Sustainability Research Report for the Hong Kong Fashion and Textile Industry

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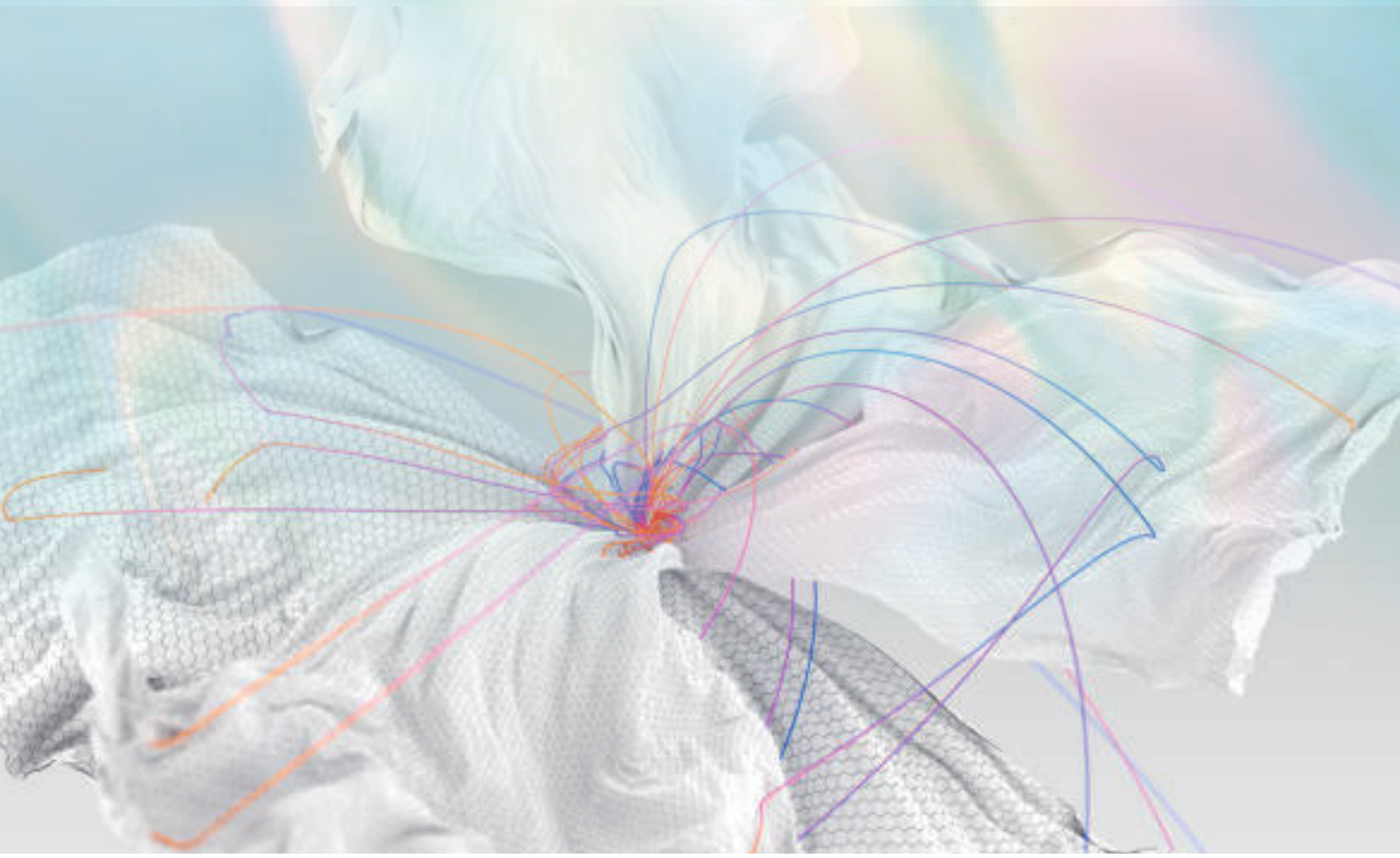

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Preface

I would like to express my gratitude to the Trade and Industry Department, HKSAR Government, Hong Kong Productivity Council (implementation agent), collaborating organisations, and the members of the steering committee for their support and input. I also want to thank all the companies, organisations and individuals who participated in the research and interviews, without whom this report would not have been possible.

The Hong Kong fashion and textile industry has always played an extremely important role, and its position on the international stage cannot be underestimated. Many world-renowned lifestyle brands are closely linked to Hong Kong's textile and fashion industry, which has made us even more aware of the critical role that the industry plays in sustainable development.

The Hong Kong government's support for our research reflects its recognition of the importance of the local fashion and textile industry and sustainable development. This report not only identifies long-standing issues of concern but also uncovers overlooked sources that have a profound impact on future sustainable development. Our goal in writing this report is to raise awareness of the fashion and textile industry and thereby promote the sustainable development of local industries. This report pays special attention to the concerns of small and medium-sized enterprises in the industry. We hope that everyone can learn from the experiences of successful companies, increase competitiveness for all especially small and medium-sized enterprises, and gain a deeper understanding of the requirements and future global trends of major buyers in different regions. We also would like to provide replicable and applicable methods and techniques for your reference.

Finally, I would like to express my gratitude to all the researchers and experts who participated in this study. Their hard work and professional knowledge have provided strong support for the writing of this report. We firmly believe that this report will contribute to the sustainable development of the local fashion and textile industry and bring a brighter future for us. I sincerely invite you to read this report carefully and share your thoughts and suggestions with us. Thank you

Prof Thomas CC Wong
President, Institute of International Sustainable Development

Preface

As the public becomes increasingly concerned about global warming, air and water pollution, the achievement of sustainable development has become an urgent goal. In order to promote the green transformation of the industries, as one of the pillar industries in Hong Kong, the fashion and textile industry will be one of the key drivers.

In view of the environmental issues which has aroused concerns among various sectors of the community, the HKSAR Government announced the "Hong Kong's Climate Action Plan 2050", outlining the strategies and targets for combatting climate change and achieving carbon neutrality. Faced with vigorous competition from neighbouring regions and the environmental trend, we need to consider how we can assist the industry in realising green transformation. The fashion and textile industry is an industry with high demand for capital, labour, and energy. Although Hong Kong's fashion and textile industry has made some progress in specific sectors and processes in terms of sustainable development, there is still room for improvement at a broader level of the entire supply chain. For small and medium-sized enterprises (SMEs), limited resource is a key factor that makes it difficult to start the sustainable development journey. Therefore, technical solutions that are cost-effective and can address industry pain points are of vital importance.

In promoting the sustainable development of the Hong Kong fashion and textile industry, The Institute of International Sustainable Development (ISD) can be regarded as a pioneer in the industry. In the past, ISD has held several seminars to promote the concept of sustainable development. This time, ISD has released a research report to consolidate different information for the industry, including good practices of international brands, information on global regulations and standards, and relevant policies of major export markets, etc. I believe that this report can help the Hong Kong fashion and textile industry better understand its sustainable development progress. SMEs can also learn from the experience of leading international companies, devise comprehensive strategies based on the actual operating conditions of individual enterprises, in order to promote green development and explore new business opportunities in the future.

In recent years, Hong Kong fashion and textile industry has been putting effort into the integration of innovative technologies with green concepts at various stages, starting from raw materials to recycling, and the application of sustainable development measures to different sectors such as design, research and development (R&D), production and brand promotion, etc. For SMEs who are still deliberating whether to incorporate green manufacturing into their business strategy or start the sustainability journey, there is no harm in looking into the case studies of local SMEs and considering how to implement practices and embrace sustainability concepts through sustainable production, design for sustainability, and partner synergy.

To promote the continuous innovation of Hong Kong's fashion and textile industry and constant transformation towards high-value-added industries, the industry needs to work together to realise the green concepts. As one of the leading local R&D institutions, the Hong Kong Productivity Council (HKPC) has made every effort to promote the application and commercialisation of green technology, including air pollution control, water resources, waste recycling, green transportation, and energy conservation, etc. In addition, HKPC has also tried its best to accelerate sustainable development, through leveraging technologies such as smart technologies, industry 4.0, and Internet of Things, etc., helping the industry to assess market demand accurately, grasping real-time data in production, and achieving rapid responses, to alleviate the problems of over-production. In the future, we will continue working closely with SMEs, learning from the successful experiences in different industries to provide targeted solutions for the challenges faced by the Hong Kong fashion and textile industry, amid promoting productivity excellence and leading the industry toward the journey of sustainability.

Hon Sunny Tan
Chairman, Hong Kong Productivity Council

Preface

Textile and garment industry is one of the major industries in the world. It has a role to play in driving the transition to a more sustainable future, and a holistic approach to address these impacts is necessary. Textile Council of Hong Kong, a body representing major textile associations in Hong Kong, is delighted to be one of the collaborating organisations on the project entitled "The road to sustainability - a study on sustainable development of Hong Kong fashion and textile industry", undertaken by the Institute of International Sustainable Development Ltd (ISD).

Sustainability is not only the right thing to do, but also good for business in the long term. As Chairman of Textile Council, I am pleased to recommend this report which contains research findings that shall increase the awareness of sustainable development trends and good practices for practitioners in the Hong Kong fashion and textile industry. This report provides a comprehensive overview of strategies that local practitioners, especially small and medium sized companies, could take reference from. It also provides insights into a better understanding of green manufacturing and sustainability.

Hong Kong is committed to achieving carbon neutrality by 2050. We look forward to raising awareness and promoting good practices to get our industry onto the right path of sustainability.

Dr Henry Tan
Chairman, Textile Council of Hong Kong

Preface

With sustainability and the environment becoming critical issues for consumers and governments alike, businesses must adapt their operations to make them eco-friendly. Among all supply chain activities, manufacturing is one of major sources of global carbon emissions. In particular, the fashion and textile industries are responsible for 10% of such emissions. Fast fashion is worse in that as it results in vast amounts of incinerated clothes, some of which are never even sold or worn.

Our goals of coming up with the latest fashions and making profits should not come at a cost to the planet! We must do our part to find a balance between economic interests and environmental sustainability to secure a liveable future for ourselves and for future generations.

