Establishment of a more assertive code of conduct alerting for the brand’s environmental and social standards.
• Efforts in developing a rather comprehensive CSR program.

Possible problems from current strategy:

• Poor transparency and traceability.
• Lack of trust from consumer and shareholders.
• Negative brand image due to lack of efforts on environmental and social concerns.
• Employees cannot work towards an overall strategic environmental goal if this is not specified.
• Complex supply chain, difficult to control because of many producers in developing countries, where is also complicated to account for ecological concerns.
11.2 New Strategy and Objectives

To development a strategic plan G-Star must focuses in the areas that have the most potential for improvement and also that represent most environmental impact. But as mentioned before it would be unrealistic to try to attain to all environmental impacts in its strategy. The suggested areas to action on are:

**Efficient energy use:**

- Work towards finding solutions to reduce carbon footprint and environmental risks posed by climate change and set an intensive interim goal to reduce footprint like M&S has done with its 5-year plan.

- Use only electricity from alternative renewable energy sources and establish renewable energy requirements, for e.g. wind power, photothermal solar power and photovoltaic solar power, in headquarters, offices, showrooms, logistical centers and stores.

- Build efficient new buildings with better lightning systems that can, long-term, reduce energy costs or well insulate or adapt old buildings. It’s advised to replace incandescent bulbs with CFL bulbs (possible to achieve 25% energy use reduction) over a period of 12 months in the Amsterdam headquarters, the 100 G-Star stores, the 80 showrooms and the 28 offices worldwide. After that period, warehouses and distribution centers bulbs should also be replaced over a period of 12 months.

- Logistics: All vehicles in the fleet that provides services to G-Star must be required to comply with the EURO 5 standard of the European Commission. This is the highest requirement in terms of Nitrous Oxides, Hydrocarbons, Carbon Monoxide, particles and smoke, and it is set to become mandatory for all vehicles registered from October 2009. In other words, in complementing these requirements, G-Star can be more than two years ahead.

- In headquarters, all offices and where existing, printers should be replaced by the Toshiba Tec B-SX8R printer that can wipe environmentally friendly paper clean and reuse it up to 500 times. Carbon dioxide emissions are less than a sixth compared of those of normal printers. This can be achieved over a period of 2 years.

- Shops: Develop sustainable stores by fitting new lighting equipment like CFL bulbs, offer sustainable awareness courses and material to staff and use only packaging, tags and bags that are FSC or PEFC certified, both are international standards that guarantee that paper is used in sustainable manner. (More info at [www.fsc.org](http://www.fsc.org))
Adoption of green building design:

- Make all stores, headquarters and facilities based on sustainable design and construction standards and develop respective criteria.
- Create smaller buildings that cost less to heat and cool and construction methods suited to the climate and site in order to diminish costs in heating and cooling.
- When wood is used it should be limited to harvest number.
- For headquarters, all showrooms, stores and office buildings G-Star must obtain the ISO 15392:2008, which is the standard for environmentally and socially sustainable construction. It makes sure buildings do not affect the environment and it is based on the concept of sustainable development as it applies to the life cycle of buildings and other construction works, from their inception to the end of life (ISO, 2008).

Improved waste and water management:

- Exhaustive monitoring and analysis of waste management activities to understand critical areas and develop criteria.
- Reduce waste by reusing materials and recycling efforts: cardboard, plastic and fabric waste should be separated at source and reused. This should be done so 100% of this waste is to be used.
- Other types of waste such as oil, batteries or florescent matter must receive special attention from certified personnel who destroys them.
- Store: waste management involving the selective collection, by authorized managers, of cardboard, plastic, coat hangers, security tags and office waste.

Sustainable product design and packaging:

- Design and packaging must respect sustainable materials, elimination of harmful components and reuse of materials and be certified: all packaging, tags and labeling, including store bags should be FSC or PEFC certified.
- Plastics bags used must be made from biodegradable matter.
- Prioritizing the reuse and recycling of cardboard boxes, coat hangers and office waste, through a system whereby they are returned to a logistical center.
• Use less metal on studs and rivets, by adopting techniques like reinforced stitching, recycled metal or consider welding seems electronically in t-shirts.

• Eradicate restricted substances and chemicals during yarn treatments and jeans finishings by adopting new ecological procedures and substances like prereduced indigo, potato starch and mimosa flower.

