

TOWARDS SUSTAINABILITY IN GLOBAL SUPPLY CHAINS

**Summary of best papers 2019
in Sustainable Supply Chain Management**

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I would like to say thank you to all students who have taken this assignment. I had a great time working with you and the output of the papers was really amazing. I wish you all the best for your future career and hope to see you soon at CBS!

E. Fröhlich

Imprint

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Introduction

This manual book is a presentation of some of the best papers of the master class 2019 in Sustainable Supply Chain Management chosen by Prof. Dr. Lisa Fröhlich.

Vaishali Baid has summarised this manual taking data, research of these papers and information from available sources.

DISCLAIMER

The information provided in this manual is designed to provide a summary of Sustainable Supply Chain practices from the master papers of Cologne Business School students. The statements and opinions contained in the manual are solely those of the selected master papers and do not necessarily reflect those of the editors or the publisher.

Publisher, editors and reviewers do not accept any legal responsibility for errors, omissions or claims, nor do they provide any warranty, ex-

pressed or implied, concerning information published in manual. The publisher and editor are not responsible for the contents of external web pages linked to or from pages within the master papers.

The Radar Chart in every case study has been created by converting qualitative data from master papers into quantitative form. In any case, it doesn't reflect the organization standpoint or any conclusion on their practices. It is generated only for illustrative purposes.

The manual has been created purely for educational and non-commercial purposes. All sources and links being used for the manual are derived from selected master papers. The list of all sources is covered in the bibliography section of master papers. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgment in master papers.

Teacher vs. Student-Centered Learning

University teaching is subject to constant change in order to better prepare students for future challenges. There are two main directions:

"Teacher-centered" learning is the classical approach of university teaching. In this kind of learning situations, the teacher is mainly influencing the material the students are studying and the way they are studying it. This leads to the fact that the teacher is the most active person in the lecture hall and takes over most of the conversation. Typical "teacher-centered" classroom behavior is giving lectures, demonstrating concepts and giving instructions or reading out loud. The active contribution of the students is only a fraction of the lesson time, they are listening, taking notes, answering questions and completing tasks (edglossary.org/student-centered-learning).

"Student-centered" learning allows students "to lead learning activities, participate more actively in discussions, design their own learning projects, explore topics of interest to them, and generally contribute to the design of their own course of study". "Self-directed" learning also plays a major role which means that gaining knowledge may also take place outside traditional lecture halls, e.g. independent research projects (edglossary.org/student-centered-learning), which is used in this course Sustainable Supply Chain Management.

An **independent research course** "should be designed as original research and practice in presenting the results of an investigation. This pursuit must culminate in the student's own contribution to a discipline, whether in the form of fully-supported conclusions or in the form of a creative effort". In other words, the goal of independent research is to answer a question, not simply to gather information. Unlike independent study, independent research projects must have the potential to yield new knowledge" https://www.dickinson.edu/info/20112/environmental_studies_and_environmental_science/1292/student_research/3).

Even though the term student-centered learning is still used very diffusely, since it encompasses a multitude of teaching methods, it is nevertheless a first step towards the independent development of knowledge on the very complex subject of sustainable management. A combination of classical teaching, independent research and external impulses through guest lectures should enable students to devote themselves to innovative questions.

Paper Topic: Our growing vulnerability to systematic risk

“Humanity has become remarkably adept at understanding how to mitigate countless conventional risks that can be relatively easily isolated and managed with standard risk management approaches. But we are much less competent when it comes to dealing with complex risks in systems characterized by feedback loops, tipping points and opaque cause-and-effect relationships that can make intervention problematic” (The Global Risk report, 2018)

This quotation of the Global Risk Report 2018 was the starting point for the chosen paper topic. Companies have to face numerous risks nowadays, which can be systemized into economic, environmental, geopolitical, societal and technological risks. These risks overlap with the “Triple Bottom Line”, but show two major differences: economic risks are increasingly being replaced by geopolitical risks due to globalization. Technological risks are gaining in importance, especially because of digitalization and its impact on how companies are doing business in the future. Digital tools help to solve an essential problem in global supply chains – missing transparency, on the other hand they demand a clear social framework of values.

This led to three research questions:

Research Question 1 (joint part)

Define the chosen risk and discuss the importance of the chosen risk for your industry. Briefly discuss the sustainable supply chain of this industry and indicate which part of the supply chain is influenced by the selected risk.

Research Question 2 (individual part)

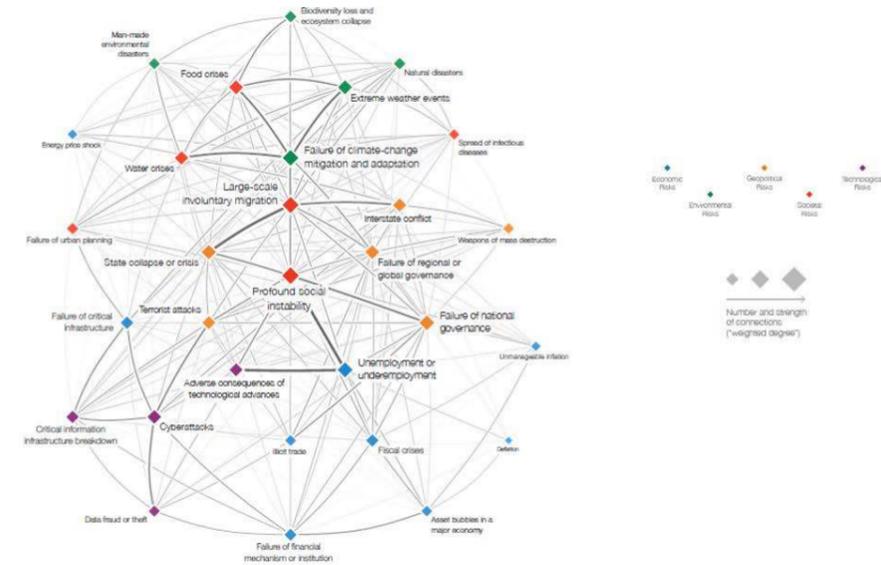
- choose one “solution” for the selected risk area and discuss possible measures from a more scientific point of view
- analyze the sustainable activities of the company within its supply chain and assess to what extent the addressed risk can be mitigated by the company activities.

Research Question 3 (joint part)

Summarize the findings of the previous two questions, compare the results of the 3 to 4 chosen companies and give recommendations how companies can improve their sustainable supply chain to mitigate the current level of the risk you have selected.

To choose an appropriate risk the students had to refer to the Global Risk Interconnection Map (Global Risk Report, 2018). They created their own “small risk world” like with a focus on food crises as societal risk, they had to consider water crises and extreme weather conditions. Based on this individual risk definition they formed groups, selected one industry, each student opted for a company of this industry. Then the analyzed the single companies according to research question 2 and 3.

The Global Risks Interconnection Map



Student-Centered Learning requires a different teaching/assessment approach

Due to the student-centered orientation, the theoretical approach in these papers is different. The research questions are given, but the results are open. The students have to search independently for a solution and define the research questions in such a way that they can be answered. For this reason, several presentation dates must be set, because only through joint discourse relevant solutions can be found. It might be the case that the lecturer

may also gain new insights, which in turn can be incorporated into the lecture.

On the following pages you will find a summary of the best paper. In order to make the results comparable, the industry and its sustainable supply chain are briefly described. In order to understand the risk focus of the individual papers, a systematization approach was developed which corresponds to the four main

risk groups of the Global Risk Map (only exception economical risk): Environment, Innovation & Initiatives, Leadership & Governance and Human Capital. Each company can thus be evaluated with regard to a wide variety of measures in the sustainable supply chain. This evaluation is summarized in a radar chart and each chapter concludes with a summary of the corresponding recommendations.

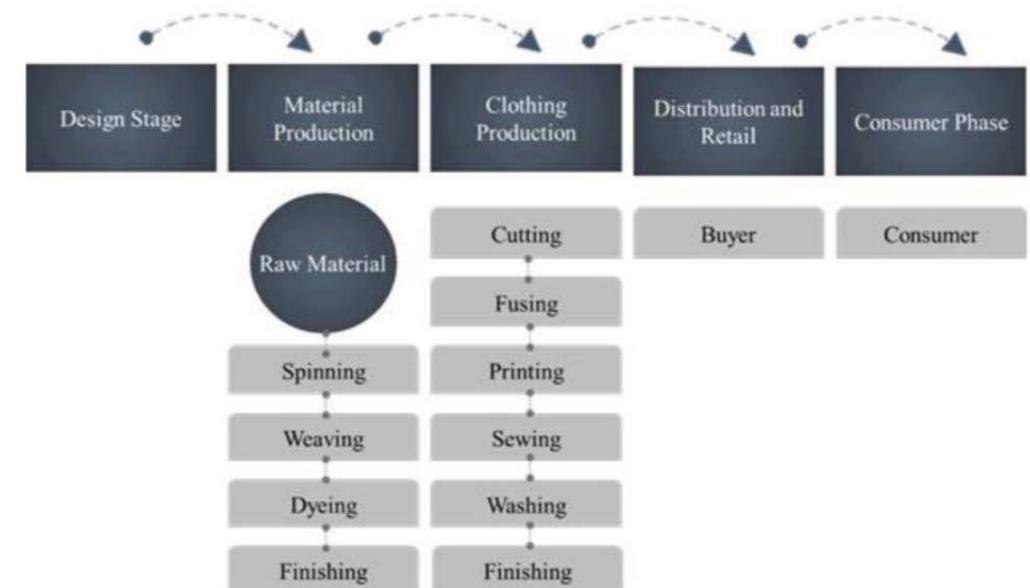
SUSTAINABLE SUPPLY CHAINS WITHIN THE FASHION INDUSTRY

Sustainable Supply Chain within the Fashion Industry

by Lena Ziebe, Marie-Sophie Rash and Ann-Cathrin Zimmer

The fashion industry, also called the clothing or apparel industry has gone through rapid changes during the last twenty years. Moving from designing only a few collections a year to bringing new clothes to the market every other week has changed the industry. This new development, called "fast fashion" and can be characterized by their focus on speed and low cost.

Supply Chain of the Textile Industry



H&M



The H&M group comprises nine unique brands: H&M, COS, Monki, Weekday, & Other Stories, Cheap Monday, H&M Home, ARKET and Afound. All these brands together offer its customers trends and styles within the fashion industry, sportswear, beauty products, accessories, homeware and food.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Renewable Energy:** H&M already used 96% renewable electricity in their operations.
- **Recycling and Reusing:** The company collect old and used material/clothes as resources for new fashion wear.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Sustainable Sourcing:** By 2020 H&M wants to reach a 100% sustainable cotton usage and in 2030 100% recycled materials or those which are sourced sustainably.
- **Sustainable Production:** It is planning to "change towards a toxic-free fashion future."
- **Sustainability Lab:** Cheap Monday which is a Sustainability Lab and is released once a year and its underlying recycling process includes the production of new garment out of old and used workwear.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Collaboration:** H&M and WWF have been working together on water stewardship purposes to make its processes more water efficient.
- **Organic Cotton Acceleration Projects:** It is a collaborative project founded together with H&M, Eileen Fisher Kering and Inditex the Organic cotton accelerator.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

G-Star



In 1989, Jos Van Tilburg developed a denim range named G-Star and quickly launched the "RAW" denim range, a synonym of authenticity in 1996. The ambition of G-Star is to be recorded as the leading denim organization that creates tomorrow's classic.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Sustainable Product:** Implemented a platform "Raw for the planet" to continually innovate in sustainable design.
- **Environmental Solution:** To minimize the environmental impact of their products they make sure, that the materials, washing techniques and finishes contribute to a more sustainable future.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Innovative Solution:** Innovative dyeing and finishing processes, including ozone and laser treatments, sustainable dyestuff like Earthcolors and the cleanest indigo technology.
- **Supplier Collaboration:** They work with their suppliers on proper use of chemicals and compliance, monitoring the quality and safety standards in their products, performing risk assessments and auditing and testing of their clothes.
- **Sustainable Manufacturing:** It manufactures their products together with their suppliers, building a trustworthy and long-term relationship to ensure continuity of the quality, look and delivery of collections.
- **Supplier Code of Conduct:** It ensures that the products are made fair under safe and fair circumstances.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Better Cotton Initiative:** G-Star is a partner of the Better Cotton Initiative with the aim to use 100% sustainable cotton by 2020.
- **Scorecards:** They created scorecards along the supply chain and each scorecard is broken down into broad categories.

Human Capital

Labour Practices/ Employee Health & Safety /Employee-Customer Engagement /Human Rights

- **Human Rights:** The products are manufactured in a responsible, preserving natural resources. This policy focusses on animal welfare, nature conservation and human rights.
- **Customer Initiative:** Made-By, an organization with a mission to "make sustainable fashion common practice".

Patagonia



Patagonia, Inc. is an American clothing company that markets and sells outdoor clothing. Patagonia developed into a worldwide operating retailer for sports like skiing, snowboarding, surfing, fly fishing, paddling and trail running. Patagonia commits 1% of its total sales to environmental groups, through "One Percent for the Planet".

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Eco friendly raw material:** All the raw materials such as cotton, wool, down, hemp and yulex are grown or won in a sustainable and most environment friendly way.
- **Organic Cotton:** They use organic cotton which is higher in quality and requires less water and chemicals.
- **Repair and Recycle:** The program offer the trade of used clothing which is then sold as second hand, the repairs of broken apparel or the recycling of worn out gear.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Transparency:** They make their supply chain as transparent as possible. They have listed fibers, materials and technologies that they use to describe what those materials are and what impact they are having as well as background information.
- **Manufacturing Technologies:** The criteria to which their suppliers have to comply to, such as their "4 fold" approach of supply chain decisions and their Chemicals and Environmental Impacts Program.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

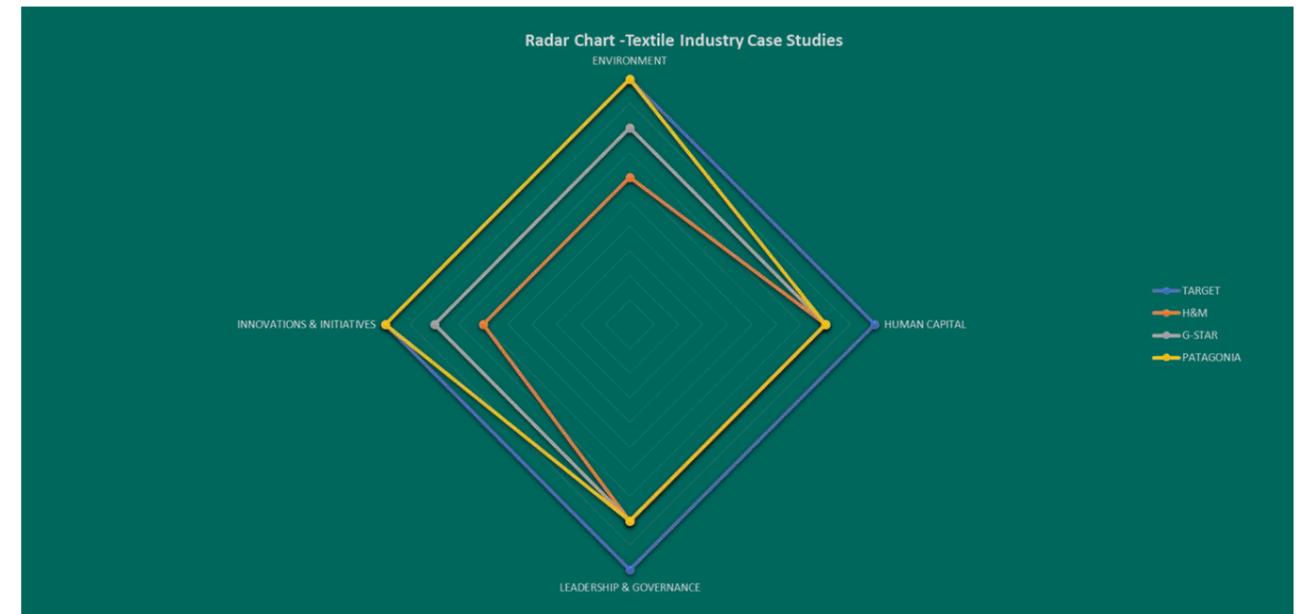
- **Collaboration:** They collaborate with Bluesign which ensures that environmental damaging chemicals are avoided from the very first step of the production process.
- **Footprint Chronicles:** Record about Patagonia's supply chain, with a particular focus in the sourcing of the raw materials and the manufacturing of their products.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Fair Wage:** The discussion about minimum wage versus living wage to create an effort towards fair salaries.
- **Local Programs:** invests in local programs that ensure the healthiness and safety of the staff.
- **Fair Trade Certified:** They have particular product lines that are fair trade certified. That ensures that the workers obtain an extra premium for each bought fair trade product.