We all know that pursuing green manufacturing and green operations is not easy. Companies need to adopt a holistic approach that takes into account the entire product lifecycle, from raw material extraction to disposal. This may involve using renewable and recycled materials, reducing waste and pollution through innovative technologies, promoting worker health and safety, and collaborating with stakeholders across the value chain.

Many manufacturers, especially SMEs, still feel that they can delay addressing sustainability issues because they lack awareness, resources, or necessary know-how. Thankfully, growing evidence suggests that companies, irrespective of their size, stand to benefit significantly from adopting sustainable practices. Green investment can be more than offset by cost savings; reduced risk; an enhanced reputation and the ability to meet consumer, investor, and supplier demands for environmentally conscientious products.

Sustainable development is a crucial and pressing task facing our country. The Mainland is aiming for carbon neutrality by 2060, and it has established climate change as an important part of promoting high-quality development. Hong Kong manufacturers who play an important role in the supply chain should shoulder more responsibility in the country's initiatives to achieve its climate and development goals.

It is timely that the ISD and HKPC have seen fit to study the trends of environmental practices in the fashion and textile industries. I believe that the practical advice and insights presented in this report will inspire industry players to act now to build sustainable capabilities for addressing complex environmental challenges and developing competitive advantages. The CMA, as one of the largest business organisations in Hong Kong, has adopted various green initiatives, including the latest ESG^{+} programme, to support members on their sustainability journey. We will, as always, work closely with partners like the ISD and HKPC to drive positive changes for all.

Dr Allen Shi

President, The Hong Kong Chinese Manufacturers' Association of Hong Kong

Preface

I am happy to see the report of the road to sustainability - a study on sustainable development of Hong Kong fashion and textile industry is released. The findings will be very useful to the development of the sustainability and green manufacturing of the Hong Kong fashion and textile industry.

Concerning to meet the carbon peak and carbon neutrality, and the sustainable development of Hong Kong fashion and textile industry, I would like to give my two cents.

First, enterprises can start from the very basic of dyeing and finishing, to make sure only use those material products with minimum discharge of waste water and use minimum water in treatment.

Second, enterprises can try to use green fibres and recycled yarns as much as possible, as well as bio-degradable synthetic yarns. Concerning color treatment of synthetic fibres, the fashion designer can use dope dyeing instead of yarn dyeing, which saves a lot of water and creates no pollution at all. The big handicap is the minimum quantity requirement which needs top brands to fix the world standard of color trend.

Also, new methods of yarn manufacturing process should be a future direction to reduce carbon emission. New nylon innovation that is developed and grew from plant instead of petrol will be a new innovation application.

Hong Kong fashion industry should try to meet for more tailor made solution for value added market by using high technology machines. As big brands have already started to reduce waste in dead stock and inventory, cutting room innovation for tailor made solution will be a key issue to reduce waste and man power.

I believe with the collaboration among the universities, research organisations and the Government together with the support of the government funds, Hong Kong fashion industry will head into a brighter future.

Dr Raymond Chu
Chairman, The Hong Kong General Chamber of Textiles

Chapter 1

Executive Summary

Chapter 1

Executive Summary

Traditional production practices of the fashion and textile industry ("the industry") have significant environmental impacts to the environment. With the growing attention on climate change and other shared social challenges, the industry strives to realise sustainable operations transformation and move towards green manufacturing. Regardless of company size, Hong Kong enterprises are encouraged to understand sustainability concepts and good green practices relevant to their business operations. This study aims to increase the awareness of relevant development trends and good practices, to help enterprises in the industry, including Small and Medium Enterprises ("SMEs"), understand the associated benefits and opportunities, as well as build competence to prepare for sustainable operations transformation and enhance their competitiveness in the global market.

In response to the growing attention to sustainability and green manufacturing trends, large-scale fashion and textile corporations worldwide strive to enhance their efforts to sustainable operations and green manufacturing. Their practice can be categorised into six major aspects - Carbon Targets, Energy Technologies, Sustainable Materials, Water Management, Pollution Control and Waste Reduction, with the aim to provide references to SMEs.

Combining online survey results and interviewees' opinions, over 90% of the respondents agreed that sustainable development was important. However, their current performance has room for improvement in handling surplus products, design and manufacturing, and selection of raw materials. Furthermore, 58% of the respondents believed that a large-scale sustainable development transition of the fashion and textile industry would happen in the future. In view of this, as important players in the extensive global supply chain, many Hong Kong SMEs in the fashion and textile industry have started to catch up with the international sustainability trend by implementing their sustainability measures. As the representatives of SMEs, ten local companies shared their stories for sustainable development. The ten cases were grouped into four categories: Embracing Sustainability Concepts, Sustainable Production, Design for Sustainability, and Partner Synergy.

To assist local companies, especially SMEs, in preparing for such sustainable operations transformation and green manufacturing. This study recommended SMEs improve in certain areas, such as Handling of Surplus Products (e.g. Upcycling technologies), Design and Manufacturing (e.g. Redesign of disposed products) and Raw Materials (e.g. Sustainable certifications materials). Some information of resources were also included but were not limited to financial support, technologies, and training sources, for SMEs to move toward sustainability.

Finally, special thanks are given to all stakeholders for their support, sharing and feedback throughout the development of this research paper.

Some keywords:
Hong Kong Fashion and Textile Industry; Sustainability; Green Manufacturing; Carbon Targets; Energy Technologies; Sustainable Materials; Water Management; Pollution Control; Waste Reduction; Embracing Sustainability Concepts; Sustainable Production; Design for Sustainability; Handling of Surplus Products.

Chapter 2

About This Study

Chapter 2

About This Study

In view of the growing trends of sustainability and green manufacturing in the fashion and textile industry, the Institute of International Sustainable Development Limited (ISD) has initiated a project entitled "The road to sustainability - a study on sustainable development of Hong Kong fashion and textile industry", with the funding from the Trade and Industrial Organisation Support Fund of the Trade and Industry Department, HKSAR Government, to carry out a research study of the sustainable development of Hong Kong fashion and textile industry ("the industry"). Sustainability offers various benefits to the Hong Kong Fashion and Textile Industry, for example, cost saving, improved reputation, environmental protection, social responsibility, risk management, and market competitiveness. By adopting sustainable practices, the industry can become more resilient, innovative, and competitive, in the long run. The following is an overview of the study, including its background, objectives, methodology, report structure, and limitations.

Background of the Study

In the midst of increasing attention on climate change and other shared social challenges, the Paris Agreement, a legally binding international treaty on climate change, has been adopted by 196 state parties on the long-term temperature goal to keep the rise in global average temperature to well below 2°C above pre-industrial levels, and preferably to pursue efforts to limit the increase to 1.5°C. The Mainland has announced its carbon peaking and carbon neutrality goals. While in Hong Kong, an official commitment was also made for the city to achieve carbon neutrality by 2050. In addition, companies listed on the Hong Kong Stock Exchange are required to disclose their sustainability governance and performance in annual Environmental, Social and Governance Reports ("ESG reports"). Meanwhile, both large corporate buyers and individual consumers become more and more inclined to paying for safety, wellbeing, and green, which drive a rising market demand for sustainable products and services. As a result, sustainability requirements from large buyers and consumers can significantly impact supply chains, including SMEs, in the fashion and textile industry.

In view of the above, it is believed that sustainability and green manufacturing will go mainstream for the fashion and textile industry in the future. Regardless of company sizes, local enterprises from the industry are encouraged to understand sustainability concepts and good green practices which are of relevance for their business operations. Moreover, the industry is well connected through supplier networks, thus sustainability awareness needs to be spread across the entire fashion supply chain, especially for small and medium enterprises ("SMEs") which are limited in resources.

Through this study, we aim at assisting the whole industry, including small and medium enterprises, to increase the awareness of the relevant development trends and good practices, so as to help them build up competence to prepare for the market trend for sustainability and enhance competitiveness in the global market.

Objectives

The purpose of this study is to facilitate Hong Kong fashion and textile enterprises better understand their progress in green manufacturing in comparison with other regions, as well as arouse the awareness of practitioners of Hong Kong fashion and textile industry on important sustainability and green manufacturing trends and enhance their knowledge on managing green manufacturing.

Methodology

This report summarises the major findings from the study, through desktop research, a questionnaire survey, and stakeholder interviews:

- Desktop research: a number of international corporate sustainability reports were studied to review the latest global industry trends and news. The coverage includes major market regions such as the Mainland, the United States, and Europe;
- A questionnaire survey: a survey using online questionnaires was conducted from July 2022 to Jan 2023 which targets to prioritise the most interested sustainability topics for Hong Kong fashion and textile industry. There were 129 respondents including textile manufacturers, exporters, buyers, suppliers, academia, industry associations, testing and certification bodies, etc.;
- Stakeholder interviews: interviews were conducted with 35 representatives selected from the respondents of the survey, which are local fashion and textile SMEs. 15 subject experts from industry associations, testing and certification bodies, supply chain partners, academic and public organisations, government departments and related bodies, were also invited for interviews, to seek for their professional views and insights on sustainability and green manufacturing.

Report Structure

This report provides an introduction in Chapter 3 of the latest trend of sustainability and relevance to the industry with directions for transformation and becoming "green". Chapter 4 is a summary based on reviewing a number of international corporate sustainability reports in the industry, with a focus on offer reference of good practices in sustainability and green manufacturing. Major development areas of industry guidelines and standards on sustainable fashion and textile are also presented. Chapter 5 reflects the major opportunities and challenges for Hong Kong industrial practitioners identified in the survey and stakeholder interviews. In Chapter 6, 10 selected cases from stakeholder interviews of local SMEs in the industry are shared to demonstrate that sustainable development thrives on leadership commitment, caring attitude, creativity and technology, despite ongoing challenges. At the end, Chapter 7 concludes the study with recommendations on areas for sustainability improvement for the Hong Kong fashion and textile industry, as well as provides references of some publicly available tools and platforms to interested companies for further exploration.