• Use organic cotton thread and a minimum amount of organic cotton in all jeans and the rest of the collection.

• Consumption of energy during maintenance by consumer must be taken in account, use labeling to inform consumer of benefits of washing at 30 degrees. As the tag from M&S (see fig.12) G-Star labeling must tell the consumer that the benefits of washing at 30 degrees when not dirty.

G-Star’s efforts for sustainable growth should focus in the areas mentioned above. All activities of the company must strive to implement sustainable solutions in these areas and all employees must be aware of their role in the entirety of the strategic plan. For this it is important to have well defined strategic objectives and to establish a formal framework around these in order to control operations.

**Suggestions for new strategy objectives:**

• Better transparency, traceability and accountability along the supply chain.

• Review all processes in current business model and evaluate practices and operations impacts.

• Attain for sustainable development in all activities- aligning with source materials and suppliers that are also good corporate citizens.

• Create environmental awareness at design, supplier, staff and consumer level.

• Ensuring business partners/suppliers apply the same company standards regarding sustainable development.

• Improve products and its environmental impact through innovation.

• Take responsibility for products total lifecycle.

• Create awareness of environmental impacts at all stages of product life

• Establish better company image with more transparency for consumers and internal and external stakeholders.

• Incorporate environmental concerns in its mission statement and philosophy of the brand.
11.3 Business Unit and Functional Level Solutions

At the business unit level, G-Star should take strategic action by establishing an environmental plan that can tackle threats coming from competitors, changes in legislation, economic and social cycles as well as consumer changes. This should be a comprehensive plan, with concrete targets for a specified period of time.

With this in mind is also advisable for G-Star to design and implement its own EMS and acquire an ISO 14001 certification, attending to the areas that present most possibility for improvement and the company’s necessities and concrete possibilities for action. Environmental initiatives must be profitable and represent competitor’s advantage; it should constitute a prow-growth strategic effort.

At functional level, where most of the practical solutions need to be implemented, the suggestions are the actions discussed in point 11.2 and in addition:

- Develop consistent approach for assessing and communicating environmental attributes and better metrics on impacts by adopting ISO standards on green building and environmental management referred earlier.

- Adoption of a MSI approach, where the concerns of other groups not belonging to G-Star, can be identified and incorporated into the strategic planning. It is advised to develop better relationship with CCC in Holland.

- Create environmental training and planning for all employees, designers and producers, so that staff levels are working toward the same goal and awareness is generated regarding sustainable development. Through training programs, brochures and booklets on sustainability for all G-Star staff

- Create better transparency in business action and traceability of products along the supply chain. Publicizing all company actions and efforts, which are being made towards environmental stewardship, like a restricted substance list, can achieve this goal. It is advised to publish efforts in the environmental context by adding information to www.G-Star.com or create a specific independent page only concerned with communicating efforts regarding eco concerns, policies, plans and results.

- Stimulate dialogue with factory workers, farmers, owners, designers and 3rd party auditors to provide greater transparency – from factories and manufacturing partners that create products to the end of products’ lifespan.

- Work together with certified organic cotton producers to stimulate the use of organic cotton in G-Star collections, the development of organically
produced fibers and participate on and develop sustainable community projects.

- Implement a comprehensive and realistic code for suppliers, informing of brand standards to be respected.

- Put same focus in marketing as in production.

- Reporting according to the UN reporting guidelines, the G3, which specifies guidelines for environmental reporting and diminish future accountability issues.

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**SWOT Analysis for G-Star Environmental Plan**

**Strengths**
- High brand aware
- Loyal costumers
- Innovative products
- Association with MVO
- Management owns company
- Member of the Organic Cotton Exchange

**Weaknesses**
- Too many suppliers and lack of control
- Complex supply chain
- Lack of transparency
- No association with stakeholders
- No environmental strategy
- Bad press and court case regarding suppliers’ human conditions
- Poor CSR programme

**Opportunities**
- Adopt MSI approach
- Use website to publicize actions and efforts regarding environme
- Build energy efficient stores
- Embrace new technologies and improve products having in mind ecological issues
- Raise awareness with staff and designers

**Threats**
- Competitors have already started with environmental plan
- Legislation is becoming harder on companies regarding the environmental issues
- Shift in consumer behaviour
- Cost of technology and investment
11.4 Summary/Recommendations

In conclusion, environmental initiatives should not be taken to protect the brand, but rather to enhance it. G-Star’s strategic actions must identify opportunities for improving its sustainable performance and when this is done publicly and awareness is generated in all business levels, it brings transparency and clears diverging opinions from stakeholders and NGOs.