Comparison of Sustainable Practices of Case Studies



CRITERIA	TARGET	H&M	G-STAR	PATAGONIA
Environment	5	3	4	5
Human Capital	5	4	4	4
Leadership & Governance	5	4	4	4
Innovations & Initiatives	5	3	4	5

Not yet Started: 1 Aware: 2 Committed: 3 Established: 4 Advanced: 5

Recommendations for Textile Industry

- Use of more sustainable fibers
- Investing in more R&D to explore new raw material that will require less water and pesticides
- Analyzing the environmental risks
- More transparent supply chain practices
- Defined sustainable activities as key performance indicators (KPI) as integration in the overall business process

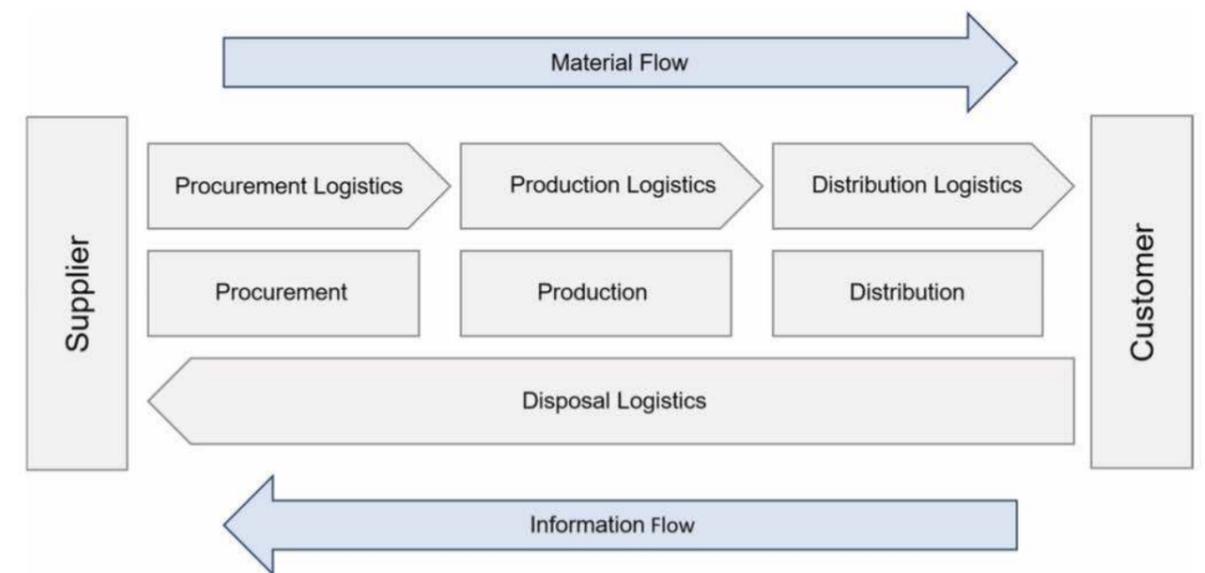
IMPLEMENTING A SUSTAINABLE SUPPLY CHAIN IN THE PARCEL DELIVERY INDUSTRY

Implementing a Sustainable Supply Chain in the Parcel Delivery Industry

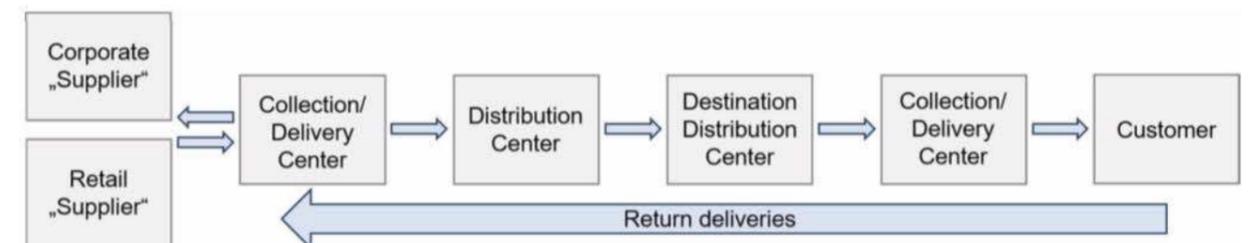
by Timm Berlemann, Anna Margarete Tönneßen, Raoul Christian Zwiorek

The e-commerce boom has led to an enormous growth of the parcel delivery industry which is projected to grow 9% annually. Three environmental and social risks are chosen which are considered to be most relevant with regard to a sustainable supply chain of the parcel delivery industry, namely, the "failure of urban planning", the "failure of climate-change mitigation and adaptation" and "man-made environmental damage and disasters".

Logistics Supply Chain



Supply Chain of a Parcel Company



Deutsche Post DHL Group

Deutsche Post DHL Group

Founded in 1995, the Deutsche Post DHL Group is a multinational logistics company which links more than 220 countries worldwide. DHL's businesses include courier services, air and ocean freight, contract logistics engineering and consultancy to all kinds of businesses and customers. Being an express carrier, DHL's company objectives comprise of timely deliveries and customer satisfaction.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Street Scooter:** It develops cost-effective electric vehicles in the year 2014, to develop a special electric vehicle for postal and parcel delivery. These vehicles are especially tailored to fit the challenges of urban last mile deliveries.
- **City Hubs:** This innovative concept aims at a further decrease fuel consumption through a change of the regular supply chain to reduce the amount of overall miles travelled.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Smart Trucks:** It is an innovative trucking solution that is leveraging IoT technology. Trucks are e.g. provided with IoT sensors, which enable real time route optimization.
- **Packing Stations:** It tackles the risks incurred by failed first attempt deliveries as well as the increased expense factor. After registering on a web-interface called 'DHL Paket', customers are able to change the delivery method of their parcel to one of the existing packing stations.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights



Federal Express Corporation

FedEx Corporation

FedEx Corporation is an American multinational courier delivery services company headquartered in Memphis, Tennessee. The company is known for its overnight shipping service and pioneering a system that could track packages and provide real-time updates on package location, a feature that has now been implemented by most other carrier services.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Pick Up Stations:** It runs these pick-up stations in collaboration with other businesses. It can be an optimal solution to reduce CO₂ emissions.
- **Measure Emissions:** FedEx still measures emissions separately from economic KPIs.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Electric Vehicles:** To replace combustion engine vans by alternative modes and equipment to deliver parcels.
- **Cargo Bicycles:** Using cargo cycles to deliver parcels from terminals called green hubs to their final destination. They optimize information systems in real time following the routes of the delivery drivers.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

Human Capital

Labour Practices/ Employee Health & Safety /Employee-Customer Engagement /Human Rights





United Parcel Service Inc.

UPS was founded in Seattle in 1907. Over time, UPS has developed into a full-service business, which provides logistics, global freight, financial, and mail services, meaning global distribution and logistics also involves the managing of information and funds besides the movement of goods, in order to enhance customers' business performance and improve their global supply chains.

Environment
Energy Management / Water & Wastewater management / Hazardous Material Management

- **Low Impact City Logistics:** It is a "depot-to-door" project introduced by UPS and several partners. The project aims to reduce congestions, curb side restrictions and emissions while also reducing operating costs and it is intended to address the challenges associated with urban last-mile deliveries

Innovation & Initiatives
Supplier Engagement / Alternative Raw Materials / Supplier

- **Route optimization and a rolling laboratory:** LICLproject offers huge potential for a sustainable solution for urban last-mile deliveries. LICL is a depot-to-door project. It aims to reduce congestion, emissions and also reducing operating costs.
- **Route Optimization:** Their route optimization software called "On-Road Integrated Optimization and Navigation (ORION)", uses artificial intelligence and advanced analytics to reduce miles by optimizing routes dynamically.

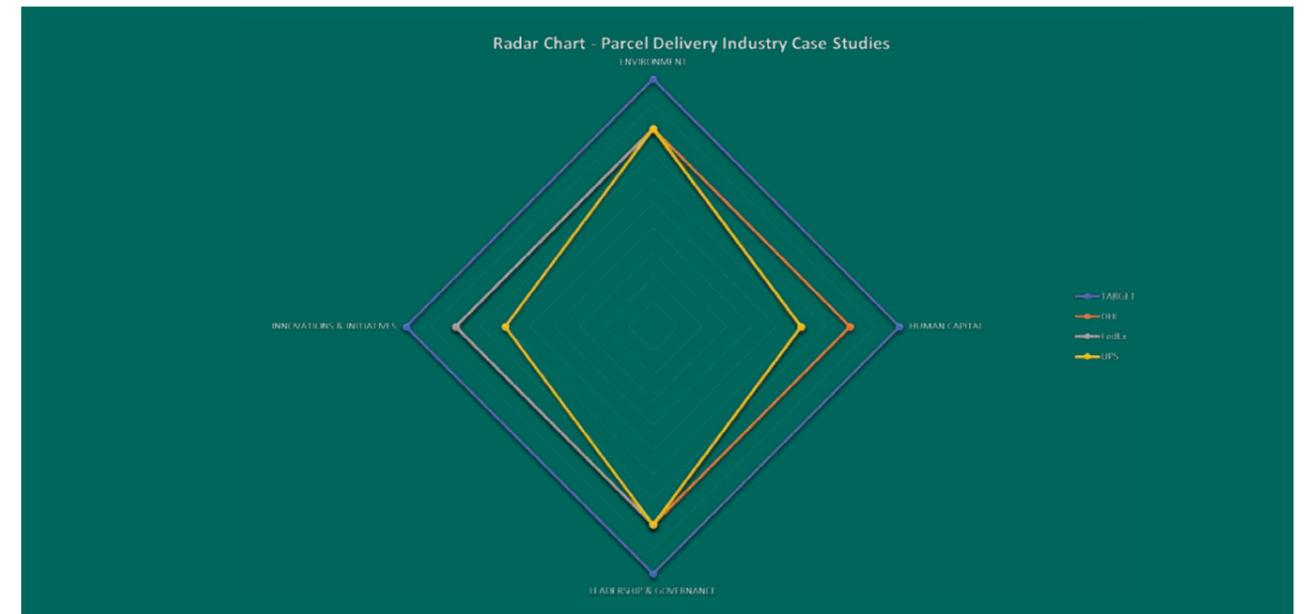
Leadership & Governance
Business Ethics / Reporting System/ Assessment /Policy

- **Consolidation:** Consolidating deliveries and delivering them to UPS access points, which are nothing more than pick-up stations. It reduces congestion and pollution overall.

Human Capital
Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Pick-up locations and customer preference deliveries:** A program which enables customers to reschedule their deliveries or send it to access points or different addresses.

Comparison of Sustainable Practices of Case Studies



CRITERIA	TARGET	DHL	FEDEX	UPS
Environment	5	4	4	4
Human Capital	5	4	3	3
Leadership & Governance	5	4	4	4
Innovations & Initiatives	5	4	4	4

Not yet Started: 1 Aware: 2 Committed: 3 Established: 4 Advanced: 5

Recommendations for Delivery Industry

- Solutions aiming to reduce the overall miles that have to be driven
- Solutions that improve the miles that have to be driven in terms of efficiency
- Collaboration as key for a more sustainable parcel supply chain

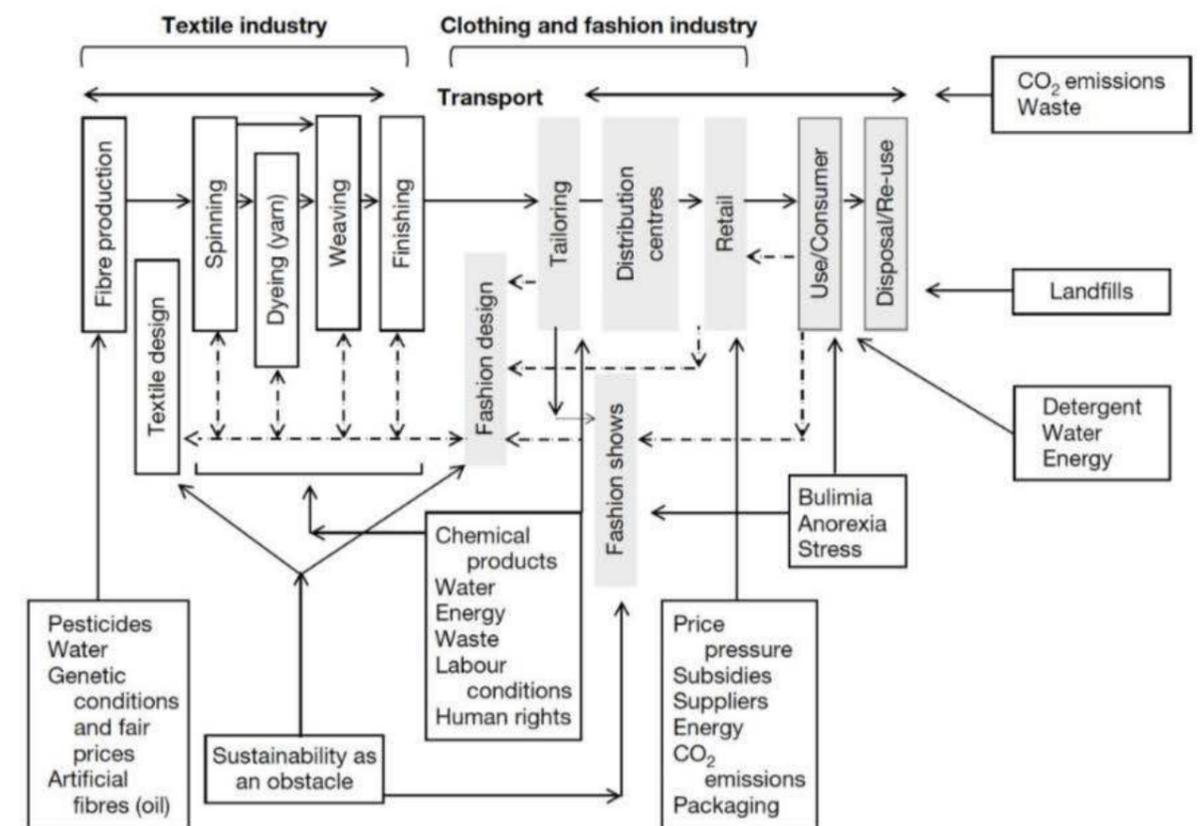
ENVIRONMENTAL RISK IN THE TEXTILE INDUSTRY

Environmental Risk in the Textile Industry

by Monica Ocampo, Dominic Jacobs, Daniel Kroll

The textile and fashion industry is one of Germany's most important consumer goods sectors with a revenue of approximately 65,1 billion Euros in Germany in 2017. Nonetheless, on a global scale, the apparel industry is growing the slowest with only 9% in terms of revenues in comparison to other consumer goods on the world market. In the industry, three main issues emerge from the supply chain that affect environmental risk: waste of resources, pollution and profit maximization.