Limitations

This report mainly focuses on the environmental aspects of the fashion and textile industry, given the increased compliance requirements and public awareness of the importance of developing sustainable ways to combat climate change and global warming. In the meantime, policies and subsidies have been introduced in many countries and regions to encourage businesses to embark on environmental transformation, which is making it easier for SMEs to take their first step towards sustainable development.

The research findings are based on desktop research, survey responses, and interviews with Hong Kong fashion and textile industry representatives.

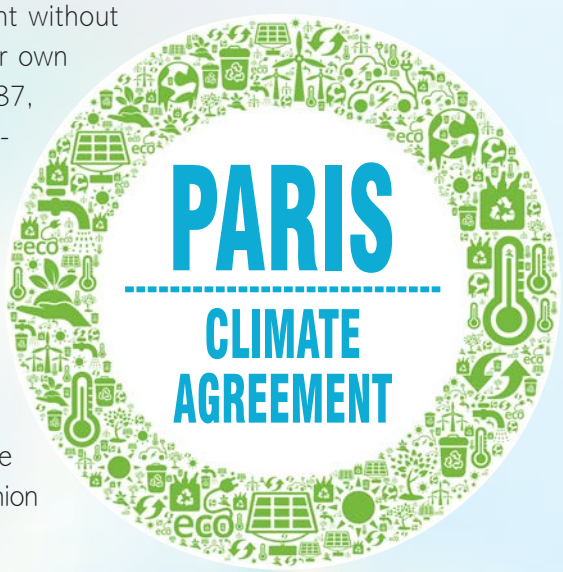
Chapter 3

Sustainability and the Fashion and Textile Industry

Chapter 3

Sustainability and the Fashion and Textile Industry

Sustainability, defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs," was formally introduced to be a global agenda, in 1987, by the United Nations Brundtland Commission. To achieve long-term prosperity and sustainability, the United Nations adopted a framework consisting of 17 Sustainable Development Goals (SDGs) in 2015, calling for urgent action on a global scale to enhance the quality of lives and to mitigate the impact of climate change.[1] In recent years, to tackle increasing climate change and to support local or regional initiatives, more and more organisations have made commitments to developing in a sustainable way and to reducing their emissions of Greenhouse Gases (GHG) to combat global warming. Companies in the fashion and textile industry are no exception.



Studies have linked the traditional fashion and textile industry to be one of the major contributors to environmental impact. With the development of sustainability awareness and innovations, the industry continues to upgrade, transform, and bring new solutions and user experiences, taking people and the planet into consideration. To align with the climate goals that were set out in the Paris Agreement, global and local efforts have been made continuously by many industry players. The climate goals aim to limit the global temperature increase in this century within 2°C while pursuing to limit such increase even within 1.5°C.[2]

3.1 Significant Impacts of the Fashion and Textile Industry

The fashion and textile industry enjoys a long and rich history, developing products for purposes ranging from life necessities to luxury artwork. Major activities of the industry consist of processing raw materials (e.g. cotton, wool, leather, fur, etc.), designing and producing fashion products, distribution, promotion, and retail sales.[3]

A fibre is the smallest unit of a textile material. There are two main type of textile fibres, namely natural fibres and man-made fibres. For natural fibres, it can be further classified into plant fibres (e.g., cotton, hemp, jute, linen, etc.) and animal fibres (e.g., wool, silk, etc.). For man-made fibres, it can be further classified into organic fibres (e.g., synthetic fibres such as polyester, acrylic, etc. and regenerated fibres such as viscose, acetate, modal, etc.) and inorganic fibres (e.g., carbon, glass, metal). Besides, leather and fur are widely used raw materials for textile production. The production of different types of fibres and raw materials is associated with different environmental impact, such as water consumption, carbon emission and ecotoxicity.

1. "Sustainability," The United Nations Academic Impact, accessed February, 2023, https://www.un.org/en/academic-impact/sustainability.
2. "The Paris Agreement," The United Nations Academic Impact, accessed February, 2023, https://www.un.org/en/climatechange/paris-agreement.
3. Steele and Major, "Fashion industry," Encyclopaedia Britannica, Inc, last modified October 26, 2022, https://www.britannica.com/art/fashion-industry.

Most fashion products are made from textiles, which involve the conversion of raw materials to fibres, fibres to yarns, yarns to fabrics, fabrics to garments, and finally to clothes, through a series of processes such as pre-treatment, dyeing, printing, and finishing treatment.[4] These processes, in traditional settings, often use significant amounts of resources, such as chemicals, water, energy, while also generating substantial wastewater and other wastes.

In the early 2000s, fast fashion became extremely popular, where consumers tended to purchase replicas of fashion products based on the latest catwalk trends and the most fashionable designs, while sacrificed the quality of products for lower prices. The pressure to produce in large quantities, speed up delivery time, and keep costs low caused the tremendous growth of the environmental impact brought by the industry. According to the United Nations Economic Commission for Europe, the fast fashion trend has provided opportunities for economic growth; however, it also hindered environmental sustainability efforts by contributing to 20% of wastewater and nearly 10% of Greenhouse Gases (GHG) of the total global amount.[5]

Large amounts of GHG, including carbon dioxide (CO_2), methane, nitrous oxide, and fluorinated gases generated from human activities, can absorb extra heat in the atmosphere, thereby causing global warming. GHG emissions are also known as "carbon emissions", as they are normally presented in the unit of CO_2-equivalent. Moreover, a carbon footprint is often used as a measurement of carbon emissions from a certain activity. According to a study in 2017, the fashion and textile industry was estimated to produce a total of 1.2 million tonnes of CO_2-equivalent annually. In 2018, the fashion and textile industry produced more carbon emissions than the total carbon emissions from France, Germany, and the UK.[6]

One of the major reasons for such high levels of carbon emissions is because polyester, a popular synthetic fibre used by the industry, is made from fossil fuels. The production of polyester generates a large amount of carbon emissions. Polyester is used for about 65 percent of all clothing, and consumes 70 million barrels of oil per year.[6] In addition, the fashion and textile industry uses large amounts of fossil-fuel-based plastic, such as for packaging and hangers.[7] The carbon emissions of the industry could increase by 26% in 2050 based on the current trajectory.[6]

Furthermore, in order to supply wood pulp for the industry to make natural fibres like rayon and viscose, 70 million tonnes of trees are fallen each year. That number is expected to be doubled by 2034, and therefore speeding up deforestation in some endangered regions.

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4. "The textile process," Chemical Management Guide by ChemSec, accessed February, 2023, https://textileguide.chemsec.org/find/get-familiar-with-your-textile-production-processes/.
5. "Fashion is an environmental and social emergency, but can also drive progress towards the Sustainable Development Goals," The United Nations Economic Commission for Europe, March 1, 2018, https://unece.org/forestry/news/fashion-environmental-and-social-emergency-can-also-drive-progress-towards.
6. "A New Textiles Economy: Redesigning fashion's future," The Ellen MacArthur Foundation, accessed February, 2023, https://ellenmacarthurfoundation.org/a-new-textiles-economy.
7. "Fashion's tiny hidden secret," The United Nations Environment Programme, March 13, 2019, https://www.unep.org/news-and-stories/story/fashions-tiny-hidden-secret.

Despite current efforts to reduce carbon emissions, the fashion and textile industry is still on a trajectory that will exceed the 1.5°C pathway to mitigate climate change set out in the Paris Agreement. In order to reach the 1.5°C target, the industry shall reduce GHG emissions to 1.1 billion tonnes of CO_2-equivalent by 2030.[8]

3.2 Latest Industry Trends of Sustainability

With growing attention on climate change and other social challenges, and to reach the worldwide pathway laid out by the Paris Agreement, many countries and regions introduced their sustainability agendas with targets, policies, regulations, or guidelines, which directly impact industries.

The Mainland announced to reach the CO_2 emissions peak before 2030 and achieve carbon neutrality before 2060.[9] The Government of Hong Kong announced the Climate Action Plan 2030+ in 2017, and updated to the Climate Action Plan 2050 in 2021. The Climate Action Plan 2050 aims to achieve carbon neutrality for the city by 2050. In the plan, Net-Zero Electricity Generation, Energy Saving and Green Buildings, Green Transport, and Waste Reduction are listed as the major decarbonisation strategies and measures.[10]

As manufacturers, fashion and textile companies are urged to take responsibility in tackling the global climate crisis by playing an important role in implementing green manufacturing throughout their comprehensive supply chain.

With increasing public awareness of sustainability, a company's sustainability commitments, performance, and innovative solutions are set to become a competitive advantage.

Some large-scale fashion and textile companies have started to proactively respond to the global and local trends of sustainable development. However, not only do large-scale companies need a sustainability transformation, but also should SMEs catch this trend to improve their competitive advantages and enhance operational resiliency.