Now is the time for G-Star to establish a formal framework around its environmental practices, while remaining economically viable. This can be achieved with good Research & Development and innovative products that maintain the brand’s competitiveness edge and design philosophy while keeping the triple bottom line – People, Planet, Profit- in mind and not only, attention to innovation and design must always be present. G-Star’s environmental plan can start by any small measure that the company can take as soon as possible. It would be rather unrealistic for G-Star to adopt all the suggestions mentioned previously, but if the company starts now with small steps like introducing a minimum amount of cotton in its collections and use less metal on rivets or recycled zippers is already half way to become sustainable.

G-Star environmental plans must encompass the concept of slow fashion, the design principles of Cradle-to-Cradle and the type of strategic vision adopted by M&S in their “Plan A” If G-Star analyses this elements and models, they can develop its own plan with its own identity.

Also if G-Star works with the right groups, like OE and CCC, the process of becoming sustainable will be facilitated and G-Star can implement sustainable practices in their own style. As design is such a central element for the brand, action towards sustainability should start there and then move to production processes and so on.
Chapter 12. Conclusion

The current problems of the fashion industry go far beyond a search for a new clothing style or better lead times. With so much attention being put on environmental problems, the extreme use of resources and the pollution that results from clothing manufacturing processes, is now more than ever regarded as a critical situation that must be looked at and effective action taken.

Fashion brands and companies can be part of the problem or the solution, it can seem overwhelming for any enterprise to commit to analyse the problems and develop a plan that just might start tackling some of the negative affects being experienced from clothing production, but this does not mean it is not possible. The consumer has slowly becoming more conscious and inquisitive about the products that are available in the market and in which conditions these products have been manufactured. G-Star must see this as an opportunity and regard environmental management with the same enthusiasm and effort as any other technological development and innovation and start now caring for the environment.

When problems are regarded as opportunities companies cannot but excel in its competitive edge. The organizations that have taken some steps in regards to environmental stewardship will in the future have a certain advantage, since its business models have already taken different shapes and have integrated environmental concerns, in regards to those that still see nature as an endless provider of resources.

A good corporate citizen will choose sustainability over short-term profits and will not exploit its supply chain without consideration for ecological, or social, standards.

With the right groups, activists and NGOs, any company can commence to analyse and prioritize what can be done and what must be done. It is not an individual or private task, caring for the environment is responsibility of everyone and it can only be done if governments, companies and the public in general, join efforts and start now.
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Appendix A – Interview with Geert- Jan, Clean Clothes Campaign.

Interview with Geert-Jan Davelaar, CCC headquarters Amsterdam, 21st March 2008.

How did the CCC started?
CCC started in the end of the 80’s due to problems with factories where C&A was sourcing. Activists and women’s groups did an action and realized that there were big problems in the clothing industry in general. The result was a campaign organization focused in cut-make-trim (CMT) processes. That is how CCC was born. Currently there are 13 campaigns in 12 European countries. Apart from these, we have a network of 200 organizations in producing countries composed of women’s groups, labour rights groups and many others.

As a network organization, these groups provide all the information. CCC doesn’t visit countries anymore; the grassroots organizations do all the work in the developing countries.

Why focusing only in the CMT processes?
Mainly because this part of the industry is so complex and so we want to focus in labour conditions in those processes. Other CCC might be interested in aspects like environment and have the liberty to do so; each campaign is independent in its interests.

How does the CCC function?
Each CCC functions independently in each country, the International Secretariat is in Holland and the Dutch Secretariat coordinates the funding and big projects. If the CCC in Spain is working in the same subject as the Finish CCC, the secretariat brings them together.

At factory level, when we know a European brand is sourcing from suppliers that have problems, we send the company letters alerting to the situation until they respond or they action. We also check on the social auditing that are performed, because not all auditors work the same way, some take an hour (definitely not enough) and others two weeks to perform an audit. We make sure the results they present are correct.