Supply Chain of the Textile Industry



Picture Organic



Picture Organic is a French brand making outdoor clothing which was founded in 2008. The company has implemented sustainability as well as Fair Trade into the very core of their value creation and has worked for 10 years towards improving their standards. They claim that they deliver "100% committed responsibility and sustainability-driven eco-design".

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Cotton Sourcing:** Sourcing is conducted from places near to production sites which reduces overall pollution levels.
- **Recyclable Solutions:** The company offers to repair products in repair centers which are placed worldwide.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Alternate fibers:** To minimize the effect the raw materials used to produce the garments have on the environment, the company uses organically grown fibers and synthetic materials, often used for technical products, that are generated from recycled materials.
- **Transparency:** Picture Organic is transparent about their supply chain and controls their suppliers. To ensure their own standards they visit each factory up to 3 times per year.
- **Innovation & Technologies:** Investing into innovations and new sustainable technologies.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Certification:** The cotton factories are certified by the Global Organic Textile Standard or Organic Content Standard. The organically grown cotton overall produces 94% less emissions compared to conventionally grown cotton.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Fair Wear Foundation:** Suppliers are engaged in the Fair Wear Foundation, an organization concerning itself with the improvement of processes, and have signed a contract that ensures that a list of chemicals which are harmful to the environment and humans are excluded from their production.

Mipacha



Mipacha is a Peruvian fashion company, which was founded in 2013. Mipacha was founded in Cuzco, in the heart of Peru. They produce high quality shoes that are handmade by local people in Peru.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Eco Friendly Products:** All their products are eco-friendly and are free from toxic chemicals.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Highest quality material:** They use highest quality material for their production, which are not harmful to employees.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

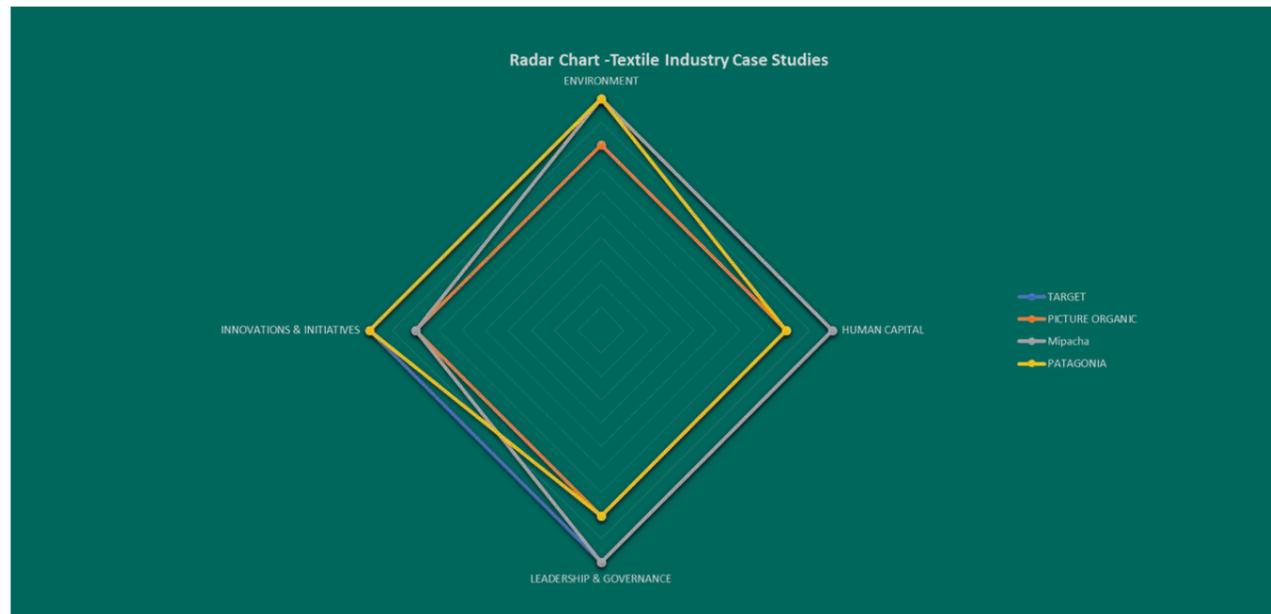
- **Local Community:** As a young company Mipacha is already aware of the fact of sustainable production but also the importance of fair treatment. Therefore, the company tries to operate exclusively with local Peruvian employees.
- **Working Condition:** Working conditions in the factories meet Western standards. All employees have health insurance, are members of a pension scheme, and women are entitled to maternity leave.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

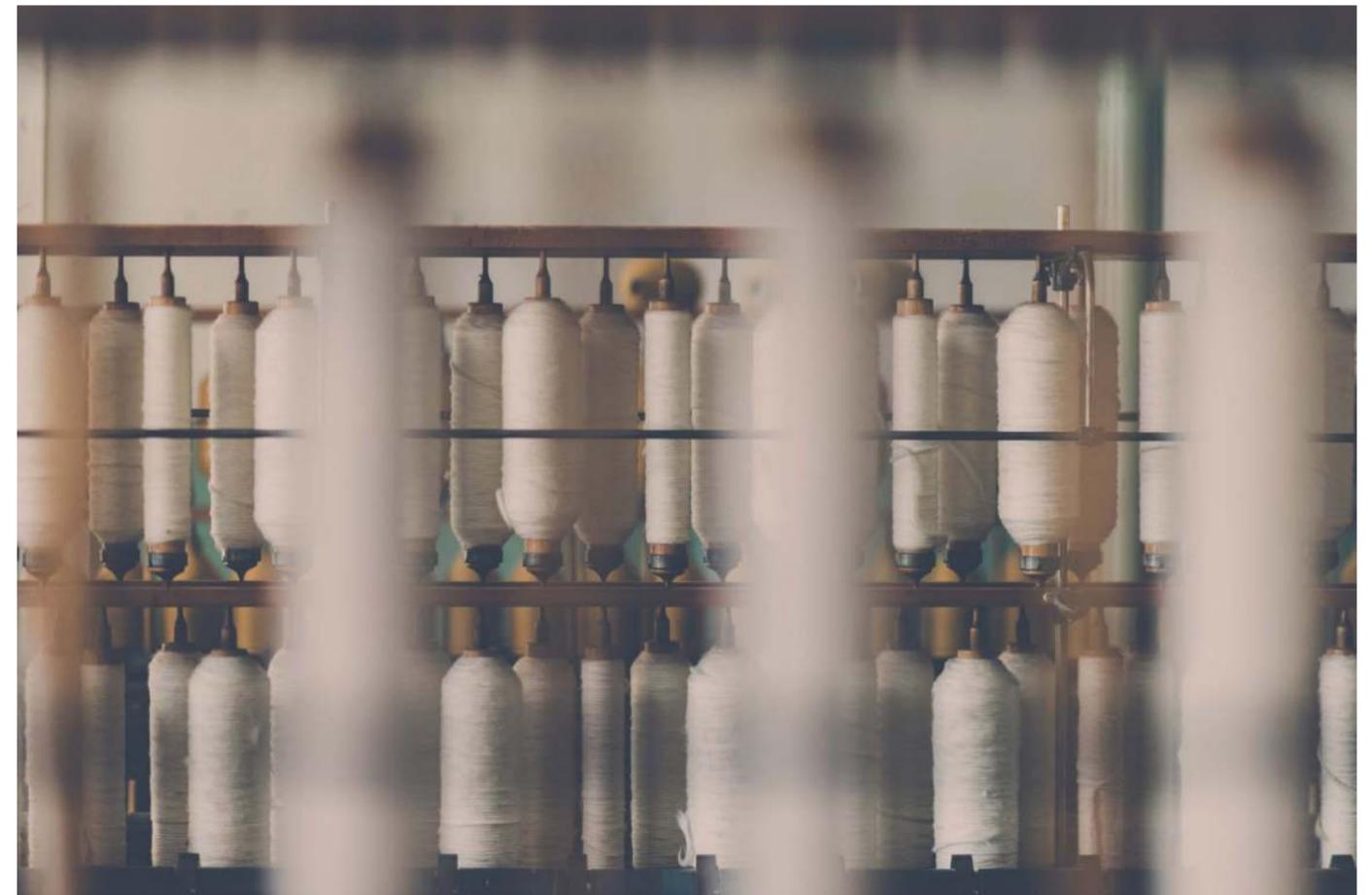
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Comparison of Sustainable Practices of Case Studies



CRITERIA	TARGET	PICTURE ORG	MIPACHA	PATAGONIA
Environment	5	4	5	5
Human Capital	5	4	5	4
Leadership & Governance	5	4	5	4
Innovations & Initiatives	5	4	4	5

Not yet Started: 1 Aware: 2 Committed: 3 Established: 4 Advanced: 5



Recommendations for Delivery Industry

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- Analyzing the environmental risks
- More transparent supply chain practices

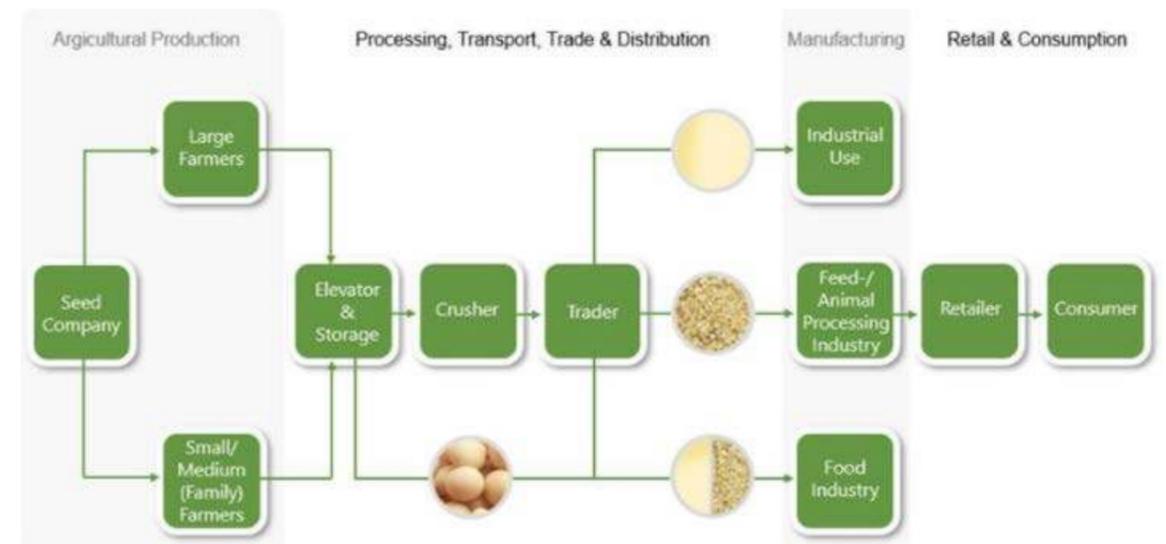
SUSTAINABLE SUPPLY CHAIN MANAGEMENT OF THE SOY INDUSTRY

Sustainable Supply Chain Management of the Soy Industry

by Alexandros Karipidis, Max Kluge, Louisa Loers

Over the last decade the global soybean production experienced rising popularity, reflected in the demand, which has increased more than that of any other crop. In fact, the global soy production has raised by around 60 %.

The Supply Chain of the Soy Industry



Environmental Risk Landscape of the Soy Supply Chain



Monsanto Company



The Monsanto Company was an American agrochemical and agricultural biotechnology corporation founded in 1901. In 2018, it was acquired by Bayer as part of its crop science division. It was headquartered in Creve Coeur, Missouri. Monsanto developed Roundup, a glyphosate-based herbicide, in the 1970s, and became a major producer of genetically engineered crops.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Growing Better Together Sustainable Plan:** It is set up in accordance to the "2030 Development Agenda" of the United Nations and its 17 Sustainable Development Goals.
- **USDA's 10 Building Blocks for Climate-Smart Agriculture Plan:** It wants to contribute to climate change and achieve a carbon neutral footprint by 2021.
- **Carbon Neutral Collaborative:** A consortium of leading experts on agricultural greenhouse gas emissions in 2016. Together they developed a transparent, verifiable, and scalable carbon framework to measure and report carbon reduction.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Soil Health Partnership:** To examine and improve farm management practices.
- **Midwest Row Crop Collaborative:** Brings together leading food and agricultural companies, such as Walmart, UniLever, Cargill and several other supply chain partners.
- **Technology:** Develop technologies to protect honey bees from the varroa mites parasite.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Commitments:** "Better Planet" comprises actions on climate change to reduce the use of natural resources. "Better Lives" is engaged to increase food availability and access, as well as improving farmers lives and society. "Better Partner" encompasses actions concerning more integrity and transparency.
- **The Climate Corporation:** Analyses data gathered through the observation of individual farmer practices in addition to satellite data, the weather and field trials from acres with certain digital tools.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Initiatives:** To work with farmers and communities to increase the diversity of landscapes and provide more habitat for monarch butterflies.

Cargill Incorporated



Cargill, Incorporated was founded in 1865 in Conover, Iowa. The United States-based company has grown from a single grain storage facility to one of the largest privately-owned companies in the world. The agricultural big player is offering a broad range of services in diverse industries, inter alia, the animal nutrition, the food, the beauty as well as the bioindustry.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Cargill Policy on Forests:** Commitment is focused on achieving the ultimate goal of eliminating deforestation across all their agricultural supply chains.
- **The New York Declaration on Forests:** A voluntary and not legally binding declaration aiming at stopping international deforestation by setting ten distinct environmental goals, signed by several MNCs, NGOs and governments.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Certification Programs for Supply Chain:** ISCC (International Sustainability and Carbon Certification) or the 2BSvs (Biomass and Biofuel Sustainability-Voluntary Scheme), which independently assess the company's soy supply chain according to certain sustainability criteria in order to adhere to, inter alia, sustainability standards of the European Union.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Brazilian Soy Moratorium:** A voluntary agreement on zero-deforestation in 2006.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Corporate Sustainability Council:** Stakeholders such as key customers or environmental organizations deliver input to actively tackle illegal deforestation.

The WhiteWave Foods Company



The WhiteWave Foods Company is an US-American company that has been acquired by Danone in April 2017. Wave Foods consists of eight sub-brands, namely 'Our Silk', 'So Delicious', 'Alpro', 'Vega', 'Horizon', 'Wallaby', 'Earthbound Farm', and 'International Delight'.

Environment
Energy Management / Water & Wastewater management / Hazardous Material Management

- **Environmental Management:** To avoid soybeans from deforested areas, such as Brazil or China.