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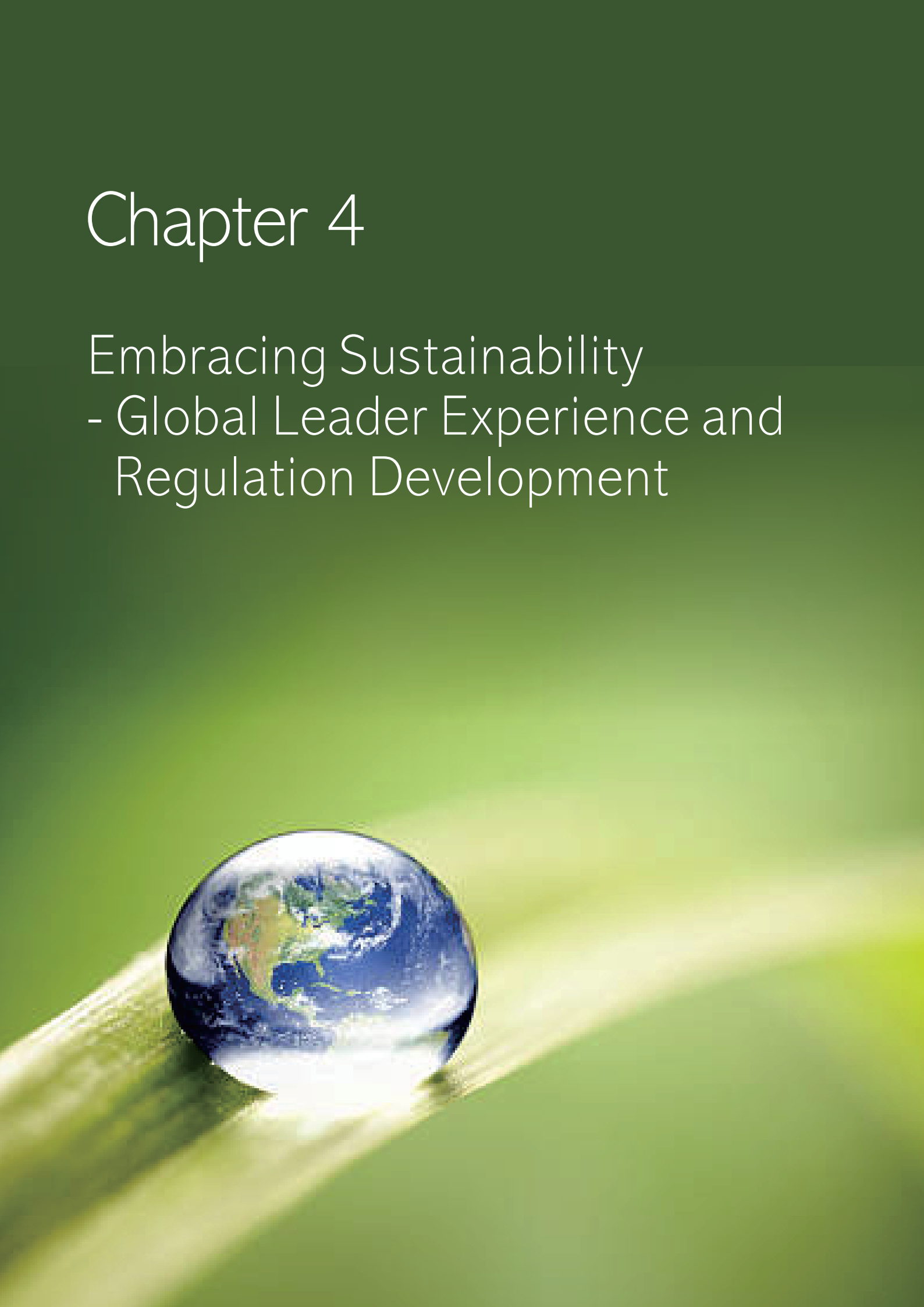
8. Berg et al., "Fashion on climate," McKinsey & Company, August 26, 2020, https://www.mckinsey.com/industries/retail/our-insights/fashion-on-climate.
9. 史作廷、希杰，〈努力推碳峰碳中和目〉，中人民共和国国家展和改革委，〈https://www.ndrc.gov.cn/wsdwhfz/202111/t20211111_1303691_ext.html〉。（2021 年 11 月 11 日）。
10. "Government announces Hong Kong's Climate Action Plan 2050 (with photos)," The Government of the Hong Kong Special Adminstrative Region, October 8, 2021, https://www.info.gov.hk/gia/general/202110/08/P2021100800588.htm.

Chapter 4

Embracing Sustainability - Global Leader Experience and Regulation Development



Chapter 4

Embracing Sustainability - Global Leader Experience and Regulation Development

Hong Kong's fashion and textile industry is capable of producing a wide range of quality and specialised products both in bulk and in short lead-time. Its competitive edge lies in the superb quality and swift response to fashion trends and market demands. The industry has also earned a worldwide reputation for quality, expertise, workmanship, and flexibility. To draw international reference for the SMEs of the local fashion and textile industry on sustainable development, this chapter provides an overview of the industry's good practices, based on some leading corporations' sustainability reports and green manufacturing initiatives. In addition, major international guidelines and standards relating to sustainable fashions and textiles, and some latest developments on relevant policies and guidelines in the three major export markets of the Mainland, the United States, and Europe (European Union) are also introduced.

4.1 Good Practices from International Brands

In response to growing attention on the sustainability and green manufacturing trends, large fashion and textile corporations in the world strive to enhance their efforts to sustainable operations and green manufacturing. A number of international brands have been selected for study, in consideration of their ambitious sustainability commitments and good practices, which can be categorised into the following six major aspects.

Carbon Targets

Target setting is a pivotal step to track a company's environmental performance. Companies can develop their own short-term targets, medium-term targets, and long-term targets, in view of their current situations and future visions. For example, most of the studied leading corporations have set their long-term carbon targets to achieve net-zero emissions by 2050 across the entire value chain (e.g., Adidas,[11] Nike,[12] Esquel Group[13]), and some companies even aim to achieve carbon neutrality by 2040, ten years earlier (e.g., H&M Group[14] and Inditex[15]). Regarding short- to medium-term targets, these pioneer brands mostly focus on reducing the intensity of their Scopes 1 and 2 GHG emissions. Among them, Levi Strauss & Co.[16] is committed to reducing absolute Scopes 1 and 2 GHG emissions by 90% by 2025, compared to the base year 2016. Levi Strauss & Co. also targets to reduce absolute Scope 3 emissions from purchased goods and services by 40% by 2025.

11. "Annual Report 2021," Adidas, accessed December, 2022.
12. "FY21 NIKE, Inc. Impact Report," Nike, Inc, accessed December, 2022.
13. "2021 Esquel UNSDGs Progress," Esquel Group, accessed December, 2022.
14. "H&M Group Sustainability Disclosure 2021," H&M Group, accessed December, 2022.
15. "Inditex Annual Report 2021," Inditex, accessed December, 2022.
16. "Levi Strauss & Co. 2020 Sustainability Report," Levi Strauss & Co, accessed December, 2022.

New Energy Technologies

To enhance energy performance, international leading companies have been proactively embracing new energy technologies. For example, Crystal International Group,[17] Lenzing Group,[18] and Luen Thai[19, 20] have adopted renewable energy (e.g., installation of solar panels at operation sites), applied cleaner fuels (e.g., bio-fuel), and retrofitted energy-efficient lighting (e.g., LED). Gildan[21] has invested in innovative technologies such as installing biomass energy systems and employing heat recovery systems in Dominican Republic and Honduras.

Sustainable Materials

Increasing the percentage of organic materials and recycled materials used in production has become a most direct approach for many sustainable fashion brands. Crystal International Group, Hop Lun,[22] and PVH[23] Corporation have used a larger portion of materials that meet or are certified to sustainability standards. Some of the commonly used standards include Better Cotton Initiatives ("BCI"), Global Organic Textile Standard ("GOTS"), Global Recycle Standard ("GRS"), Organic Content Standard ("OCS"), STANDARD 100 by Oeko-Tex®, Recycled Claim Standard ("RCS"), Forest Certification ("PEFC"), Forest Stewardship Council ("FSC"), and Controlled Wood Mix.

Meanwhile, some companies in the industry have been investing in innovative biotechnologies to make raw materials "greener". For instance, the Lenzing Group uses renewably sourced wood as an universal replacement for non-renewable raw materials which are of growing concerns (e.g., crude oil). By dissolving and processing wood pulp in a closed loop without any chemical derivatisation, fibres are produced in a more sustainable way with predetermined properties and quality characteristics. Nike has also been working on replacing synthetic leather and leather scrap with more sustainable materials.

Water Management

The fashion and textile industry consumes a large amount of water. Textile wastewater is often produced during the wet processing of textiles such as bleaching, dyeing, and finishing. High concentration of chlorides and nitrates may be found in the wastewater. Such wastewater may contain high levels of organic matter resulting in high biochemical oxygen demand (BOD_5) and chemical oxygen demand (COD). The effluent may also contain hazardous chemicals such as chlorine bleach, formaldehyde, and lead. These hazardous chemicals may cause water pollution and environmental impacts, if without proper treatment. Therefore, leading brands continue to explore advanced water-efficient processes to lower freshwater consumption, and to reduce, recycle, and treat wastewater. For example, Nike's Factories reduced freshwater consumption by using low-liquor dyeing equipment. In addition, some companies, such as Esquel Group, Inditex, and Luen Thai, have started reusing or recycling treated wastewater, applied sustainable washing formulas, and implemented proper water management procedures to improve their water efficiency.

17. "Sustainability Report 2021," Crystal International Group Limited, accessed December, 2022.
18. "Sustainability Report 2021," Lenzing Group, accessed December, 2022.
19. "ESG Report 2020," Luen Thai, accessed December, 2022.
20. "ESG Interim Report 2021," Luen Thai, accessed December, 2022.
21. "ESG Report 2020," Gildan, accessed December, 2022.
22. "Hop Lun Sustainability Report 2021 Volume 2," Hop Lun, accessed December, 2022.
23. "2020 Corporate Responsibility Report," PVH Group, accessed December, 2022.

Pollution Control

For the fashion and textile industry, pollutants are mainly generated from chemicals used in production processes. For effective pollution control, many fashion companies have optimised their production processes and used innovative solutions to reduce hazardous chemical use or replace such chemicals with green alternatives. For example, Levi Strauss & Co. has implemented a Screened Chemistry Program to screen out hazardous chemicals, which has also been embedded in their innovation processes and chemical management system. Utilizing the U.S. EPA Safer Choice Program and GreenScreen® for Safer Chemicals, Levi Strauss & Co. created a scoring system to rate chemicals and chemical formulations based on human health and environmental toxicity hazard endpoints. Ultimately, all Levi Strauss & Co. suppliers will use only chemicals that have been screened through the Screened Chemistry framework. Crystal International Group, on the other hand, has adopted advanced laser technology and oxidation process and utilised green chemicals conformed with the Zero Discharge of Hazardous Chemicals ("ZDHC") Manufacturing Restricted Substances List ("MRSL").

Waste Reduction

In order to minimise waste generation and lower impact to the environment, leading brands have been applying new approaches such as waste transformation, optimisation of material utilisation, and a circular business model.

Adidas strives to divert its waste from landfill by setting up a program in 2019 in its major sourcing countries, such as Cambodia and Vietnam, to use production waste as a local energy source.