What is your function within the campaign?
I’m currently involved in a project with students from fashion colleges, 3 years and in 4 different countries; UK, Austria, Poland and in the Netherlands. In the Netherlands we focuses on students that will be the next big players in fashion. We try to make them aware of the positive and negative aspects of the fashion industry and what they can do when working for a brand or clothing company. Basically, to make things better, a more ethical, clean and fair industry. This year there is an explosion f CSR with students, they are getting interested but I feel a lot of tutors are CSR sick because it’s all so vague. What we want with students is to make them aware of the problems, engage and give them the necessary tools to work towards solutions in their future carriers.

Why the decision to start this project?
We were involved in a Dutch project called “Mode Bewust”, 4 years ago and with “Fashioning an Ethical Industry” in the UK, so we decided to develop a whole European project.

Do you also do awareness work with fashion designers?
We would like to include them, but fashion designers are more interested in fabrics than in labour conditions. We still need to find a way to include labour conditions in design processes. Designers should be aware that if they get a normal fabric in three weeks and an embroidered fabric also in three weeks, something is wrong with the labour conditions in that factory.

**How are companies, as G-Star, responding to your actions? Are they responding to the hype or making a true effort?**

It really depends on the company. The G-Star case is very complex and everything the public needs to know about G-Star is in our website. Because of the court case we had with the brand, this subject is very delicate. One of the most important CSR issues is transparency. There should always be a dialogue between all the stakeholders involved with the company, in society. Each stakeholder can learn, evolve and take things further, which is a crucial aspect of CSR. There is the need to talk about what is important for you as CCC, as a company, as an environmental organization or labour group. These groups need something from each other and that is very important.

Attending to the issues, really depend on the company and how serious they take the subjects. Many companies use organic cotton as a quick fix and then say ‘we care for the environment because we sell 2 organic t-shirts’, if you then look at the company it is only 1% of the whole collection, it means nothing. CCC wants to see the big companies changing this; they hold the power to get serious and active with these issues.

**Are you calling for a revolution in fashion?**

It could be a revolution, but many efforts in labour conditions have started long ago, many companies and groups are already working passionately on this subject.

**And why?**

There are many factors, there are new companies based only on ethical ideologies and there are some that need CSR as a PR tool, which is fine in a way. Companies in the fashion business should be aware that consumers and groups will ask questions about the things they say they are doing and what they are really making happen.

**What about the role of legislation?**

During the 90s because of a lot of pressure from groups about clothing production, companies started to implement codes of conduct. There are international norms by the UN, written down by the International Labour Organization (ILO), which specify human rights for everyone. What companies did was to adapt certain aspects of the ILO convention and made their own code of conduct. Brands and companies thought they would be okay, but then consumer groups asked for audits of the codes of conduct, they wanted to know who checks if the codes were being respected and put in practice.

For e.g., in China if a company has a code of conduct saying that people are free to organize themselves into an union, how is this suppose to happen if in China, unions are illegal? The code of conduct goes against local laws and makes the whole issue even more complex. What are companies really doing for workers to have their say?

**How is the role of the consumer changing?**

The group of consumers that want to know how and where their products are produced is getting bigger and bigger. We are now past the hype. You read about it everywhere.
The consumer awareness has to do with consumer groups involved, which there are many concerned with ethical and environmental issues in fashion and also with the easiness of getting hold of good information about it.

**And brands?**
One of the main concerns for CCC is brands, like Kuyichi, that promise a lot but delivers nothing, because we can’t check what they are really doing. Kuyichi only wants to source from factories with the ISO 8000 certification, but in 2006, their factory lost their certification and suddenly there were 0% fair labour practices/rights in the yearly report.
The supply chain is very difficult to control, in jeans production there are almost 50 different steps to cover and that is complicated, reason why companies should work together like Nike. Nike is involved in a good multi-stakeholder initiative (MSI). That was really necessary because all of the problems they faced in the past. Now Nike has whole departments involved with environmental and social issues and is really doing some progresses.

**What are sustainable solutions for environmental/social issues in fashion?**
MSI is one of the practical solutions at this moment but we are not there at all. It’s still very complex but we see things are starting to change. In China things change rapidly, now companies source from the interior of China where is cheaper and those companies even source from cheaper countries like Philippines and Bangladesh. There is a constant movement of sourcing companies.