Innovation & Initiatives
Supplier Engagement / Alternative Raw Materials / Supplier

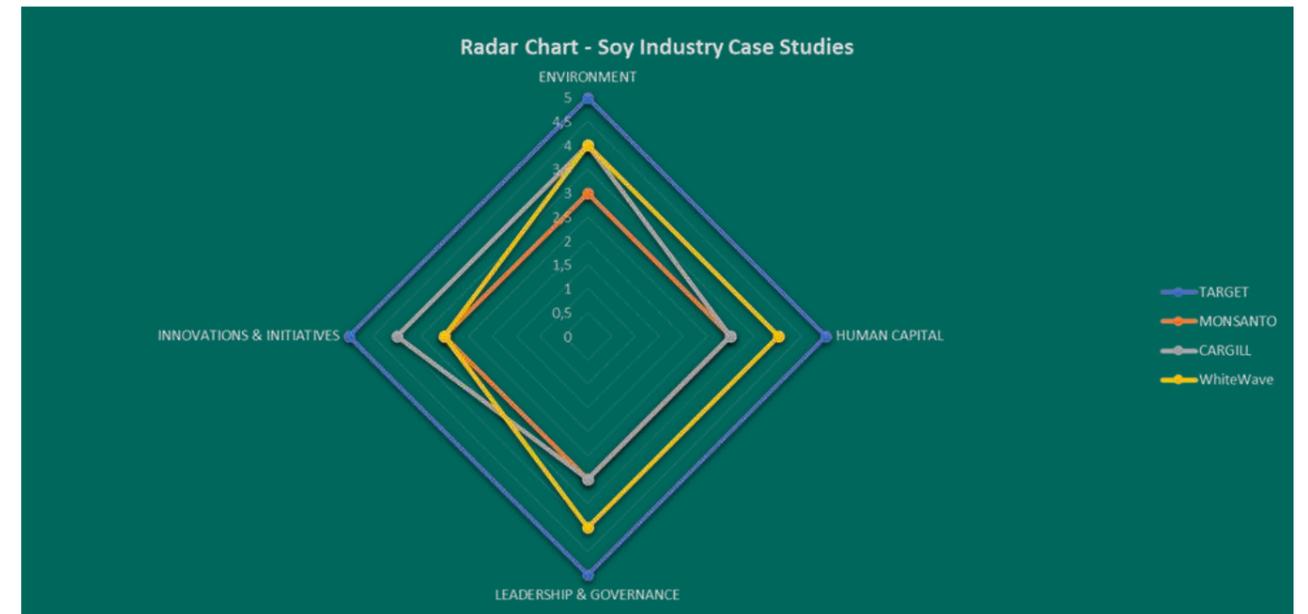
- **Local Sourcing:** It sources soybeans locally in Europe to avoid CO₂ emissions caused by transport.

Leadership & Governance
Business Ethics / Reporting System / Assessment / Policy

- **Pro Terra Certification:** It is based on evaluation on the Basel Criteria in cooperation with the "World Wide Fund for Nature". It also includes the Avoidance of Deforestation, Ethics and Social Responsibility, Environmental Sustainability and Environmental Impact.

Human Capital
Labour Practices / Employee Health & Safety / Employee-Customer Engagement / Human Rights

Comparison of Sustainable Practices of Case Studies



CRITERIA	TARGET	MONSANTO	CARGILL	WHITEWAVE
Environment	5	3	4	4
Human Capital	5	3	3	4
Leadership & Governance	5	3	3	4
Innovations & Initiatives	5	3	4	3

Not yet Started: 1 Aware: 2 Committed: 3 Established: 4 Advanced: 5

Recommendations for Soy Industry

- Understanding issues and establishing expectations
- Demonstrate the value of sustainable activities for the whole business
- Sustainability actions along the whole supply chain
- Improve governance and verification in terms of transparency
- Collaborative solution with other players in Soy Industry

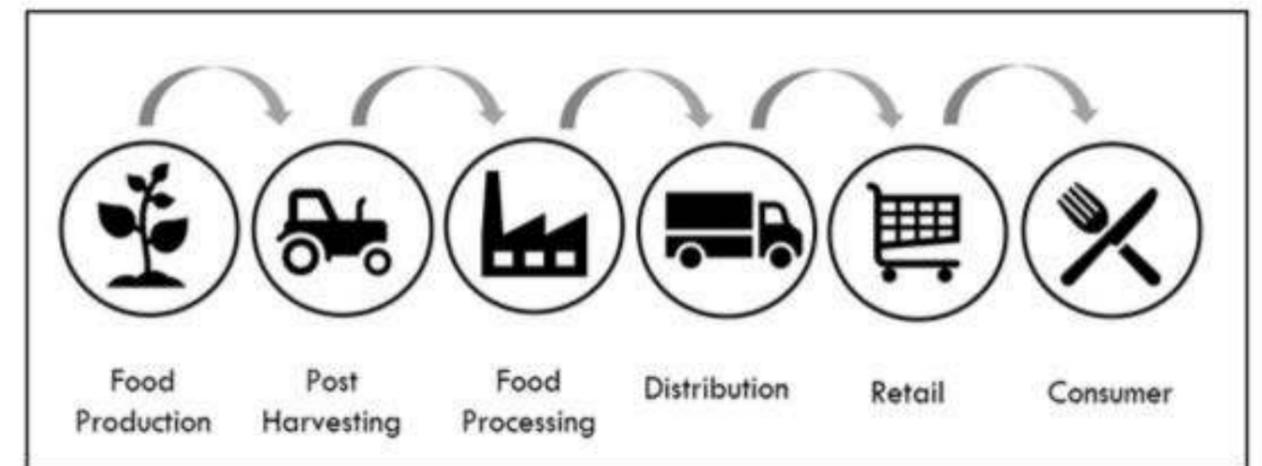
ASSESSING POSSIBLE SOLUTIONS FOR REDUCING THE RISK OF A WATER CRISIS IN THE FOOD INDUSTRY

Assessing Possible Solutions for Reducing the Risk of a Water Crisis in the Food Industry

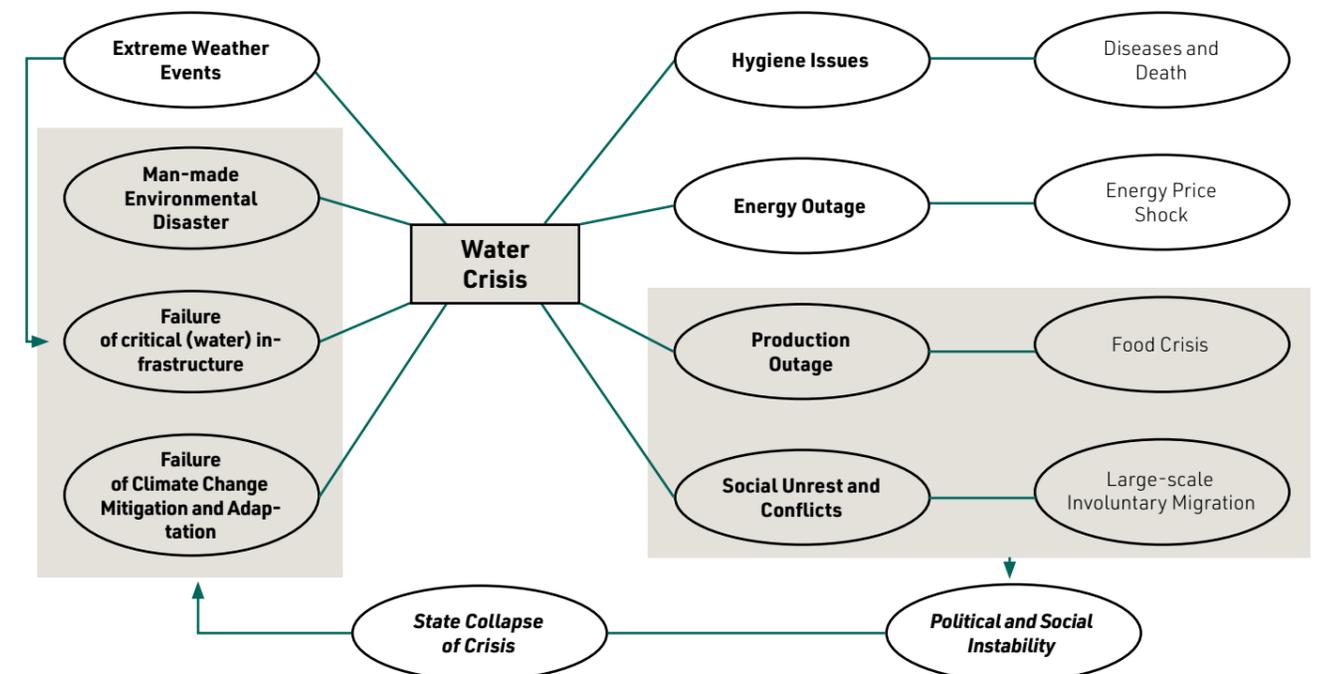
by Helen Cramer, Anna Höfer, Eva Potthast

Within the food industry, water is used in a wide range of processing methods and unit operations, such as soaking, washing, rinsing, fluming, blanching, scalding, heating, pasteurizing, chilling, cooling [and] steam production. Not surprisingly, the food industry is one of the most water intensive industries.

The Supply Chain of the Food Industry



Interconnections of risk areas related to water crisis



Source: Own Illustration

The Kellogg's Company



The Kellogg's Company is one of the most valuable food brands worldwide. By the year of 2017, the cereal producer was the leading breakfast cereal company in the USA. Several famous brands of Kellogg's include Cornflakes, Froot Loops, Kellogg's Special K, Coco Pops, and Pop Tarts.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Recycle Materials:** it recycles materials for 71% of its packaging boxes, the company also wants to update the use-by-date into "best if used" to transform the consumption behavior of consumers.
- **Renewable Energy:** Action plan focusing on renewable energies, reduction of energy use, water-efficiency goals, and decrease of waste across the value chain.
- **Kellogg's Origin:** To foster soil quality and organic as well as sustainable plantations.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **R&D Investment:** R&D departments focus on developing new high-quality flavors.
- **Production Enhancement:** investments in process and equipment optimization ensure a high standard in food quality and safety.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Corporate Responsibility:** The documents published every year are based on the company's main four guidelines focusing on supporting people and environment.
- **Audit Process:** Production facilities and suppliers are rated internally and audited externally by the Global Food Safety Initiative.
- **Collaboration:** A non-profit collaboration for sustainability, recognized as AgWater Steward. Field to Market: A collaboration to measure development of sustainable actions and Bayer Crop Science, a partnership innovating new environmentally friendly practices.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Board of Members:** A Chief Sustainable Officer, an independent Social Responsibility and Public Policy Committee within the Board of Directors supervise and assess projects and their outcomes in addition to CSR related issues affecting the customers and different stakeholders.
- **Digital Platform:** It launched a digital platform called "Open For Breakfast" enabling consumers to gather information on ingredients, sustainability, and production.

Dole Food Company



Dole Food Company (Dole in the following) has become one of the largest fresh fruit and vegetables producers and marketers in the world. The business can be divided into three segments namely fresh fruit, fresh vegetables, and packaged food.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Water Recycle Systems:** The consumption of water is optimized with the help of water recycle systems in Dole's packing houses.
- **Natural Resources:** Only natural barriers and plant covers are used to avoid water pollution in canals.
- **Reduction of Carbon Footprint:** It focuses on reducing the consumption of agrochemicals which cause a major part of greenhouse gas emissions.
- **Water Management:** Within this field different activities can be identified contributing to the reduction of water along the whole supply chain.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Reservoirs:** It is building up reservoirs which collect rainwater for irrigation and partly prevent from consuming deep well water.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Sustainability:** Four major pillars of sustainability were defined which are Water Management, Carbon Footprint, Soil Conservation, and Packaging.
- **Reuse or Recycle:** It has a policy in order to minimize waste and utilizes environmentally-friendly resources.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

Danone Group



The Danone Group is among the largest multinationals in the dairy industry, headquartered in France. The company is leading the world market of fresh dairy products and in the European market for medical nutrition.

Environment
 Energy Management / Water & Wastewater management / Hazardous Material Management

- **Environmental Management:** It's climate policy, the risk of water scarcity and the damage of water ecosystems is acknowledged. The company sets the objective to restore water ecosystems and introduce a circular economy concept for strategic resources.

Leadership & Governance
 Business Ethics / Reporting System/ Assessment /Policy

- **CSR:** The CSR or sustainability strategy of Danone is divided into six categories: people, water, packaging, agriculture, climate change, and biodiversity

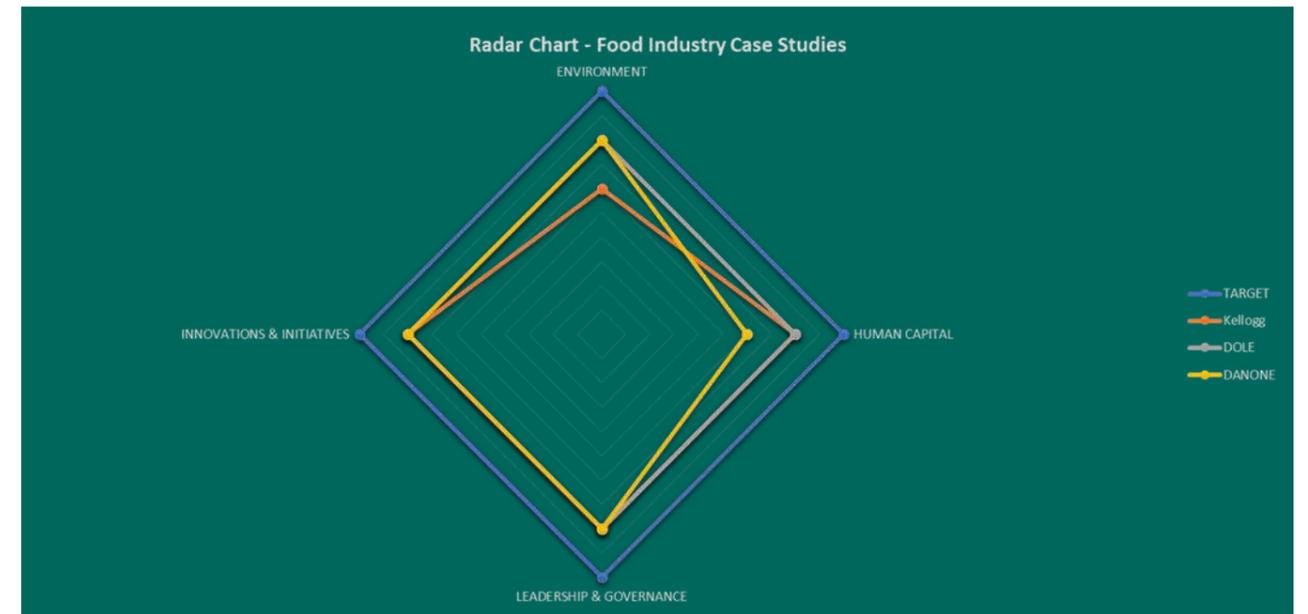
Innovation & Initiatives
 Supplier Engagement / Alternative Raw Materials / Supplier

- **Wastewater Recycling System:** Invested two million Euro in a wastewater recycling system in the production plant in Tres Cantos which aims at creating water autonomy for the site, meaning to become self-sufficient in supplying 80 % of water needed for production.

Human Capital
 Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Sustainability Goals:** The company has sustainability goals regarding water consumption and aims to cooperate with producers, stakeholders, and suppliers.