Esquel Group has invested in maximising material utilisation and reducing the amount of waste from production processes. By gradually digitalising its product development and materials library, the company is able to reduce unnecessary consumption of materials and lessen logistical burdens across its entire workflow.

PVH Corporation has launched a circular business model to collect used items and damaged pieces from consumers through stores or online platforms for resale. The company has partnered with Fashion for Good to recycle used polybags to make polybags with 80% post-consumer recycled content.

4.2 International Standards and Certifications

International standards and certifications provide an important mechanism for the fashion and textile industry to analyse sustainability impacts from textile manufacturing quantitatively and qualitatively, and provide directions on how the impacts can be mitigated. These standards function to prioritise the health and safety of workers, uphold human rights, as well as protect the environment. The implementation of sustainability standards by the fashion and textile industry represents commitment and progress towards the future that the industry strives to take a lead in sustainable practices. Currently, the majority of sustainability standards in the industry address some focused areas including materials, sustainable chemistry and safety, sustainable value chain, and overall management systems.

There is a large number of standards and certificates provided by different institutions and organisations that prove ecological and social sustainability in the above-mentioned aspects. In this part, we will overview some of the major certification systems around the world.

Materials

In the industry, a product would be considered more sustainable and environmental friendly if its raw materials are certified as organic or recycled. Among many standards for organic textiles, the Organic Content Standard (OCS) is one of the well-known standards. The OCS is a voluntary global sustainability standard with an objective to promote organic agriculture production through the establishment certification requirements on organic materials and the chain of custody. Regarding the standards for textiles with recycled materials, two popular sustainability standards are the Recycled Claim Standard (RCS) and the Global Recycled Standard (GRS). Both of these standards have been experiencing significant growth in recent years. The RCS and the GRS set the criteria for third-party certification of recycled materials and chain of custody.

Sustainable Chemistry and Safety

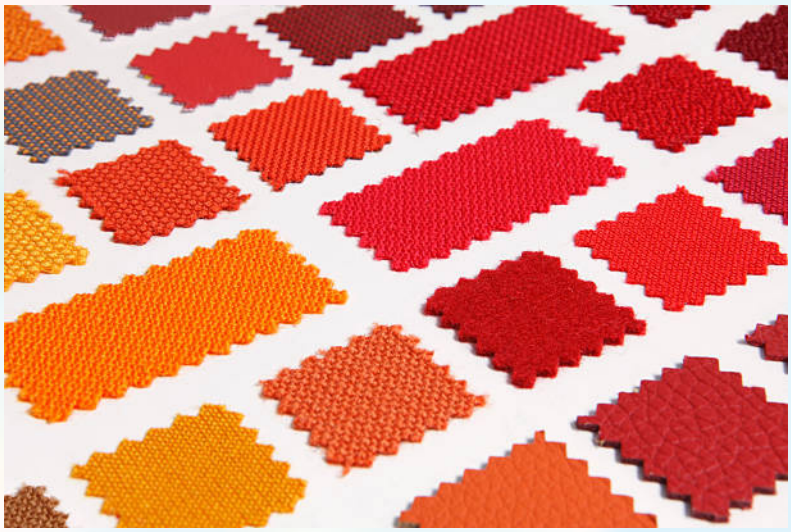
Bluesign® is a full-service solutions system for the textile value chain which focuses on sustainable chemistry. Through on-site assessments, input stream management, and chemical inventory verification, Bluesign® uses a holistic approach together with partners, including brands, manufacturers, and chemical suppliers, to develop unique solutions to improve environmental performance, working environment, and resource utilisation, to create the highest level of safety for people, planet and consumers.[24]

Chemical safety is another critical concern for sustainable textile. OEKO-TEX® is one of the most recognised systems for textile and leather products around the world, which assesses chemical safety. It issues various product-related certification labels. And the most well-known of these is the STANDARD 100, which tests textile items for a range of chemicals and certifies those that are safe for use.[25]

24. "Your partner in responsible and sustainable textiles," bluesign, accessed February, 2023, https://www.bluesign.com/en.
25. "Our standards," OEKO-TEX Service GmbH, accessed February, 2023, https://www.oeko-tex.com/en/.

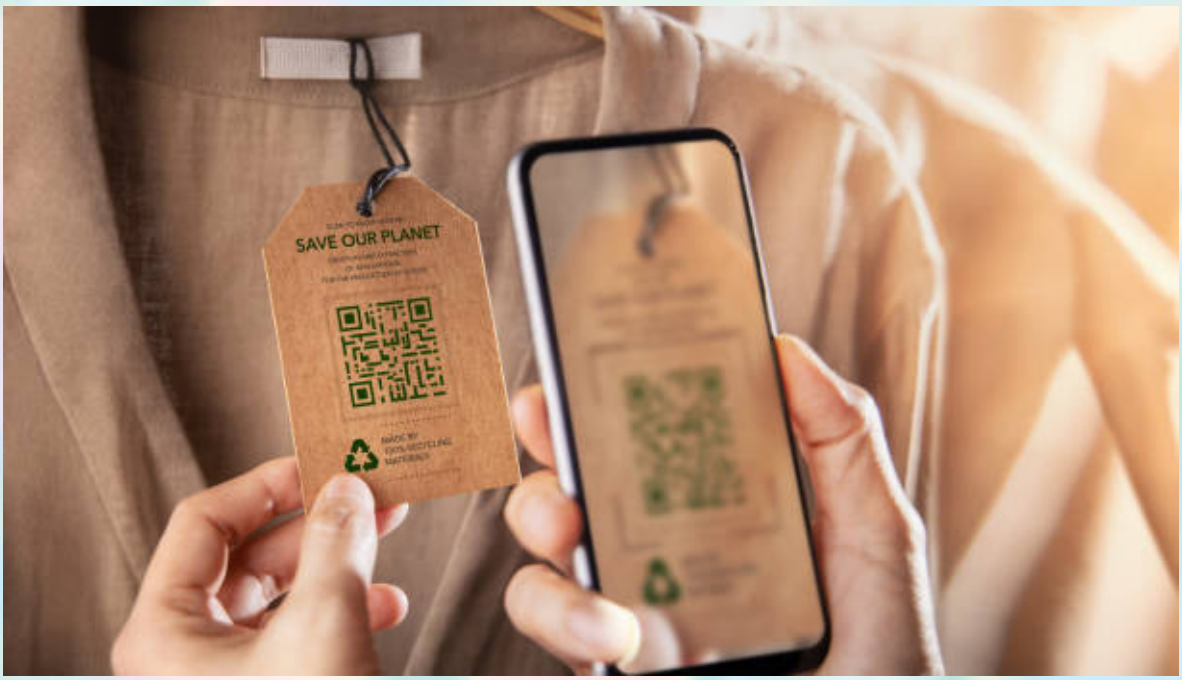
Sustainable Value Chain

The Higg Index is a suite of tools for the standardised measurement to assess the social and environmental performance of the value chain and the environmental impacts of products. The tools include the Higg Facility Environmental Module (FEM), Higg Facility Social & Labour Module (FSLM), Higg Brand & Retail Module (BRM), Higg Materials Sustainability Index (MSI), and Higg Product Module (PM). It is developed in partnership with the members, consultants, stakeholders, and industry experts of the Sustainable Apparel Coalition ("SAC"), and is continuously evolving based on latest scientific research and data.[26]



Management Systems

To help companies to establish a systematic mechanism for continuous improvement in sustainability based on the Plan-Do-Check-Act cycle, International Organization for Standardization (ISO) has developed various industry standards. Some widely adopted standards, including ISO 14001 environmental management systems, ISO 50001 energy management systems, and ISO 45001 occupational health and safety management systems, are used by the fashion and textile industry.



26. "The Higg Index," Sustainable Apparel Coalition, accessed February, 2023, https://apparelcoalition.org/the-higg-index/.

4.3 Development of Policies and Standards Relating Sustainable Fashion and Textiles

The Mainland, the United States, and Europe (EU) are three major export markets of Hong Kong's fashion and textile products. According to the market research conducted by HKTDC, in the first five months of 2020, the Mainland accounted for the majority of 36% of the total export, despite a 33% plunge. On the other hand, sales to a number of developed markets (e.g., the US, Europe) reported encouraging growth. In particular, Hong Kong's fashion and textile products exporting to the US, France and Germany showed significant increases of 188%, 628% and 149%, respectively. Hence, some latest developments on sustainability-related policies and guidelines in these major markets are expected to be impactful for the fashion and textile industry in Hong Kong. These developments are briefly introduced below highlighting some main trends globally, namely ESG disclosures, sustainable materials, green production, waste recycling, and circular economy.