**What concerns you have with fashion’s environmental impact?**
We are concerned with it, but we don’t have enough knowledge to cover that next to labour conditions in Holland, other international CCC might work on the subject because they work autonomously. There’s an overall strategy but actions are taken at local level.

**What results is CCC obtaining?**
In 20 years, the CCC has grown awareness at the general public level. Many companies are now working on their CSR, adopting transparent codes of conduct and publicizing them. There are also many small ethical brands coming up that push bigger companies on the ethical direction. On a factory level, we see that visual conditions (fire exit, clean work wear, masks) are improving a lot.

**How about problems with jeans production?**
The problems are the same in all factories, because many factories produce all types of garments not only jeans. Environmental impact of jeans is bigger though, because the dyes used are not ecological.

**What is your opinion about organizations that give out certifications (European Union, Oeko-Tex 100, The EKO-Label, etc)?**
They are no partners of ours and we are not involved with organizations that help, label or certify on environmental issues. What we know is that non-certifying organizations like Made-BY, make a lot o promises but have no clear results. They should show the consumer what their concern is, transparency, labour conditions or the environment but not present the issue as if everything is okay. Companies should make the consumer aware of the problems, state what they are doing and say, “we are not there yet”.
It is best for companies and brands to say they are doing the best they can, instead of saying that they are the best ethical company in the market, because there is no further transparency.
Appendix B – Interview with Paula Pontes

Interview with Paula Pontes, founder and head designer of the Dutch brand “TUBE”, which produces different types of fashion bags using only materials that have been discarded by different industries and that otherwise would go to landfill and/or pollute the environment. The direct interview occurred at the TUBE design atelier in Enschede, where the brand is located, on the 15th of March 2008.

How did you start your label?
I started TUBE right after graduating from the Arnhem Kunst Institute in 1997. For my graduation catwalk show, I wanted to enrich my collection so I designed a couple of men’s bags using bicycle inner tires and it was an instant success. In the show there were present important buyers and shop owners that became very interested and the first orders were in.

What’s the response to TUBE products?
The consumer is very interested in our product and in our philosophy. We participate in many expositions and presentations and until now the response has been very good. Also, we cannot underestimate the power of Internet, it has helped a lot to expose the products and it has brought different clients from various parts of the world. Right now we are in negotiations with a buyer from Japan.

But because we are a small label and much of the production is done in-house, the entire process from concept to production is very time consuming and sometimes is difficult to build up stock and deliver orders as fast as clients would like. The bags we produce are each unique and handmade; we are not interested in mass production or to become overly commercial.

Who is TUBE’s target group and how important is price as a purchasing factor?
Our target group goes in hand with its purchasing power. When I first started I was interested in designing for the young, trendy and urban, but that specific group can’t afford a one of a kind accessory. I quickly understood that our target group is much older, average between 30 to 55 years of age and often the trendy working cosmopolitans who are interested in fashion, art and going to galleries and museums. Only in Tokyo, the people interested in our product are quite young.

How do you find your materials?
In the beginning I simple called a factory that I knew had materials to be discarded and that I could use to make bags, like vinyl billboards and other industrial waste. I found very interesting things in the garbage. Later on I decided to place containers in the factories that were appealing to me so they could dump the materials there.

How aware is the consumer about the impact of fashion on the environment?
It’s now, more than ever, going in the right way. All started with the correct labelling of garments imposed by legislation. Now the consumer is very interested in knowing how the products purchased are produced, in what human and environmental conditions and where.
How worried do you think other fashion brands are with the effect they have in the planet?
There’s still a long way to go I think. Brands are mainly interested in making money and the cheaper you produce the more money you make. But awareness of environmental concerns starts to be a philosophy or strategy for business. Some brands are already using as PR or marketing strategy because there’s are more consumers interested now about it than in the past. The bio food movement is growing very strong; maybe the fashion industry is starting a bit too late.

**Can eco-design be mass-produced?**
No doubt about it. It’s only a question of finding the right investors.

**What are fashion’s main problems of today?**
Mainly, the production of raw materials have a big impact on the environment and is extremely polluting and we still remain dependent on production from developing countries, where products are cheap and acceptable technically. The problem is that in those developing countries human or environmental conditions are not accounted for. But today the consumer knows that what happens in Chinese factories, the way workers are explored and how there’s no concern about the environment. And this means that there’s room for change. Hopefully!
Appendix C – Online questionnaire

1. Fashion & Environment Survey

Thank you for participating in this research. The duration of the survey is approximately 4 minutes.