Comparison of Sustainable Practices of Case Studies



CRITERIA	TARGET	KELLOGG	DOLE	DANONE
Environment	5	3	4	4
Human Capital	5	4	4	3
Leadership & Governance	5	4	4	4
Innovations & Initiatives	5	4	4	4

Not yet Started: 1 Aware: 2 Committed: 3 Established: 4 Advanced: 5

Recommendations for Food Industries:

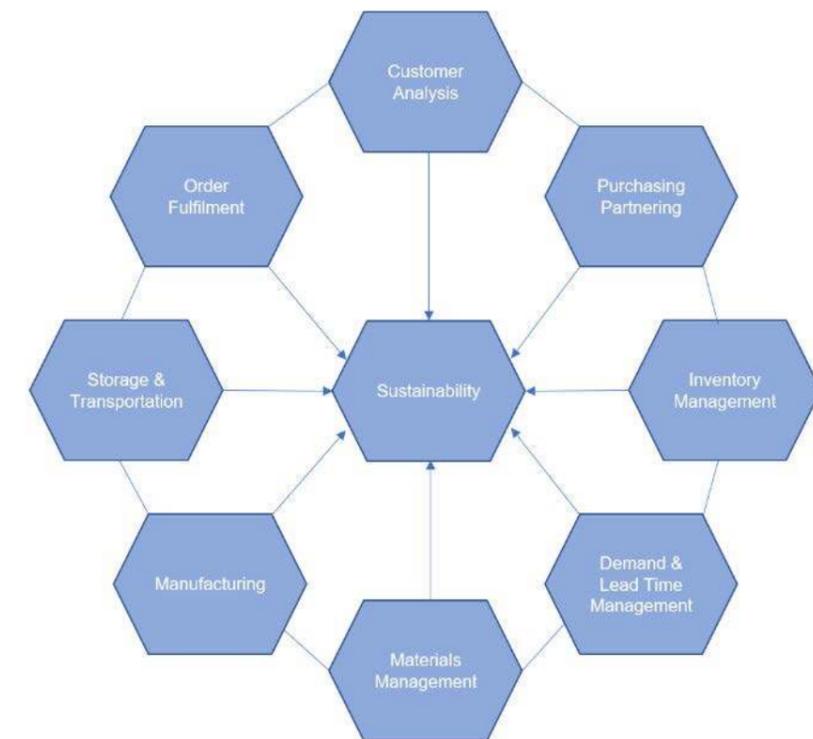
- Understanding the role of water in the supply chain
- Measures to mitigate the water crisis risk
- Assessment of Water Management
- R&D efforts to find alternative solutions
- Efficient irrigation scheduling realized on the plantations
- Address along with production plant other stages of supply chain

INCREASING WATER EFFICIENCY IN PRODUCTION PROCESSES WITHIN THE FMCG INDUSTRY AS A MEANS OF RISK MITIGATION REGARDING FUTURE WATER CRISES

Increasing Water Efficiency in Production Processes within the FMCG Industry as a Means of Risk Mitigation Regarding Future Water Crises

by Haden Garth Cosman, Florian Georg Friedrich, Maximilian Nuyken

The case studies will focus on leading companies in the FMCG sector and how they are currently implementing sustainability in supply chains. It will also outline societal and environmental risks companies are attempting to tackle within their Supply Chain Management. The primary focus of this paper was to explore and examine potential industrial applications for reducing water usage within the Supply Chain.



L'Oréal



It is the world's largest cosmetics enterprise and actively offers products in skin care, make-up, perfume and hair care. L'Oréal pledges by 2020 to reduce their environmental footprint & water consumption by 60% from a 2005 baseline whilst bringing beauty to one billion new consumers.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Water:** It prioritizes responsible water use within its manufacturing processes and the reformulating of products, in order to minimize the requirements of water as input material.
- **Water treatment solutions:** Implemented water treatment solutions in every manufacturing site. With the help of these implementations the enterprise is able to reuse water for its facilities, production and products.
- **Retreat Wastewater:** It is able to retreat wastewater which leaves the facilities, in order to not pollute nearby rivers.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Supplier Contracts:** It created binding contracts for suppliers to actively fulfil requirements. One of the requirements is the obligation of supplier to publish their water management strategy and performance reports annually.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Engagement Model:** Advanced their employee training model from giving the employees online trainings to engagement, where one employee presents workshops, self-made videos, social-media posts etc.
- **Site Visit:** Every subsidiary had to visit one of L'Oréal's production facilities once a year to experience the best practices across sites.



Procter & Gamble

The Procter & Gamble Company is an American multinational consumer goods corporation. It specializes in a wide range of personal health/consumer health, and personal care and hygiene products; these products are organized into several segments including Beauty, Grooming, Health Care, Fabric & Home Care, and Baby, Feminine & Family Care.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Water Sustainability Goals:** It exceeded their 2020 Water Sustainability Goals to reduce the per unit manufacturing facility water usage by 20% relative to FY09/10.
- **Cleaning Method:** Via an optimization of its "cleaning and sanitizing" process and introducing a new method of cleaning – steam, the facility is able to reuse 60% of treated water for cooling towers, and 12% for its core process.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Product Range:** P&G has developed waterless products (dry shampoos, leave on treatments, etc.) that reduce stress on water supply on the consumer end of the value chain.
- **Investments:** Investments into R&D specifically aimed at reducing the quantity of water required to produce certain products.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

Human Capital

Labour Practices/ Employee Health & Safety /Employee-Customer Engagement /Human Rights

- **Water Risk Assessment Framework:** P&G is in tier three of their Water Risk Assessment Framework, which was developed in conjunction with the World Resources Institute, World Wildlife Fund, and Alliance for Water Stewardship. The main focus of this framework is to identify areas in which manufacturing facilities operate that are higher-water risk, and to implement the necessary measures to conserve as much water as feasible throughout the manufacturing process.

- **Awareness Programs:** It is also committed to raising the awareness of water-related issues with our consumers, stakeholders and business partners with the aim of sustainable water use.
- **Access to Clean Water:** P&G has also almost reached its goal of providing one billion people with access to water-efficient products. Additionally, they have provided 14 billion liters of clean drinking water to people in developing nations.



Unilever

Unilever is a British-Dutch transnational consumer goods company, with headquarters in London and Rotterdam. The product portfolio consists of food and beverages, cleaning agents and personal care products which are sold in around 190 countries.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Water Consumption:** To reduce the water consumption and work against water scarcity and an impending water crisis.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Transparency:** They make their supply chain as transparent as possible. They have listed fibers, materials and technologies that they use to describe what those materials are and what impact they are having as well as background information.
- **Manufacturing Technologies:** The criteria to which their suppliers have to comply to, such as their "4 fold" approach of supply chain decisions and their Chemicals and Environmental Impacts Program.

Leadership & Governance

Business Ethics / Reporting System / Assessment / Policy

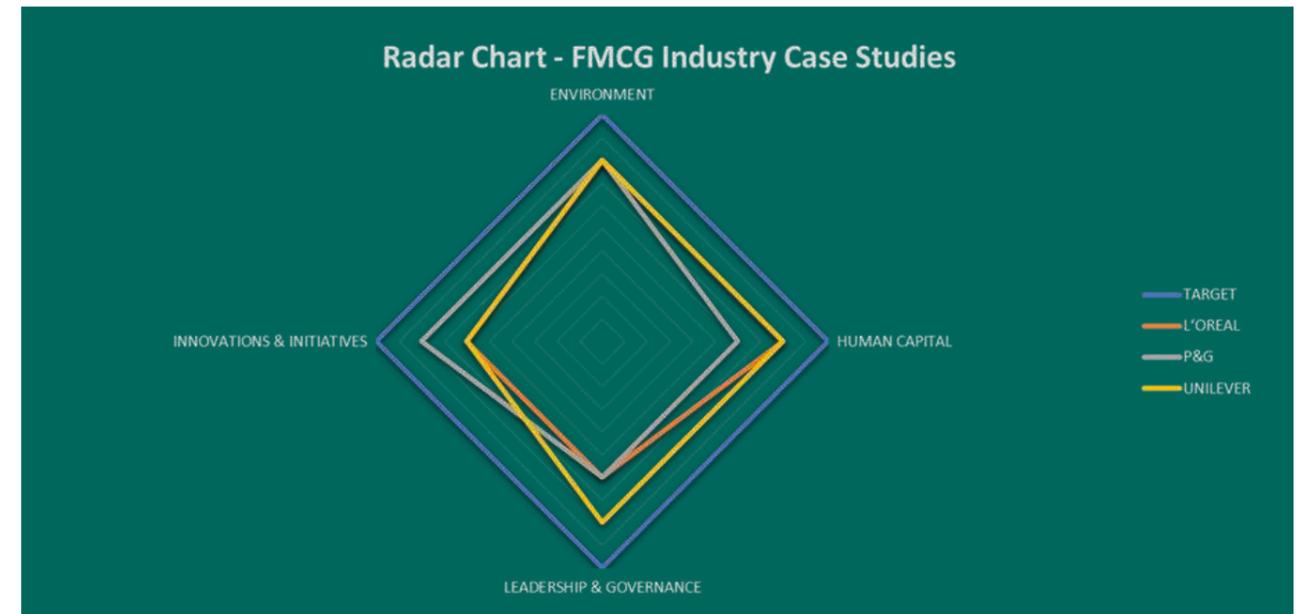
- **Vision:** It sees the strategic necessity of transforming its existing business model with regard to sustainability and social impact and integrate it as part of its business model.

Human Capital

Labour Practices / Employee Health & Safety / Employee-Customer Engagement / Human Rights

- **Sustainable Living Plan:** Unilever supports health and hygiene conditions in developing countries. The major focus is on lack of safe water and poor sanitation and hygiene.

Comparison of Sustainable Practices of Case Studies



CRITERIA	TARGET	L'OREAL	P&G	UNILEVER
Environment	5	4	4	4
Human Capital	5	4	3	4
Leadership & Governance	5	3	3	4
Innovations & Initiatives	5	3	4	3

Not yet Started: 1 Aware: 2 Committed: 3 Established: 4 Advanced: 5

Recommendations for FMCG Industries:

- Understanding issues and establishing expectations
- Demonstrate the value of sustainable activities for the whole business
- Screening, onboarding and auditing suppliers
- Buying and procurement practices
- Reporting and tracking

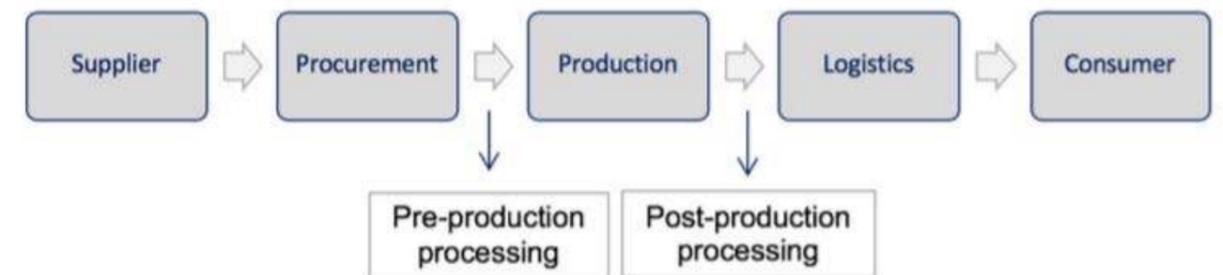
PROFOUND SOCIAL INSTABILITY IN THE FASHION SECTOR

Profound Social Instability in the Fashion Sector

by Niklas Arend, Clara-Marie-Esfeld, Niklas Hegmans

The case studies will focus on a sub-category of societal risks in general, namely profound social instability. It is defined by the World Economic Forum as "major social movements or protests (e.g. street riots, social unrest, etc.) that disrupt political or social stability, negatively impacting populations and economic activity".

Fashion-sector specific supply chain



ZARA/Inditex



ZARA, founded 1975 is a part of the Inditex Group that operates 7422 stores in 96 markets. Most of the stores are represented by ZARA and the group claims that 57% of all suppliers are located in proximity to the headquarters in A Coruña.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Waste Management:** Programs created in order not to pollute nearby rivers.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Supply Chain Accordance:** The whole supply chain to act in accordance with the International Labour Organisation (ILO) and the Organisation for Economic Corporation and Development (OECD).

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Core Values:** Its core values represented in four keywords as "beauty, clarity, functionality and sustainability".
- **Policies:** Human Rights policy, Code of Conduct and Responsible Practices, Code of Conduct for Manufacturers and Suppliers, Right to Wear Guiding Principles and the lines of work in each area to obtain high-quality, sustainable and responsible products.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Union Network:** The group is also part of the IndustryALL Union network, which represents more than 50 million workers.
- **Worker Rights:** It is at the centre of their sustainable activities by fostering worker participation, protecting migrants and other different factors.
- **LBG Model:** Inditex states to measure its impact by using the LBG model framework and supports affected communities with particular programs: e.g. the support of wage negotiations for women in Bangladesh.

Adidas



Adidas is one of the two largest global sportswear producers. The German company headquartered in Herzogenaurach has an annual revenue of €21.2 billion. The company sees sports as a connection of people and a benefit for society.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Environment Management:** The three main points addressed are water scarcity, usage of sustainable materials and reduction of energy consumption as well as CO₂ emissions.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Transparency:** Presents a global factory list with all suppliers of major events they sponsored as well as their suppliers and sub-contractors for general production.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Integrated Management System:** The implementation of these objectives is supposed to take place via an integrated management system (IMS).
- **Chemical Management:** adidas publishes not only a detailed overview about the materials they are using for their products, but also their chemical footprint, including their progress report on chemical management.

Human Capital

Labour Practices/ Employee Health & Safety /Employee-Customer Engagement /Human Rights

- **Awareness Programs:** Social compliance, as well as factors like their supply chain structure, information about their work with suppliers and extensive details about their monitoring and training of workers along their supply chain are accessible to everyone.

C&A



C&A is an international chain of fashion retail clothing stores and was founded in Belgium, in 1841 by the brothers Clemens and August Brenninkmeijer. It is among the 20 biggest family-owned companies in the world.

Environment
Energy Management / Water & Wastewater management / Hazardous Material Management

- **Environment Management:** Effective usage of water, and the positive impact on the company's 2020 sustainable cotton target.
- Material consumption, use of materials and consumer dialogue
- Formulated a 2020 sustainable cotton target, which is rather aimed at the environmental impact.

Innovation & Initiatives
Supplier Engagement / Alternative Raw Materials / Supplier

- **Supplier Standard:** Strategy for enhancing supplier standards in a structured fashion supply chain.

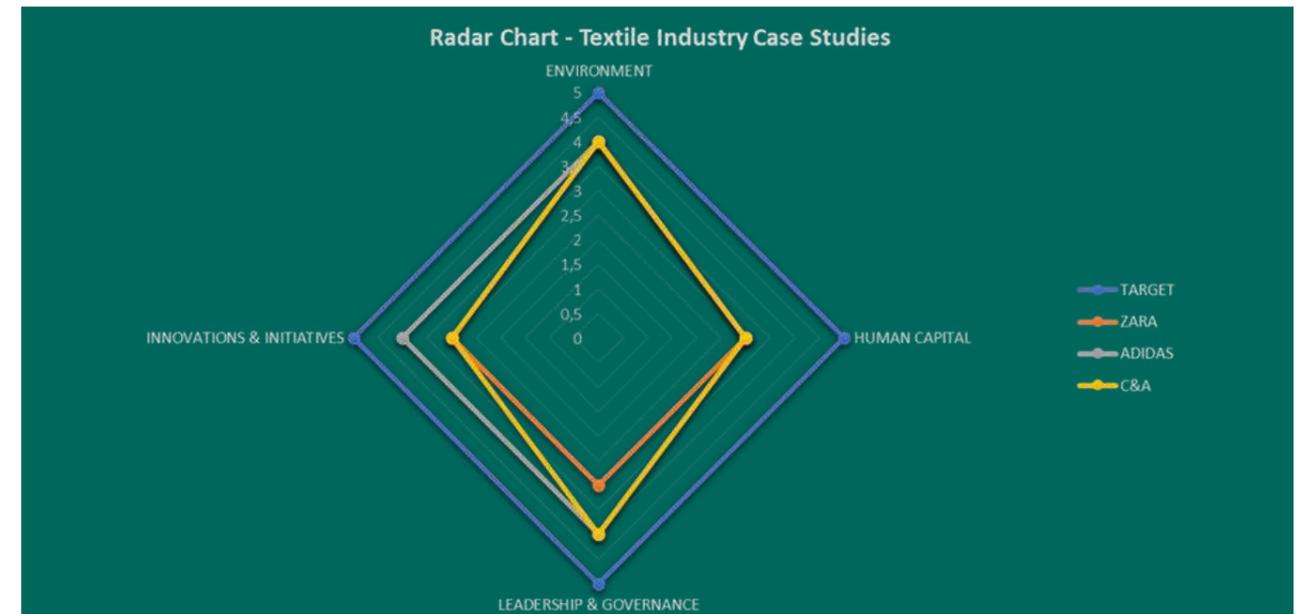
Leadership & Governance
Business Ethics / Reporting System/ Assessment /Policy

- **Core values:** Passion for customer, responsibility with trust, delivering together, integrity and continuous improvement.
- **Sustainability Report:** It issues a global sustainability report every year that informs about all relevant topics in every country the organization directly or indirectly operates in.