ESG Disclosures

ESG stands for Environmental, Social, and Governance. With the increasing expectation on corporate responsibility of the public, ESG disclosure requirements have been tightened for large or listed corporations. For example, in Hong Kong, the local authority has introduced the ESG Report Guide (Appendix 27) under the Listing Rules, requiring compulsory reporting of listed companies of applicable ESG performance data and information on an annual basis. In Europe, the proposed EU Corporate Sustainability Reporting Directive (CSRD) adds new requirements under the Non-Financial Reporting Directive (NFRD), heralding a significant expansion in the range of entities required to report and what those disclosures must cover.[27] In the US, chairman of the Securities and Exchange Commission (SEC), Gary Gensler, has suggested mandatory disclosure on climate-related risks.[28] Furthermore, legislators in New York introduced the Fashion Sustainability and Social Accountability Act in January 2022. Enterprises with more than $100 million global sales have to publish an annual "Social and Environmental Sustainability Report", and publicise their results of business evaluations and processes in the environmental and social aspects.[29]

Sustainable Materials

As the basis for manufacturing fashion and textile products, raw materials represent one major focus of the fashion and textiles industry. For sustainable development, different countries have introduced their own standards to uphold raw material requirements. The Mainland has developed Chinese national GB standards that apply to textiles and clothing, limiting levels of harmful substances in products. Some of these standards include: GB 18401-2010 National General Safety Technical Code for Textile Products, GB 20400-2006 Leather and Fur- Limit of Harmful Matter, and GB 31701-2015 Safety Technical Code for Infants and Children Textile Products.[30, 31,32] On the other hand, the European Commission is setting mandatory minimums for the inclusion of recycled fibres in textiles.[33]

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27. "Sustainability disclosure requirements increase", KPMG, accessed February, 2023, https://kpmg.com/xx/en/home/insights/2021/10/sustainability-disclosure-requirements-increase.html.
28. Gary Gensler, "Prepared Remarks Before the Principles for Responsible Investment "Climate and Global Financial Markets" Webinar," U.S. Securities and Exchange Commission, July 28, 2021, https://www.sec.gov/news/speech/gensler-pri-2021-07-28.
29. Halper et al., "Is Sustainability En Vogue or the Newest Staple? What New York's Proposed Fashion Sustainability and Social Accountability Act Could Mean for the Fashion and Other Industries," National Law Review 13, no. 111 (2013): https://www.natlawreview.com/article/sustainability-en-vogue-or-newest-staple-what-new-york-s-proposed-fashion.
30. 〈中華人民共和國國家標準：國家紡織產品基本安全技術規範〉，中華人民共和國國家質量監督檢驗檢疫總局、中國國家標準化管理委員會，http://c.gb688.cn/bzgk/gb/showGb?type=online&hcno=52C1F4CBDE863F5095D7C9D17F8E3F71 。（2011 年 1 月 14 日）。
31. 〈中華人民共和國國家標準：皮革和毛皮有害物質限量〉，中華人民共和國國家質量監督檢驗檢疫總局、中國國家標準化管理委員會，http://c.gb688.cn/bzgk/gb/showGb?type=online&hcno=273A2C66BFE5ED548A5CA36C86056B9D。（2006 年 4 月 3 日）。
32. 〈中華人民共和國國家標準：嬰幼兒及兒童紡織產品安全技術規範〉，中華人民共和國國家質量監督檢驗檢疫總局、中國國家標準化管理委員會，http://c.gb688.cn/bzgk/gb/showGb?type=online&hcno=1698157554F00EED2E79EC6BFF7F4DF0（2015 年 5 月 26 日）。
33. "Questions and Answers on EU Strategy for Sustainable and Circular Textiles," European Commission, March 30, 2022, https://ec.europa.eu/commission/presscorner/detail/en/QANDA_22_2015.

Green Production

Traditional production processes often involve the use of chemicals and apply a large amount of water, and thereby creating negative impacts to the environment. By embracing environmental concepts, green production encourages manufacturers to adopt advanced technologies and effective solutions to improve the environmental performance of their factories, forming a noticeable trend among supply chains in recent years. Some countries and regions have established their guidelines to help promote this concept. In December 2022, the new European Commission Decisions refer to the management and treatment of waste gas in the chemical sector and a series of activities in the textile industry, with particular concerns over emissions to air and water, and setting reduction targets for the emissions of over 20 air and water pollutants, including formaldehyde, total VOCs, dust, as well as ammonia for emissions to air, or metals for emissions to water.[34] In the meantime, California will ban the sale, distribution and manufacture of textile products that consist of perfluoroalkyl and polyfluoroalkyl substances (PFAS) in 2025 while PFAS-containing outdoor apparel for severe wet conditions will be prohibited in 2028.[35]

Waste Recycling

Recycling textile waste can not only reduce solid waste to landfills, but also lower the need to grow, harvest or extract new raw materials. Hence, many measures have been set up by global authorities to promote awareness of textile recycling and to improve the recycling rate. For example, in April 2022, the National Development and Reform Commission, the Ministry of Commerce, and the Ministry of Industry and Information Technology of China jointly issued the Implementation Opinions on Accelerating the Recycling of Waste Textiles (the "Implementation Opinions"). The Implementation Opinions set clear targets for the waste textile recycling industry in the Mainland to grow by 25% and 30% by 2025 and 2030 respectively. Meanwhile, the EU will impose mandatory source separation and collection of clothes for easy reuse and recycling in 2025. Furthermore, the EU is considering whether to set reuse and recycling targets before 2024.[36] At the same time, California implemented a stewardship programme (the "Responsible Textile Recovery Act of 2023") which facilitates the collection and recycling of textile fibres.[37]

Circular Economy

Along with the transition to a circular economy in society, it would be better for the fashion and textile industry to capture the value of surplus or otherwise sent-to-landfill clothes. In March 2020, the European Commission presented the Circular Economy Action Plan which identified textiles as a critical product value chain with the potential to boost the EU market for sustainable and circular textiles. In March 2022, the EU Strategy for Sustainable and Circular Textiles was adopted by the European Commission. The Strategy proposes actions throughout the entire lifecycle of textiles products while supporting the ecosystem in the green and digital transitions.[33]

In view of the above trends in sustainable fashion and textile related policies and guidelines in major markets, it is foreseeable that there will be demands for 1) sustainable performance disclosure; 2) sustainable products; 3) green production transformation; 4) waste management; and 5) adaption of a new business model.

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33. "Questions and Answers on EU Strategy for Sustainable and Circular Textiles," European Commission, March 30, 2022, https://ec.europa.eu/commission/presscorner/detail/en/QANDA_22_2015.
34. "New EU environmental norms to make chemical and textile industry plants greener," European Commission, January 13, 2023, https://joint-research-centre.ec.europa.eu/jrc-news/new-eu-environmental-norms-make-chemical-and-textile-industry-plants-greener-2023-01-13_en.
35. "AB-1817 Product safety: textile articles: perfluoroalkyl and polyfluoroalkyl substances (PFAS)," California Legislative Information, March 10, 2022, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB1817.
36. Nikolina ajn, "Textiles and the environment," European Parliament, May 2022, https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/729405/EPRS_BRI(2022)729405_EN.pdf.
37. "SB-707 Responsible Textile Recovery Act of 2023," California Legislative Information, last modified March 20, 2023, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202320240SB707.

Chapter 5

Hong Kong Fashion and Textile Sustainability State: Trend, Challenge and Opportunity

Chapter 5

Hong Kong Fashion and Textile Sustainability State: Trend, Challenge and Opportunity

In order to identify potential opportunities and challenges in the industry and explore how the industry can adopt green approaches to become more sustainable, a series of stakeholder engagement activities have been carried out to collect information on current international industry practices and expert opinions. These stakeholder engagement activities were also aimed to help prioritise the most important areas for SMEs to gain sustainability-related knowledge and increase their competence. There are two main types of the stakeholder engagement activities, including an online questionnaire survey, and a series of interviews with some SMEs representatives and individual subject experts.

The results of the questionnaire survey and interviewees' feedbacks are summarised into four aspects that are to be elaborated in Chapter 5 and Chapter 6, namely 1) prioritisation of the most interested sustainability topics (see 5.2-5.3); 2) understanding the industry's progress in sustainability and green manufacturing (see 5.4-5.6); 3) seeking expert's professional views and insights (see 5.7); and 4) sharing of good practices from SMEs (see Chapter 6).

5.1 Summary of the Survey Respondents

2022 Sustainability Survey for the Hong Kong Fashion and Textile Industry

Date: Jul 2022 to Jan 2023
Valid Response: 129

Note:

1. Some respondents are involved in more than one business natures, so the sum of the business distribution is over the total number of responses.
2. Majority of the exporters are involved other business nature(s) including as manufacturers, suppliers, or brands.

To reflect the collective knowledge of the industry, the major findings of the survey are discussed in four aspects, including Importance of Sustainability; Present Status of Performance; Future Trends; and Focuses per Business Nature . The highlights are presented below, with reference to specific sessions for more details.

5.2 Survey Findings at A Glance

1 Importance of Sustainability
(See 5.3)
- Over 90% of the respondents agreed that sustainable development is important
- Top three sustainable issues: Climate Change, Green Supply Chain, and Carbon Neutrality
- Top interested sustainability issues for manufacturers and suppliers, as well as for brands,
  - Manufacturers and suppliers: Environmentally friendly dyes, Pollutant treatment, Sustainable materials
  - Brands: Sustainable materials, Organic materials, Pollutant treatment

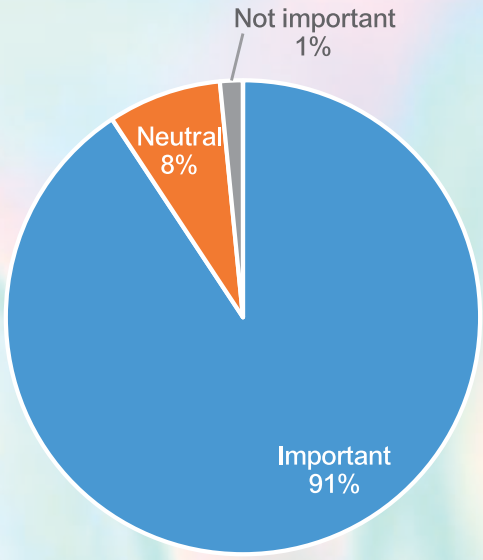
2 Present Status of Performance
(See 5.4)
- The respondents proposed to improve in the following areas: Handling of surplus products, Raw materials, and Design and manufacturing

3 Future Trends
(See 5.5)
- 58% of the respondents believed that a large-scale sustainable development transition of the fashion and textile industry will happen in the future (among which 70% of them believed that the transition will happen within 10 years)
- Top three actions for future sustainable development: Developing sustainable materials, Sustainable product design, and Reducing product packaging
- The most effective supports for sustainable development: Public education on sustainability, Training and skill development, and Green subsidies

4 Focuses per Business Nature
(See 5.6)
- Manufacturers and suppliers:
  - Low implementation rate of Environmental Management System (EMS) / Environment, Health and Safety Management System (EHS)
  - Low rate of data collection
  - Low adoption rate of green manufacturing technologies
  - Less readiness for sustainability transformation
- Brands:
  - Just 30% of the brands have a green procurement policy
  - 47% of the brands are selling the sustainable products