* 1. What’s your age?
   ○ <18
   ○ 18-25
   ○ 25-30
   ○ 30-35
   ○ 35-40
   ○ 40>

* 2. Gender:
   ○ Male
   ○ Female

* 3. Occupation:
   □ Student
   □ Employed
   □ Unemployed
   □ Other

* 4. Choose 3 of your favorite hobbies/leisure activities.
   □ Read books
   □ Sport
   □ Read fashion magazines
   □ Internet
   □ Shopping
   □ Music
   □ Going out/clubbing
   □ Family
   □ Other (gardening, sleeping)

* 5. How much do you spend on clothes monthly?
   ○ 0-50 euro
   ○ 50-100 euro
   ○ 100-150 euro
   ○ 150-200 euro
   ○ 200 euro>

* 6. What’s most important for you when shopping for clothing? (maximum 3)
   □ Fabric
   □ How/where is made
   □ Brand philosophy
   □ To feel sexy
   □ Necessity
   □ Quality
   □ Price
   □ Design/fit

* 7. Do you look for which country your clothes are made in?
   ○ No
   ○ Yes
8. Do you read tags, labels and washing instructions when buying new clothes?
- No
- Yes

9. Have you heard of organic cotton?
- No
- Yes

10. Are you interested in clothing that is produced in a planet friendly way?
- No
- Yes

11. Are you willing to pay more for clothes made of organic cotton or produced in a planet friendly way?
- No
- Yes

2. Fashion & Environment Survey

12. Do you own eco-friendly garments?
- No
- Yes

13. What do you do with your unwanted/old clothes? (maximum 2)
- Give away (friends, charity)
- Recycle
- Trash
- Sell
- Keep them

14. Are you familiar with CO2 emissions?
- No
- Yes

15. Who should take most responsibility for environmental damage?
- Consumer/Public
- Government/Policy makers
- Companies/Brands

16. Do you know organizations that help brands producing in better ways for the planet or workers?
- No
- Yes
  if possible name one:

17. Do you know the G-STAR brand?
- No
- Yes
### 3. Fashion & Environment Survey

**18. Where have you heard of G-STAR?**
- [ ] TV
- [ ] Outdoor ads
- [ ] Magazines
- [ ] Window displays
- [ ] Internet
- [ ] Other
- [ ] Not applicable

**19. What is the reason for choosing G-STAR?**
- [ ] Trends
- [ ] Quality
- [ ] Unique lifestyle
- [ ] Strong brand
- [ ] Design/fit
- [ ] Advertising
- [ ] Price
- [ ] Not applicable

**20. Where is G-STAR from?**
# Fashion & Environment Survey

## 1. What's your age?

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- **answered question**: 85
- **skipped question**: 0

## 2. Gender:

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## 3. Occupation:

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<td>Unemployed</td>
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<tr>
<td>Other</td>
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- **answered question**: 85
- **skipped question**: 0
### 4. Choose 3 of your favorite hobbies/leisure activities.

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<tr>
<td>Sport</td>
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<tr>
<td>Read fashion magazines</td>
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<td>Internet</td>
<td>42.4%</td>
<td>36</td>
</tr>
<tr>
<td>Shopping</td>
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<td>Music</td>
<td>51.8%</td>
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<tr>
<td>Going out/clubbing</td>
<td>38.8%</td>
<td>33</td>
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<tr>
<td>Family</td>
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<tr>
<td>Other (gardening, sleeping)</td>
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*answered question 85
skipped question 0*

### 5. How much do you spend on clothes monthly?

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<td>Brand philosophy</td>
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<td>To feel sexy</td>
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### 10. Are you interested in clothing that is produced in a planet friendly way?