Human Capital
Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **SOCAM:** compliance of stakeholders/suppliers with their Code of Conduct is the foundation of the independent auditing organization SOCAM (Service Organization for Compliance Audit Management).

Comparison of Sustainable Practices of Case Studies



CRITERIA	TARGET	ZARA	ADIDAS	C&A
Environment	5	4	4	4
Human Capital	5	3	3	3
Leadership & Governance	5	3	4	4
Innovations & Initiatives	5	3	4	3

Not yet Started: 1 Aware: 2 Committed: 3 Established: 4 Advanced: 5

Recommendations for Textile Industries:

- Collaboration with competitors
- Building local communities and collaborations
- Measurement of work environment performance
- Exploration of new forms of supplier auditing
- Increase supply chain transparency

POSSIBLE SOLUTIONS FOR THE REDUCTION OF ENVIRONMENTAL RISKS IN THE SUPPLY CHAIN OF THE PALM OIL INDUSTRY USING THE EXAMPLES OF L'ORÉAL AND NATURA & CO

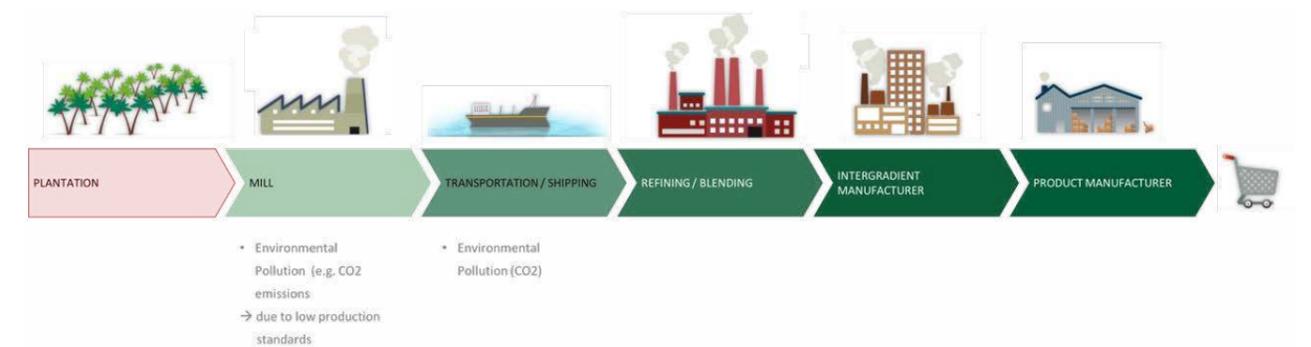
Possible Solutions for the Reduction of Environmental Risks in the Supply Chain of the Palm Oil Industry using the Examples of L'Oréal and Natura & Co

by Lina Asbach, Charlotte Weißenberg

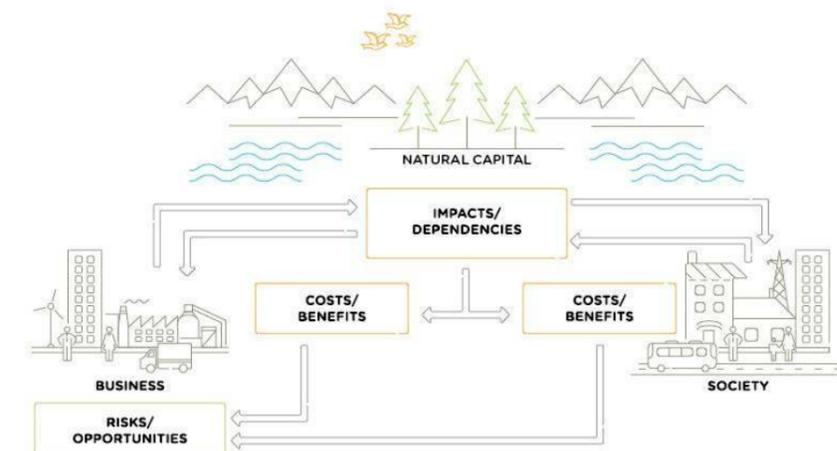
The palm oil industry has a high impact on worldwide climate change, as the exponential growth in demand of palm oil and palm kernel oil can be traced back to incautious palm oil production, which is conducted in order to meet the increase in demand.

The case studies focus on the environmental risks caused by the palm oil industry, in specific the issue of deforestation and its negative impacts on the worldwide climate.

Supply chain of the palm oil industry



The natural capital model shows the close interconnection between environmental risks and opportunities in regard of business activities, costs and impact on the environment. Moreover, it depicts that natural capital impacts business as well as the other way around. By measuring impact and improving the measured results constantly, advantages for the development of the business and natural capital can be generated.



Natura & Co



The cosmetics company Natura Cosméticos S.A. was founded in Sao Paulo, Brazil in 1969. Since 2017 it incorporates the brands Natura, The Body Shop and Aesop. After The Body Shop was bought from L'Oréal, the corporation was renamed in Natura & Co now is one of the leading corporations in the field of cosmetics in regard of corporate social sustainability.

Supply chain of Natura & Co



Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Carbon Neutral:** It addresses the opportunities to become a carbon neutral company, to make use of the utilization of refill packaging, to commit to the sustainable extraction of raw materials and to use materials that are recycled or could be recycled after the products life cycle.
- **Greenhouse gas emissions:** It tries to map its greenhouse gas emissions along its supply chain.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Sustainable Development Program:** It has a sustainable development program which includes supplier community support in the first part of the value chain.
- **R&D Development:** It invests heavily in R&D in order to find innovative solutions to reduce environmental risks, for e.g. they discovered that the red seeds of the Ucuuba-tree contain a light and hydrating oil suitable for cosmetic products and a derivative for palm oil.
- **Transparency:** Increase transparency along the supply chain, Natura & Co states that all direct suppliers have to fill in a self-assessment questionnaire, which is based on the audit criterion of the SE-DEX.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Collaboration:** They collaborate with the Brazilian government to establish new regulations to maintain the biodiversity in this country.
- **Certified Ingredients:** Natura uses certified ingredients and shows high transparency in regard of this issue.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

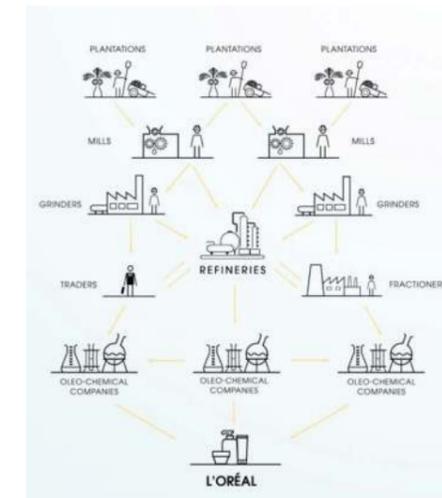
- **Sustainable Production:** The use of vegetal material from renewable origin lies at 79%, which shows the company's high commitment towards sustainable production.

L'Oréal



L'Oréal is an international known cosmetic company, with a broad portfolio of different beauty brands. The organization was founded 1906 in Paris. According to L'Oréal 70% of all cosmetic products contain palm oil, palm kernel oil or derivatives. Due to L'Oréal's sustainable commitment, the company's proportion of the global palm oil footprint is around 0,1%.

L'Oréal Supply Chain



Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Zero Deforestation Policy:** It includes a sustainable raw material sourcing plan, especially for palm oil, soya and certain fibres.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Sustainable Sourcing Plan:** Implementation is tackled within the overall business strategy.
- **Innovation:** The Palm Oil Innovation group tries to find responsible and sustainable farming models to minimize environmental risks.
- **Sustainable Palm Index:** They created and administered an in-house sustainable palm index. The aim of this index is to have a stronger and more transparent relationship to direct suppliers and to give the basement for the development of a sustainable palm oil production.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

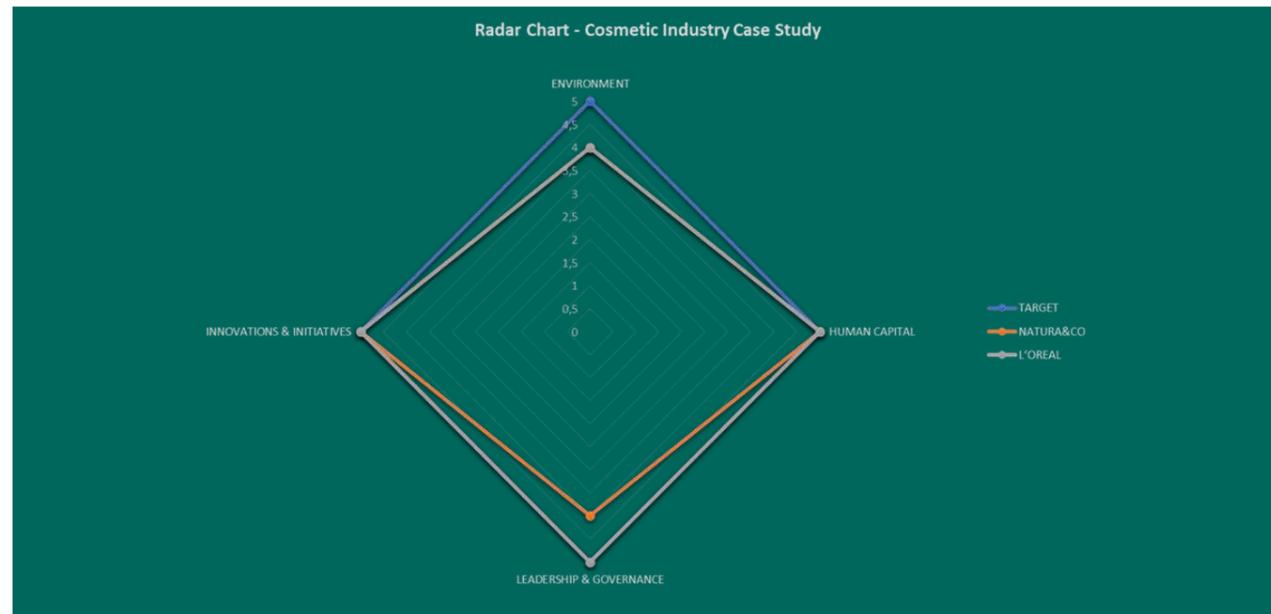
- **Sustainable Commitment Report:** The report "SHARING BEAUTY with all", is annually provided, creates transparency and a clear communication for all stakeholders.

Human Capital

Labour Practices/ Employee Health & Safety /Employee-Customer Engagement /Human Rights

- **Awareness:** The aim is to make every detail in the palm oil production traceable, grow awareness of farmers and to give a fundament for transparency.

Comparison of Sustainable Practices of Case Studies



CRITERIA	TARGET	NATURA&CO	L'OREAL
Environment	5	4	4
Human Capital	5	5	5
Leadership & Governance	5	4	5
Innovations & Initiatives	5	5	5

Not yet Started: 1 Aware: 2 Committed: 3 Established: 4 Advanced: 5



Recommendations for Cosmetic Industries:

- Knowledge of Sustainable palm oil production
- Creating more transparent supply chains
- Control and measurement mechanisms, as long-term sustainability is only possible if standards are evaluated

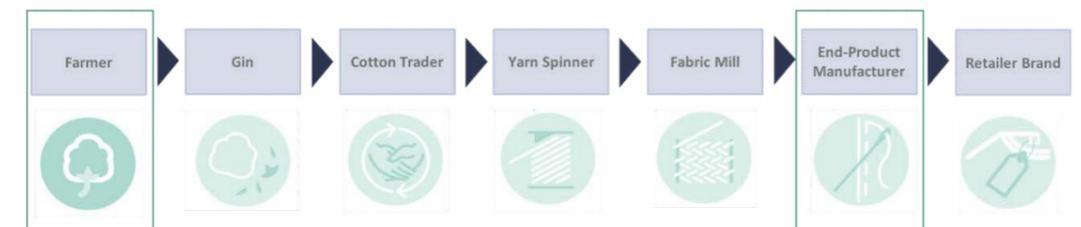
WATER CRISIS IN THE COTTON INDUSTRY

Water Crisis in the Cotton Industry

by Laura Brückner, Julia Determann, Jonas Gemein, Helen Landhäußer

The implementation of a sustainable supply chain in the cotton industry mitigates the risk of a water crisis. The focus in the case study is on Water crisis.

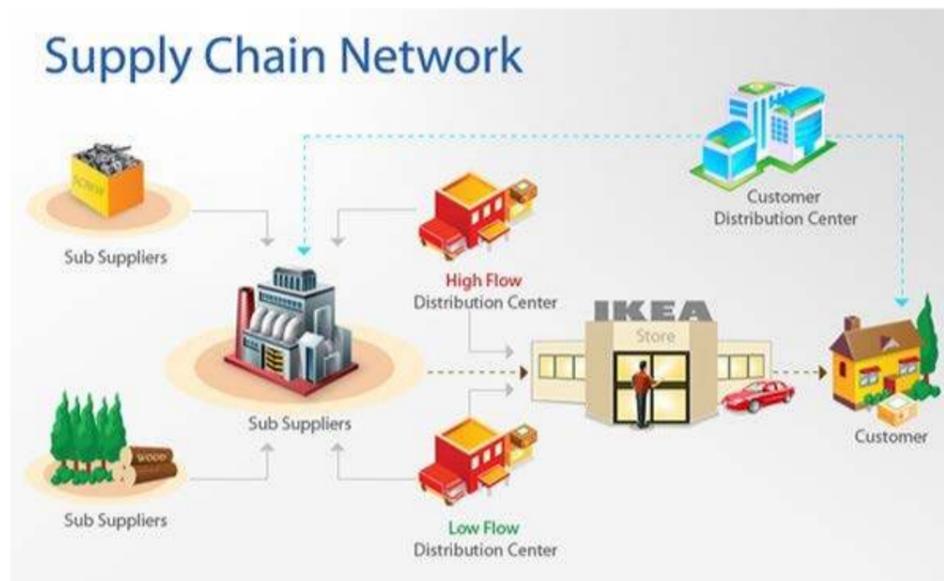
Cotton Supply Chain



IKEA



IKEA is a Swedish-founded multinational group that designs and sells ready-to-assemble furniture, kitchen appliances and home accessories, among other useful goods and occasionally home services. It has been the world's largest furniture retailer since at least 2008.



Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Water:** The supplier code of conduct is setting rules and guidelines to help having a more sustainable impact on the environment and it also contains the importance of good water quality and the necessity of an action plan of sustainable water use in regions with water scarcity.
- **E-Wheel:** It has developed some selection criteria to make their products environmentally friendly. The tool "e-wheel" is used to measure these criteria and their impact on the environment.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Better Cotton Initiative:** IKEA is one of the four companies that has already sourced 50 % of its cotton sustainably.
- **Suppliers:** They monitor and report their water consumption and IKEA is constantly controlling it.
- **Techniques:** It tries to minimize water consumption in product design with special techniques such as Soft Pigment Printing, which reduces the water consumption by 60 %.