5.3 Importance of Sustainability

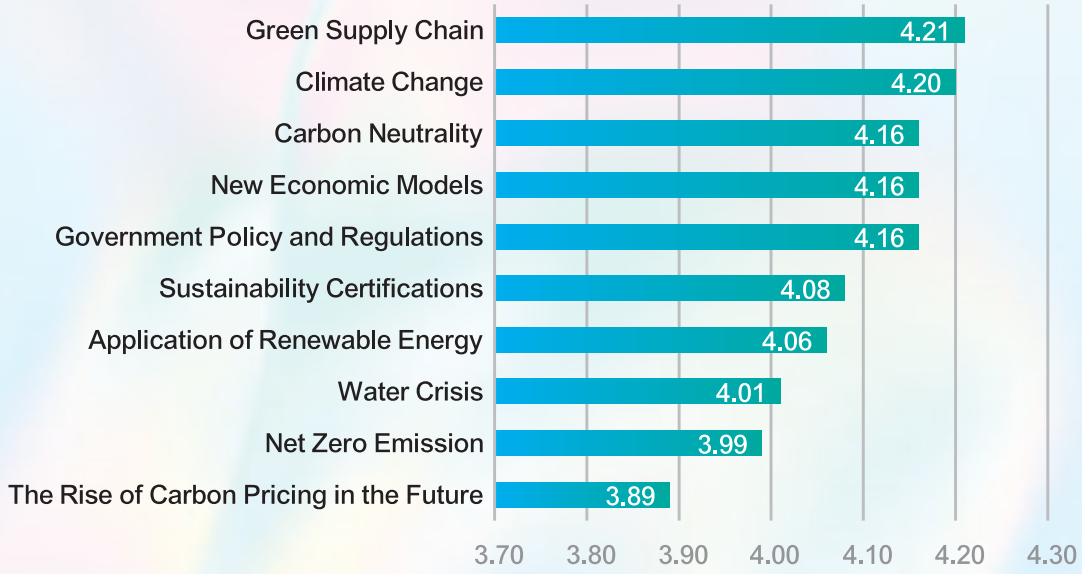
As the first question at the beginning, the survey asked whether the respondents treated sustainability as an important issue. Over 90% of the respondents agreed that sustainable development is important, out of which 89% would pay attention on the application of recycling technology and sustainable materials.



Graph 1: Importance of Sustainability

Sustainability Research Report for
the Hong Kong Fashion and Textile Industry by ISD

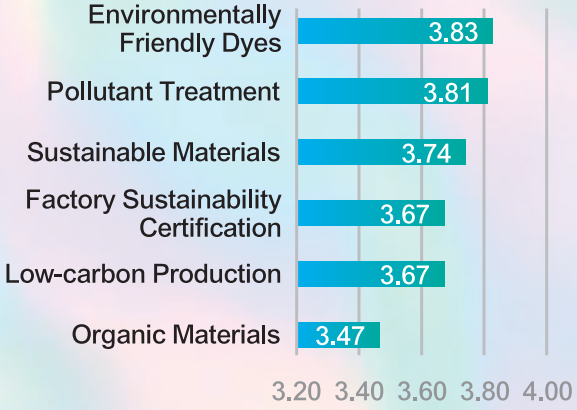
As demonstrated in graph below, the industry is highly interested in a wide range of sustainability issues, especially green supply chain, climate change, carbon neutrality, government policy and regulations, and new economic models in the next decade.



Graph 2: Sustainability Issues in the Development of Hong Kong Fashion and Textile Industry in the next 10 years
(1-Lowest, 5-Highest)

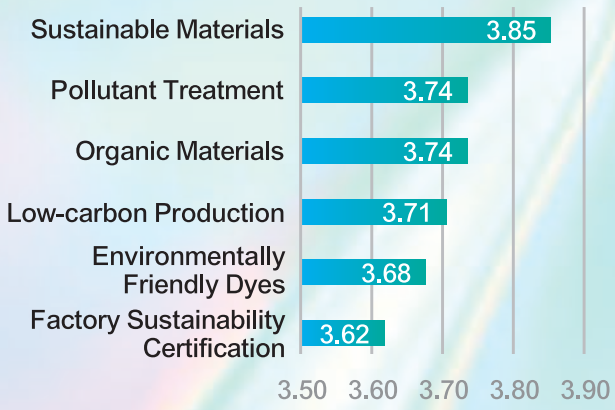
Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD

The most interested sustainability issues for manufacturers and suppliers, as well as for brands, are ranked respectively by the types of respondents and shown below. The top three sustainability issues for manufacturers and suppliers include environmentally friendly dyes, pollutant treatment, sustainable materials. For brands, the top three sustainability issues are sustainable materials, organic materials, pollutant treatment.



Graph 3: Importance of the Following Issues from Manufacturers and Suppliers
(1-Not important, 5-Very important)

Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD



Graph 4: Importance of the Following Issues from Brands
(1-Not important, 5-Very important)

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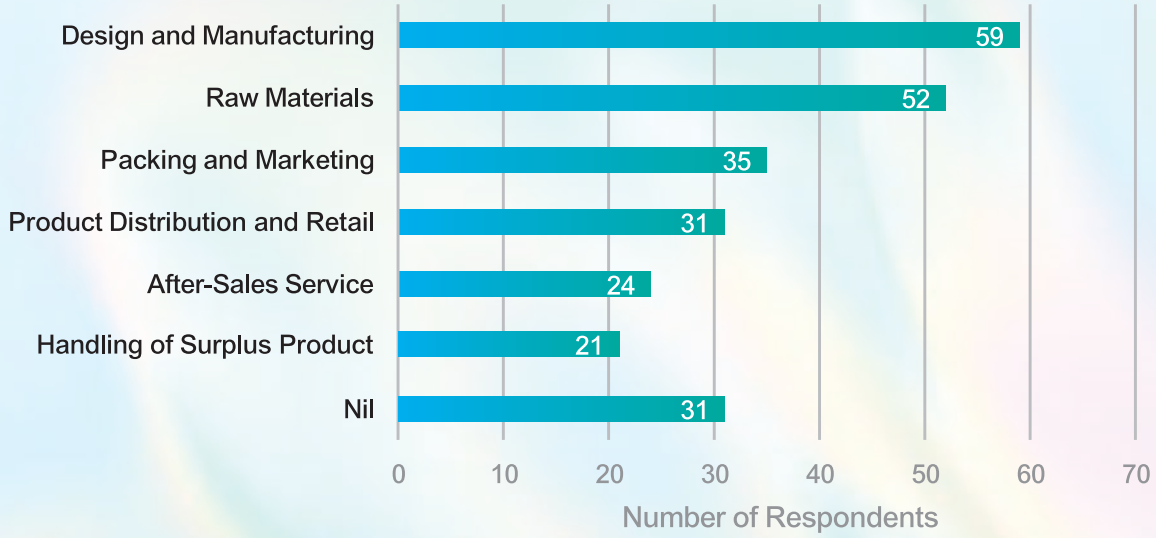
5.4 Present Status of Performance

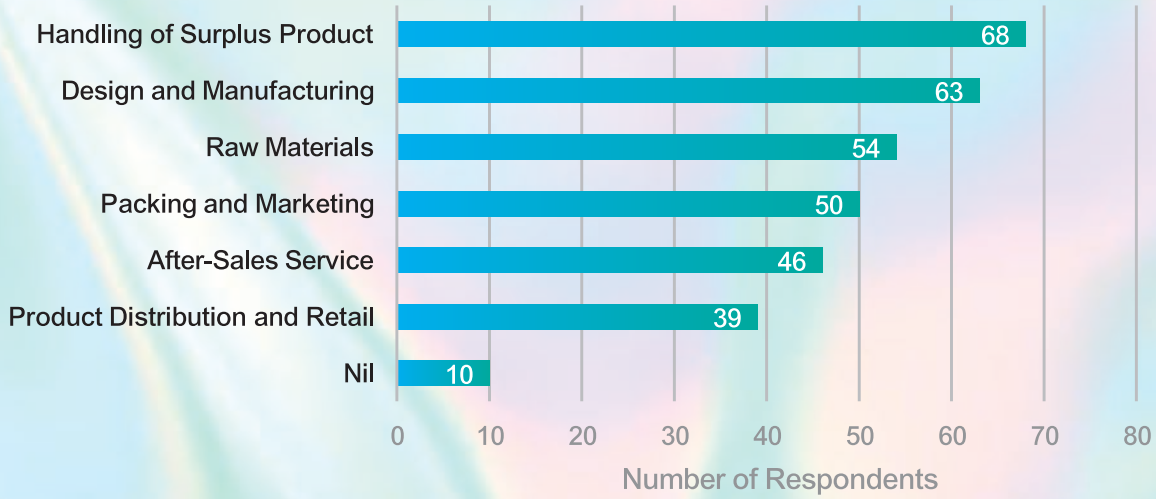
The survey has also studied the present status of the industry's performance on sustainability and green manufacturing along the product life cycle. The following results demonstrate the areas with satisfactory performance and suggest improvement on some processes. According to the survey respondents, the sustainability performance on design and manufacturing are considered satisfactory, especially in the areas of extension of product life cycle by design and production monitoring to comply with internal and external environmental and safety requirements. Regarding the selection and process on raw materials, the sustainability performance is above average due to the sourcing of sustainable materials such as upcycled materials, recycled materials and fair-trade materials.



Graph 5: Well-performing Areas in Sustainable Development

Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD

Most respondents selected handling of surplus products as the most concerned area which sustainability performance needs to be improved. It has room for improvement especially in terms of the recycling approach. Design and manufacturing, and raw materials, ranked after handling of surplus products as areas needing for improvement.



Graph 6: Areas Most in need of Performance Improvement in Sustainability

Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD

Combining Graph 5 and Graph 6, despite design and manufacturing get the highest score, the respondents have higher expectation by proposing enhanced measures such as introducing green manufacturing technology, developing recycling technology for old garments, or using more environmental-friendly dyeing technology.