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>11.8%</td>
<td>10</td>
</tr>
<tr>
<td>Yes</td>
<td>88.2%</td>
<td>75</td>
</tr>
</tbody>
</table>

answered question 85  skipped question 0

### 11. Are you willing to pay more for clothes made of organic cotton or produced in a planet friendly way?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>37.6%</td>
<td>32</td>
</tr>
<tr>
<td>Yes</td>
<td>62.4%</td>
<td>53</td>
</tr>
</tbody>
</table>

answered question 85  skipped question 0

### 12. Do you own eco-friendly garments?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>64.2%</td>
<td>52</td>
</tr>
<tr>
<td>Yes</td>
<td>35.8%</td>
<td>29</td>
</tr>
</tbody>
</table>

answered question 81  skipped question 4

### 13. What do you do with your unwanted/old clothes? (maximum 2)

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give away (friends, charity)</td>
<td>91.4%</td>
<td>74</td>
</tr>
<tr>
<td>Recycle</td>
<td>18.5%</td>
<td>15</td>
</tr>
<tr>
<td>Trash</td>
<td>18.5%</td>
<td>15</td>
</tr>
<tr>
<td>Sell</td>
<td>9.9%</td>
<td>8</td>
</tr>
<tr>
<td>Keep them</td>
<td>19.8%</td>
<td>16</td>
</tr>
</tbody>
</table>

answered question 81  skipped question 4

89
### 14. Are you familiar with CO2 emissions?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>40.7%</td>
<td>33</td>
</tr>
<tr>
<td>Yes</td>
<td>59.3%</td>
<td>48</td>
</tr>
</tbody>
</table>

*Answered question: 81*  
*Skipped question: 4*

### 15. Who should take most responsibility for environmental damage?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer/Public</td>
<td>30.9%</td>
<td>25</td>
</tr>
<tr>
<td>Government/Policy makers</td>
<td>35.8%</td>
<td>29</td>
</tr>
<tr>
<td>Companies/Brands</td>
<td>33.3%</td>
<td>27</td>
</tr>
</tbody>
</table>

*Answered question: 81*  
*Skipped question: 4*

### 16. Do you know organizations that help brands producing in better ways for the planet or workers?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>72.8%</td>
<td>59</td>
</tr>
<tr>
<td>Yes</td>
<td>27.2%</td>
<td>22</td>
</tr>
</tbody>
</table>

*If possible name one:*  
*Answered question: 81*  
*Skipped question: 4*

### 17. Do you know the G-STAR brand?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>18.5%</td>
<td>15</td>
</tr>
<tr>
<td>Yes</td>
<td>81.5%</td>
<td>66</td>
</tr>
</tbody>
</table>

*Answered question: 81*  
*Skipped question: 4*
18. Where have you heard of G-STAR?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>10.0%</td>
<td>8</td>
</tr>
<tr>
<td>Outdoor ads</td>
<td>28.8%</td>
<td>23</td>
</tr>
<tr>
<td>Magazines</td>
<td>42.5%</td>
<td>34</td>
</tr>
<tr>
<td>Window displays</td>
<td>33.8%</td>
<td>27</td>
</tr>
<tr>
<td>Internet</td>
<td>20.0%</td>
<td>16</td>
</tr>
<tr>
<td>Other</td>
<td>33.8%</td>
<td>27</td>
</tr>
<tr>
<td>Not applicable</td>
<td>25.0%</td>
<td>20</td>
</tr>
</tbody>
</table>

answered question 80

19. What is the reason for choosing G-STAR?

<table>
<thead>
<tr>
<th>Response</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trends</td>
<td>11.3%</td>
<td>9</td>
</tr>
<tr>
<td>Quality</td>
<td>12.5%</td>
<td>10</td>
</tr>
<tr>
<td>Unique lifestyle</td>
<td>2.5%</td>
<td>2</td>
</tr>
<tr>
<td>Strong brand</td>
<td>6.3%</td>
<td>5</td>
</tr>
<tr>
<td>Design/fit</td>
<td>28.8%</td>
<td>23</td>
</tr>
<tr>
<td>Advertising</td>
<td>2.5%</td>
<td>2</td>
</tr>
<tr>
<td>Price</td>
<td>1.3%</td>
<td>1</td>
</tr>
<tr>
<td>Not applicable</td>
<td>35.0%</td>
<td>28</td>
</tr>
</tbody>
</table>

answered question 80

20. Where is G-STAR from?

<table>
<thead>
<tr>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>56</td>
</tr>
</tbody>
</table>

answered question 56

skipped question 29