Leadership & Governance

Business Ethics / Reporting System / Assessment / Policy

- **Target:** It has targets to maximize their sustainable cotton by 2020 or even earlier.

Human Capital

Labour Practices / Employee Health & Safety / Employee-Customer Engagement / Human Rights

TRIGEMA



TRIGEMA is a manufacturing company for casual clothing for women, men and children. TRIGEMA is a family company, founded in 1919. Wolfgang Grupp is the owner and managing director already in the third generation.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **OEKO-Tex Standard 100:** By using modern washing and bleaching units to help reduce pollution. Each item is labeled with the "OEKO-Tex Standard 100", a certification with worldwide existence and an independent testing approach used for the whole process from raw-material until finished good.
- **Block-cold stay-procedure:** The use of modern technology allows them to be both water and energy efficient. 60% of the products are refined through a technique called block-cold stay-procedure which also fulfills the criteria of the European REACH regulation.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Change Collection:** TRIGEMA has one collection, called TRIGEMA Change that is completely biodegradable and decomposable. This is built up on the Cradle-to-Cradle® principle. The idea is to design products in such a way that the raw materials and ingredients used will turn into nutrients rather than waste after they have been utilised or consumed.

Leadership & Governance

Business Ethics / Reporting System / Assessment / Policy

Human Capital

Labour Practices / Employee Health & Safety / Employee-Customer Engagement / Human Rights

- **Global Organic Textile Standard:** All the raw material used have the GOTS certificate. This certificate approves the biodiversity and an organic cultivation for the farming process in the cotton industry. Furthermore, it guarantees fair labor conditions.

TCHIBO



Tchibo is a German chain of coffee retailers and cafés known for its range of non-coffee products that change weekly. The latter includes: clothing, household items, electronics and electrical appliances. Tchibo has further expanded its product range to sell services such as travel, insurance and mobile-phone contracts.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Code of Conduct:** The Social and Environmental Code of Conduct (Tchibo SCoC) for Business Partners includes a paragraph on both health and safety, including production standards, and on environmental protection including water.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Collection Model:** A model of collection and return in collaboration with FairWertung e.V. and another initiative for a rental model to prolong textile longevity called Tchibo Share, which in turn is a collaboration with Kilenda.
- **Sourcing:** It sources at least 80 % organic cotton and thereby is the third largest supplier of organic cotton worldwide.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- **Commitment:** In 2017, it published a closed loop commitment with the aim to work "on material cycles that better protect global resources and enable sustainable consumption".
- **Transparency:** They publish suppliers across the End-Manufacturing Stage, named as primary manufacturers and fabric mill suppliers, named as wet-processing units.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Awareness Program:** Customer communication strategy to promote the advantages of sustainable products and to promote sustainable values. One part of this communication strategy is to imprint a label "GUT GEMACHT" on eco-friendly products.

Inditex



The Industria de Diseno Textil S.A., better known as Inditex, is one of the world's largest fashion retailers focusing on the key elements of fashion production. Inditex functions as a family brand for eight distinct brands: Zara, Zara Home, Pull&Bear, Massimo Dutti, Bershka, Stradivarius, Oysho and Uterqüe.

Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- **Global Water Management Strategy:** It follows the guidelines of the CEO Water Mandate, a part of the UN Global Compact, the world's largest corporate sustainability initiative. The long-term vision of Inditex is to behave in a responsible and sustainable way at all steps of the supply chain and in collaboration with its stakeholders in terms of the use of water.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- **Ready to Manufacture program:** This program aims on improving wet processing units such as dyeing and printing mills, laundries and tanneries. It basically has two instruments: One aims on guaranteeing traceability within the wet processing units and the other instrument protocols training and information for facilities of suppliers.
- **Join Life:** Customers bring their used cloth back and Inditex tries to recycle it. Since the beginning of their circular economy efforts Inditex has collected 12,000 tons of garments and 598 stores have placed a collection container. By 2020 Inditex pledges not to send anything to landfills anymore.
- **Collaboration:** Works together with the Leather Working Group to foster sustainability and the Better Cotton Initiative and Textile Exchange to promote the production and use of more sustainable raw material.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

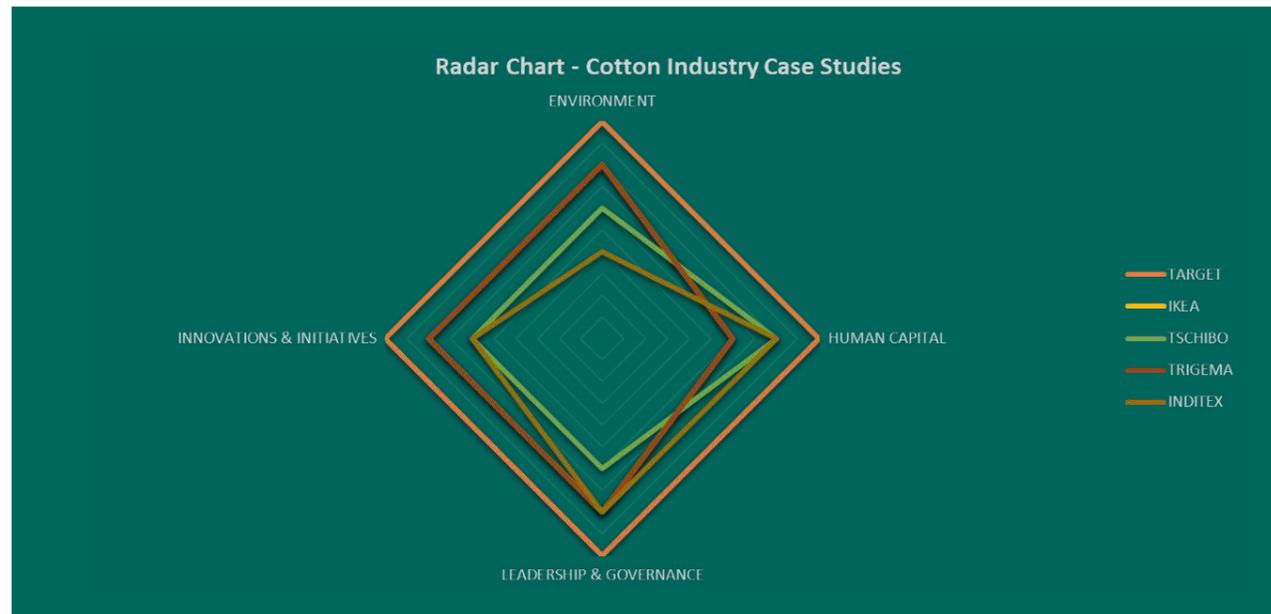
- **Sustainability Policy:** For all activities the Inditex Sustainability Policy provides a supporting framework which contains principles and commitments.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- **Awareness:** Inditex commits itself to take over responsibility of raising environmental awareness of its staff, suppliers and its business partners.

Comparison of Sustainable Practices of Case Studies



CRITERIA	TARGET	IKEA	TSCHIBO	TRIGEMA	INDITEX
Environment	5	4	3	4	2
Human Capital	5	3	4	3	4
Leadership & Governance	5	4	3	3	4
Innovations & Initiatives	5	4	3	4	3

Not yet Started: 1 Aware: 2 Committed: 3 Established: 4 Advanced: 5

Recommendations for Cosmetic Industries:

- Optimize sustainable farming with the help of supplier education programs
- Increase awareness for water governance
- Alternative sourcing options
- Establish collaborative approach/sector initiatives with suppliers, government etc
- Zero-waste design process



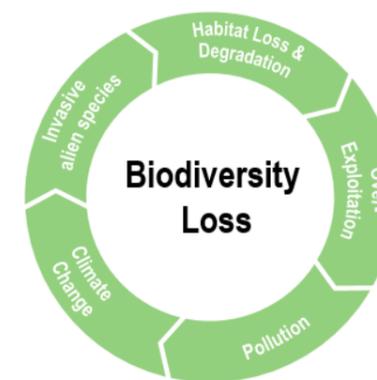
FMCG – ENVIRONMENTAL RISK – BIODIVERSITY LOSS AND ECOSYSTEM COLLAPSE

FMCG – Environmental Risk – Biodiversity Loss and Ecosystem Collapse

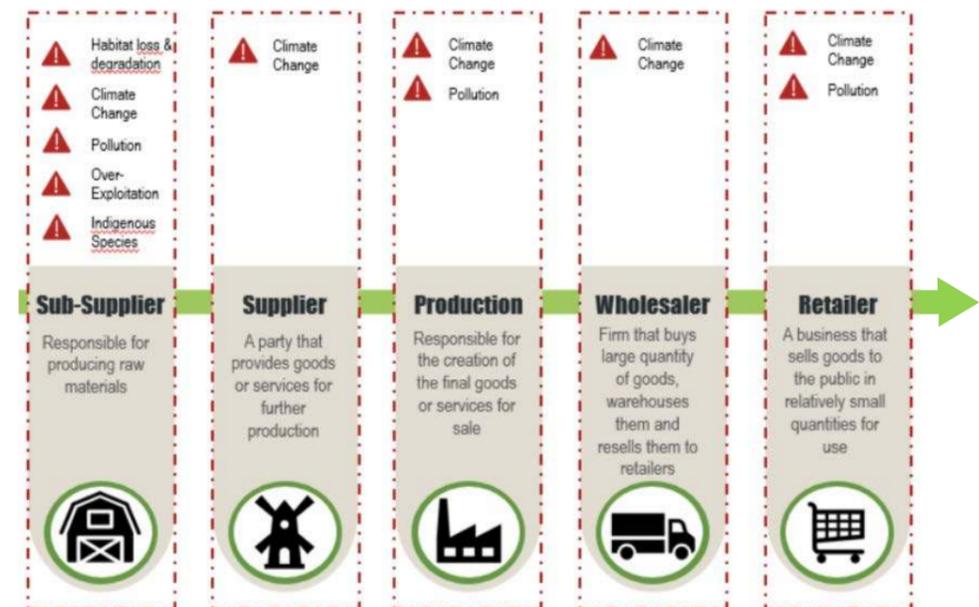
by Ankit Cchabra, Kim Dammann, Tim Fugmann, Thomas Laubuhr

Fast Moving Consumer Groups are bought on a regular basis and customers buy them without going through a very intensive decision making process. Due to this sustainability plays a major role in this industry, especially the loss of biodiversity poses a threat on various ecosystems and is composed of five major activities that aggravate the loss: Habitat loss and degradation, climate change, pollution, overexploitation and invasive alien species.

Risk areas of biodiversity loss



Risks in the FMCG Supply chain

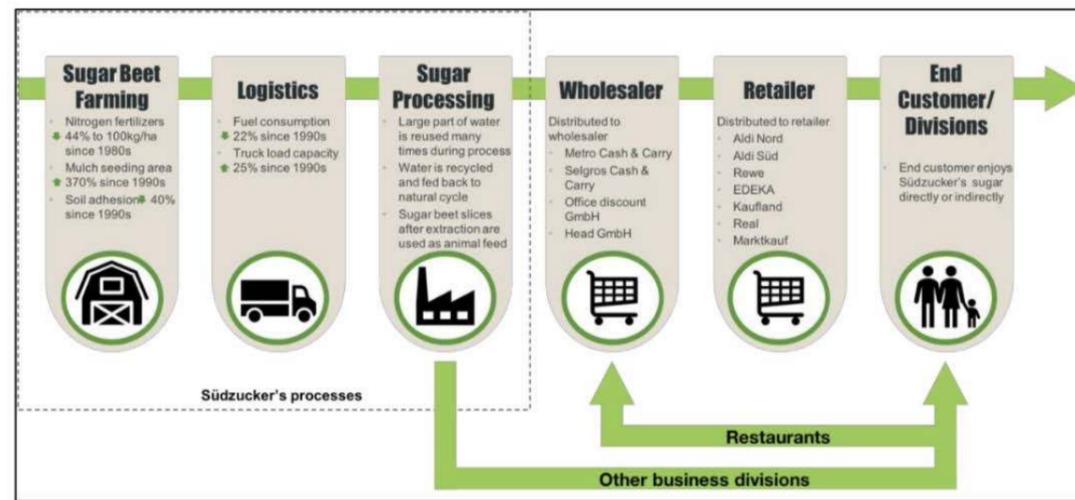


Südzucker AG



The Südzucker Corporation is one of the leading companies in the food industry and is divided into four segments, namely Sugar, special products, CropEnergies, and Fruit. It is headquartered in Mannheim and is the world market leader in the traditional sugar business.

Südzucker's Sustainable Supply Chain



Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- Environment Friendly Solution:** Byproducts such as residue sugar beet slices (after extraction) and molasses have a target market of their own. They can be used for animal feed, alcoholic fermentation and for the production of baking yeast.
- Water Recycle:** Internal water circulation system water can be used several times during the sugar production process before it is purified and fed back into the natural cycle.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- Electro-ultrafiltration Method:** A test developed by the "Bodengesundheitsdienst", is used to analyze nutrients in soil samples.
- Soil Tillage Systems:** Use to conserve soil and determine the threshold values for infestation control of leaf diseases so that fungicides are only applied if those values are exceeded.
- Logistics:** To reduce transport costs beets are washed at the side of the fields in order to decrease fuel consumption and reduce environmental impacts caused by removing soil from farmland.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

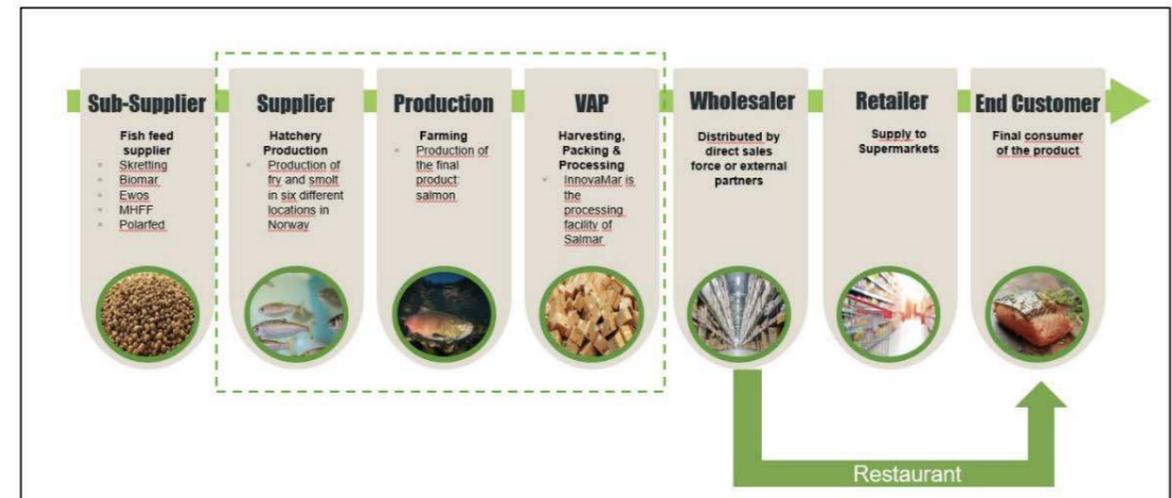
- Driver Training:** Modern trucks with high load capacities are used and drivers are provided training in environmentally friendly and in driving behavior to further reduce the emissions.

Salmar



Salmar, is one of the world's largest producers of farmed salmon and has its headquarter in Norway. The company's different business areas include smolt, farming, processing, sales, and distribution.

Salmar's Sustainable Supply Chain



Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- Aquaculture:** The company is characterized by their vertically integrated aquaculture, that serves several parts of their own supply chain ranging from broodfish to finished products.
- Predator Removal:** Is thematized as the first subcategory does not occur when aquaculture is applied, as ideally, companies do not interfere with the marine ecosystem.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- Processing Unit:** Facility represent the most innovative area of the company supported by individual categorization of every single salmon.
- Value Added Process:** This Department is responsible for preparing the salmon until its ready for dispatch. Activities include slaughtering, further processing into fresh and frozen products and packaging for distributional activities.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

Human Capital

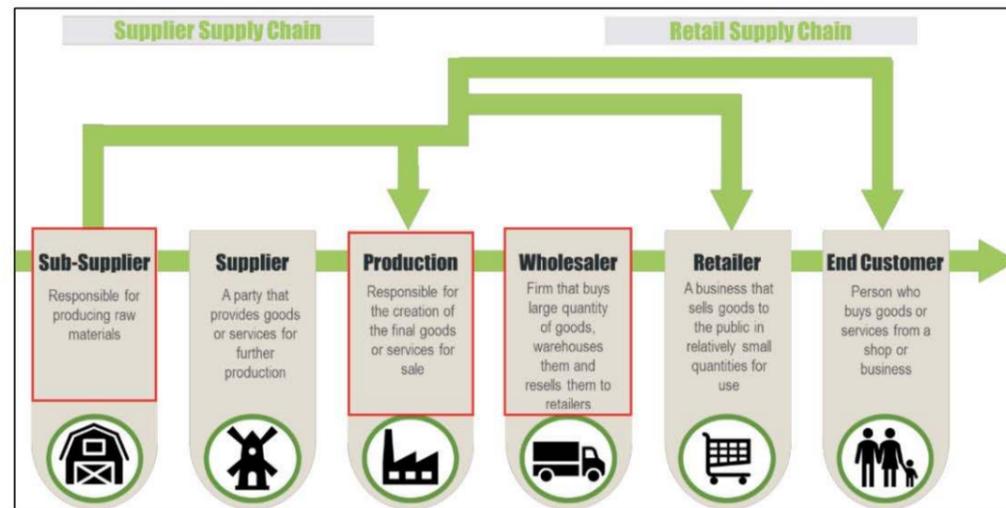
Labour Practices/ Employee Health & Safety /Employee-Customer Engagement /Human Rights

RUNA



New York-based beverage producer RUNA was founded in 2008, the firm's operations focus around processing and selling guayasa, the product of the holy genus tree. The product is highly caffeinated and usually processed into tea and tea-like beverages.

RUNA Sustainable Supply Chain



Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- Tree Spree:** RUNA was able to plant over 150.000 trees, and paid an additional income of US\$ 6.500 supplementary income to local farmers and helped guayasa receive USDA Organic certifications.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- Production:** Sustainable productions that do not harm the environment and support local communities.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

- NGO:** RUNA founded the NGO Fundacion RUNA which works in close relationship with the local guayasa trading association.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- Transparency:** RUNA's approach to empowering the rights of farmers through associations as well as creating transparency.
- Development Programs:** 15% social premium is paid on all products bought by RUNA to the local community developmental programs.

Mānuka



New Zealand Mānuka Group extracts, processes and sells an extensive range of Mānuka honey and oil products for businesses and consumers worldwide. The company is based in Whakatane, New Zealand.

Mānuka Sustainable Supply Chain



Environment

Energy Management / Water & Wastewater management / Hazardous Material Management

- Honey Harvesting:** Ethical honey-harvesting program based on the quality assurance rules of the "Mānuka Originz certification".
- Trees for Bees:** This campaign guaranteed that honeybees have the opportunity to gather sufficient nectar and pollen, supplying needed minerals and vitamins to be strong and healthy.

Innovation & Initiatives

Supplier Engagement / Alternative Raw Materials / Supplier

- Quality System:** Development of the UMF® Mānuka honey purity and quality system, which recognized worldwide. The main advantage is the full traceability of each product back to the location from where it was produced.

Leadership & Governance

Business Ethics / Reporting System/ Assessment /Policy

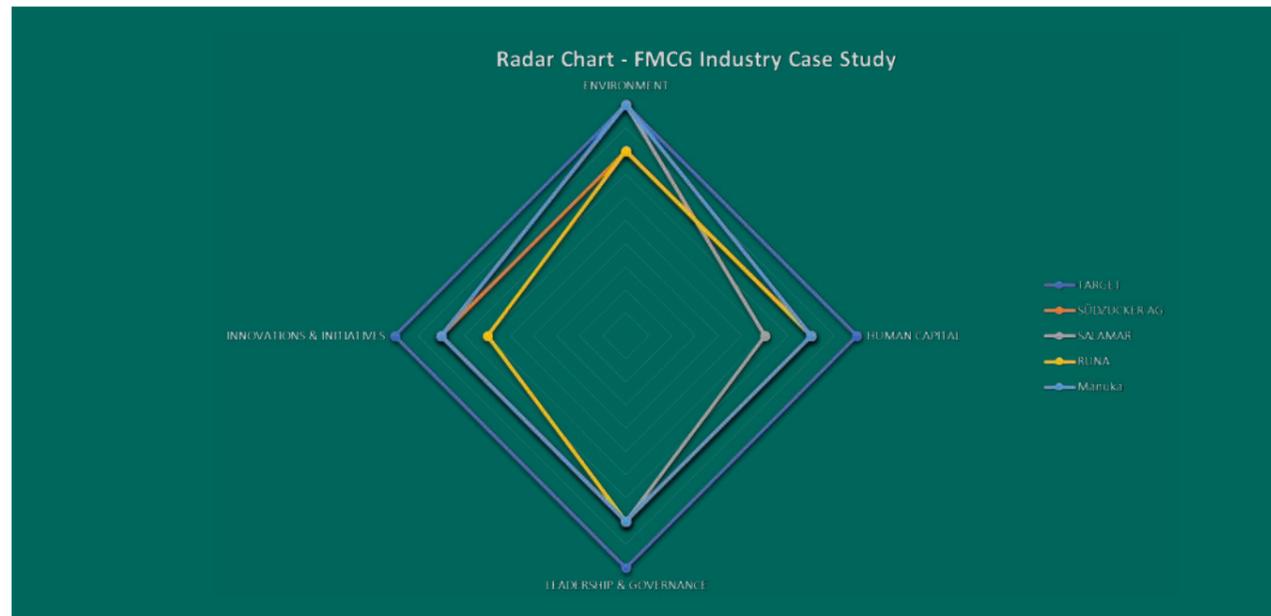
- Collaboration:** In corporation with national forest researches, the group has developed a propagation and rearing program that has a volume of over 4,400,000 seedlings in 2016.

Human Capital

Labour Practices/ Employee Health & Safety / Employee-Customer Engagement /Human Rights

- Partnership Engagement:** These partnerships allow beekeepers to manage and develop their business as an independent company.

Comparison of Sustainable Practices of Case Studies



CRITERIA	TARGET	SÜDZUCKER AG	SALAMAR	RUNA	MĀNUKA
Environment	5	4	5	4	5
Human Capital	5	4	3	4	4
Leadership & Governance	5	4	4	4	4
Innovations & Initiatives	5	4	4	3	4

Not yet Started: 1 Aware: 2 Committed: 3 Established: 4 Advanced: 5



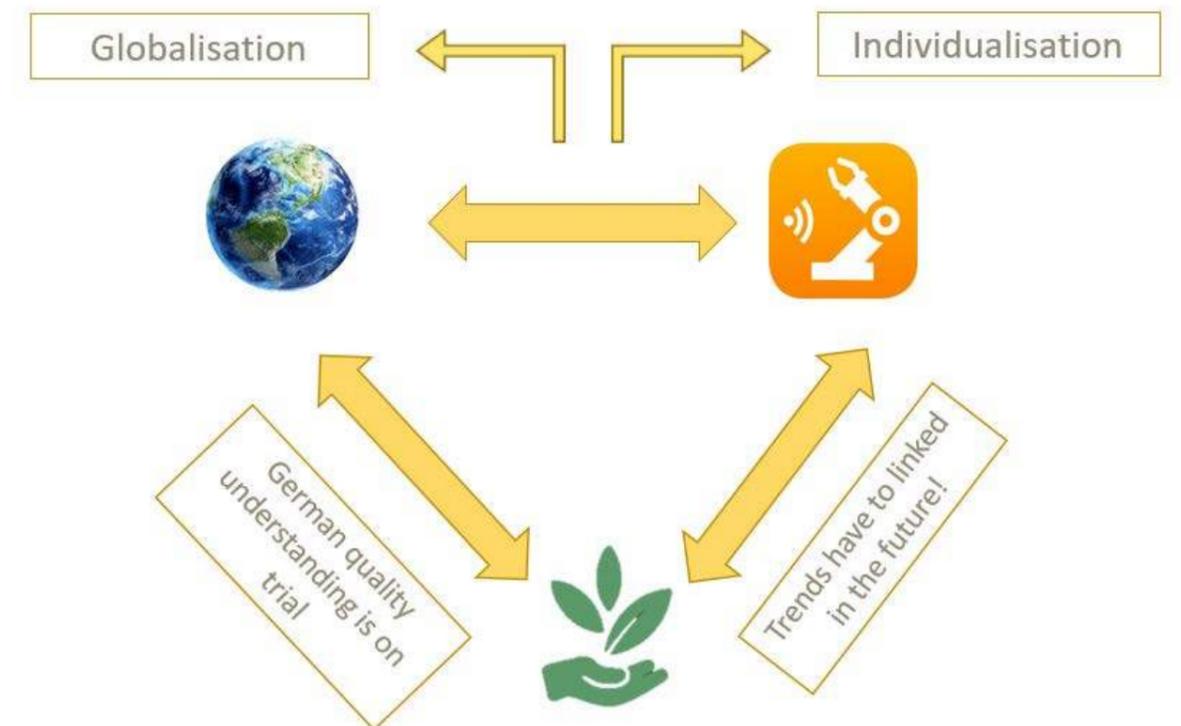
Recommendations for FMCG Industries:

- A structured sustainability reporting mechanism
- KPIs that are adapted to sustainability criteria
- Moving from cost focused supply chain to value based supply chain
- Integration of sustainability across business

THE SUPPLY CHAIN STRATEGY: A CRITICAL SUCCESS FACTOR FOR SUSTAINABILITY

The Supply Chain Strategy: A Critical Success Factor for Sustainability

The summarization of these papers made clear, that a company's entire supply chain can make a significant impact in promoting human rights, fair labour practices, environmental progress and anti-corruption policies. The risk landscape is manifold and companies have to understand the increasing complexity in being more sustainable. This effect is reinforced by the fact that supply chains are built in a global environment, digital tools are increasingly attributed with the ability to solve environmental and social problems in the supply chain. Companies have to act in the context of the "Triangle of the Future".

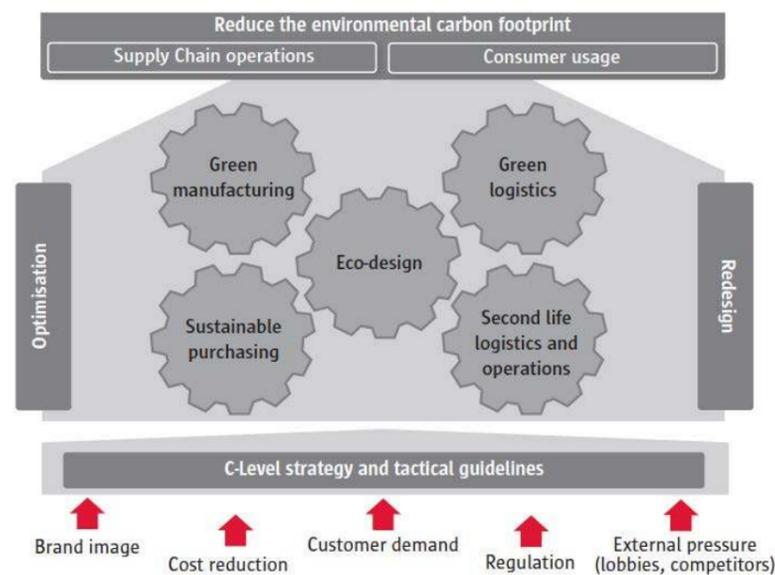


Source: Own Illustration

Supply chain management is an indispensable part of a business’s sustainability program. Knowing the level of environmental, social, and economic impact and viability of your vendors and customers is becoming increasingly common as all industries move towards a more sustainable future. Government pressures are unlikely to be the driver of this change, but you’re already seeing corporate pressures on suppliers and vendors.

Companies are striving to operate in a more sustainable manner. There’s no denying that going green and being environmentally friendly is the way of the future. And, in order to meet the future head on, companies are making their products or delivering their goods or services in a way that doesn’t impact the environment, that doesn’t deplete natural resources, that doesn’t contribute to climate change, that doesn’t contribute to social inequalities or injustice, and that in general, is done “the right way”.

One of the ways a company does this is by looking at their entire manufacturing process (anything from a product to a service), from where the raw materials are obtained, through the entire process within the plant, to the use and ultimately disposal or recyclability of their product or service. We might call this evaluating the process from “cradle to cradle” (thinking beyond cradle to grave) or on a “life-cycle assessment” type analysis.

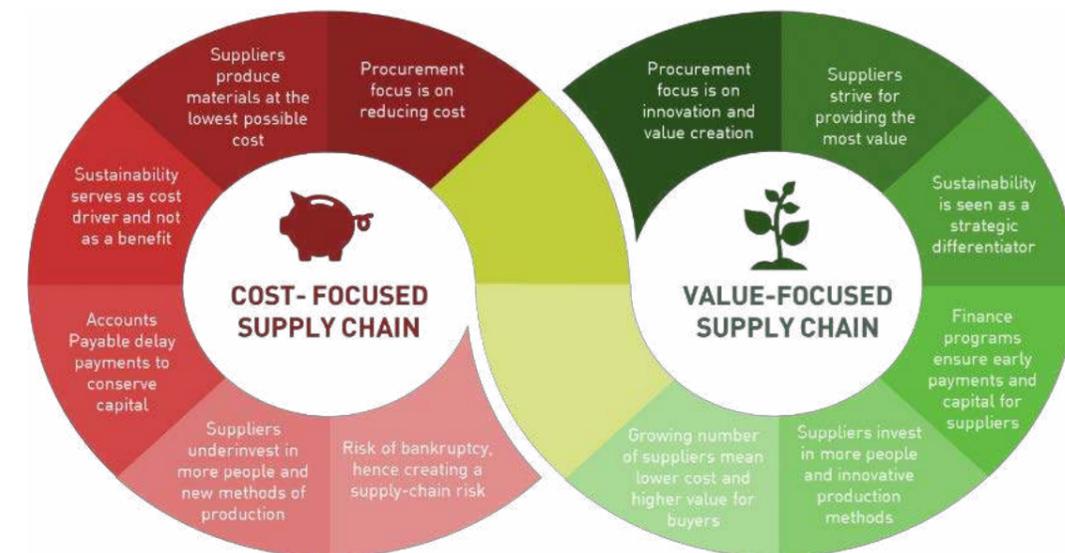


Source : Green supply chain: from awareness to action Bearing Point Institute Report 2012

Transition from Cost focused to Value focused Supply Chain

To move up the Sustainability ladder companies need to change their perspective from a cost-focused supply chain that aims at cutting costs by, for instance, underinvesting and understanding sustainability as a burden. This attitude can cause supply chain risks, as the lowest sourcing and production costs are leading to a loss of quality.

In contrast to this, focusing on value indirectly implicates the integration of sustainability. Due to the fact, that companies and suppliers invest more in their people to increase their innovation and quality, the number of suppliers is increasing as well. With regard to fundamental economic theory, increasing supply leads to lower price, showing that sustainability can also provide a profit-increasing factor.



Tradeshift. (2014). The responsible supply chain alliance. Retrieved October 28, 2018, from <https://tradeshift.com/circular-economy/>

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