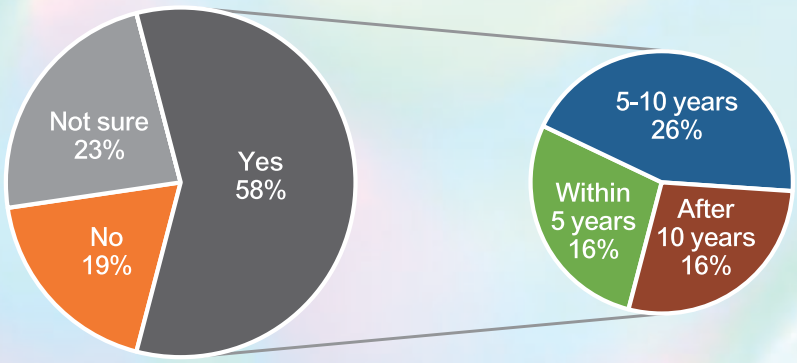
In addition, most of interviewees opined that sustainable design is a good starting point to improve sustainability performance and respond to sustainability issues. Designers not only can select design elements to affect the product life cycle but also maximise material usage and determine production feasibility. However, not many design schools teach technical knowledge about materials, processing technology, production, etc., so designers may not be aware of these aspects at the beginning.

In general, the industry is transforming to a greener one. In order to facilitate the greener transformation, the industry shall make more effort on the appropriate handling of surplus products, sustainable design and manufacturing, and raw materials.

5.5 Future Trends

With the growing interest in sustainability due to climate change and other global challenges, it is important to project the impact of the sustainability trend to the fashion and textile industry in future. In the survey, all the respondents were asked some questions regarding their understanding of future trends and possible directions for the industry's sustainable development.

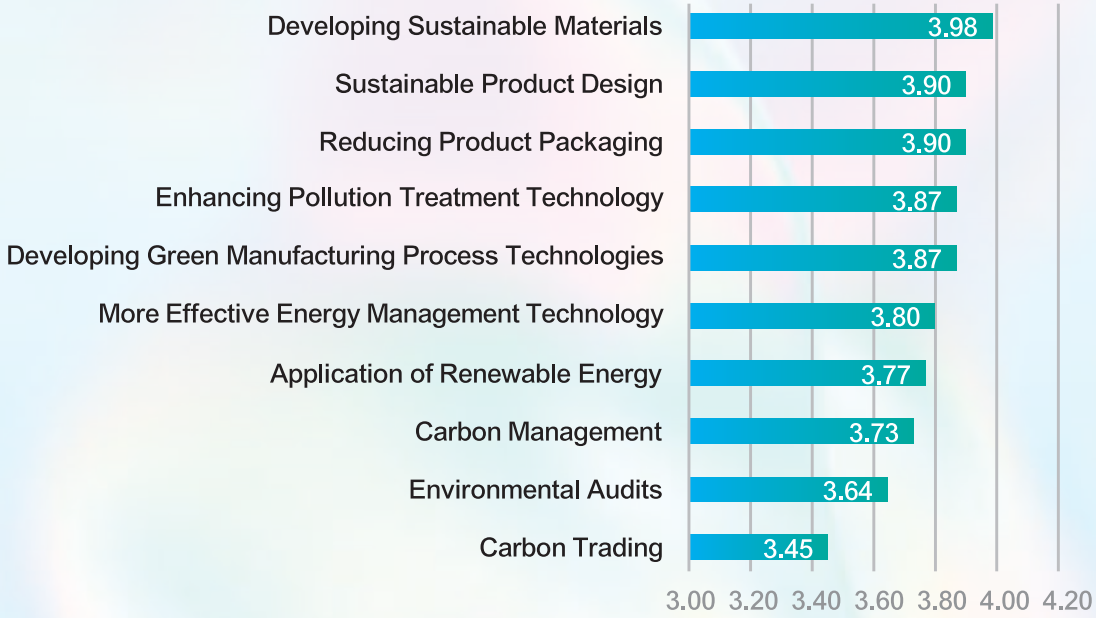
More than half (58%) of the respondents agreed that a large-scale sustainable development transition would happen in the future, among them 70% believed that the transition would take place within 10 years. Tightened requirements on environmental certification and implementation of environmental taxes are deemed the main driving forces.



Graph 7: Large-scale Sustainable Development Transition in the Future

Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD

Among a number of foreseeable initiatives that can lead the sustainable development of the fashion and textile industry and help to achieve carbon neutrality, developing sustainable materials, sustainable product design, and reducing product packaging are ranked as the top three by the respondents.



Graph 8: Actions that Help the Industry Achieve Carbon Neutrality

(1-Not helpful, 5-Very helpful)

Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD

Respondents believed most of the measures below can help the Hong Kong fashion and textile industry to achieve sustainable development. Among them, public education on sustainability, training and skill development, and green subsidies are considered as the most effective ways.

Graph 9: Effective Level of Following Support Measures

(1-Not effective; 5-Very effective)

Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD

5.6 Focuses per Business Nature

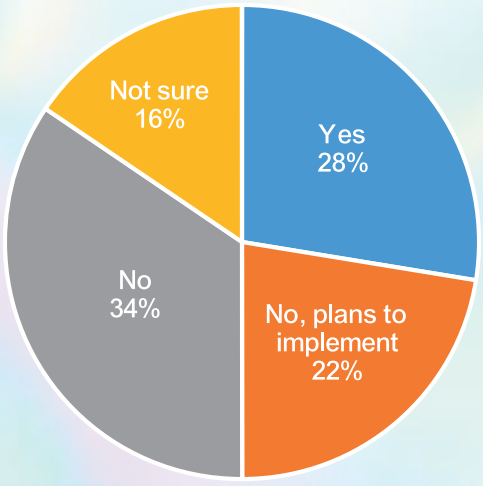
Some companies in the local fashion and textile industry produce their own (branded or non-branded) clothing materials or products, while other companies mainly source and trade other companies' clothing products. In consideration of their different business natures, their interests and concerns on sustainability and green manufacturing are categorised and highlighted below.

5.6.1 Manufacturers and Suppliers

Over 70% of the survey respondents, which are manufacturers and suppliers, are SMEs. They produce various types of products, including fabrics, woven apparel, knitwear, etc. Manufacturers and suppliers play important roles in the supply chain. Traditional factories tend to have a significant impact on the environment. Subject to their production capacity, they often need to manage large quantities of materials and require many resources to support manufacturing at their facilities (i.e., factories). In the survey, manufacturers and suppliers are asked to share their opinions regarding management systems, data collection, green manufacturing, and scenarios planning, in order to gauge manufacturers' and suppliers' current status of performance related to sustainable development and green manufacturing.

Management Approach

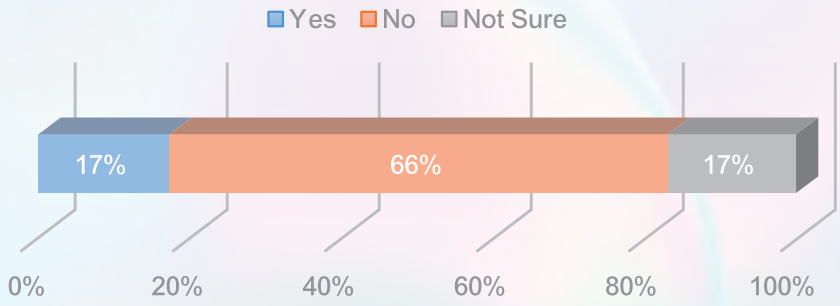
Below 30% of the survey respondents, which are manufacturers and suppliers, claimed that they have implemented an Environment, Health and Safety Management System (EHS) or an Environmental Management System (EMS), while 22% of them were in the midst of planning to implement such a management system.



Graph 10: EHS or EMS Adoption

Sustainability Research Report for
the Hong Kong Fashion and Textile Industry by ISD

Furthermore, 17% of them have established dedicated workgroups or teams, such as sustainability working groups or corporate social responsibility teams, to coordinate with different departments and to drive internal sustainability management.

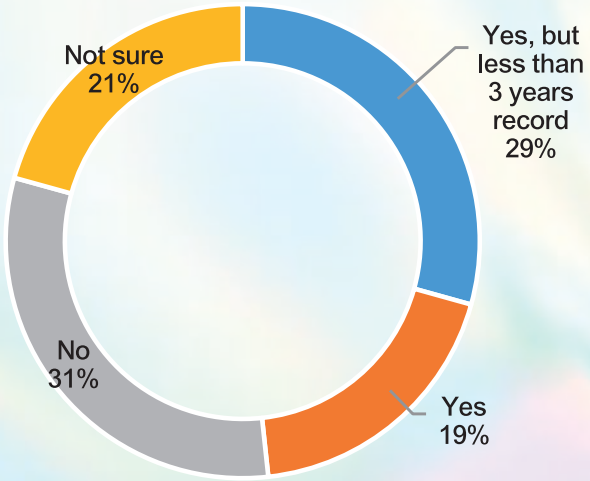


Graph 11: Committees or Working Groups Related to Sustainability

Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD

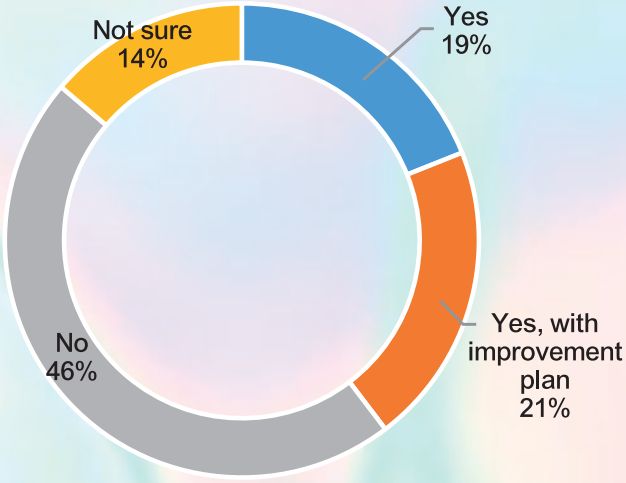
Data Management

Next, less than half (48%) of the respondents have collected environmental-related data and information. In addition, around 40% of these respondents have set environmental performance indicators for their businesses, out of which 22% have set environmental performance indicators by referring to international standards.



Graph 12: Collected Environmental Related Data and Information in Past 3 Years

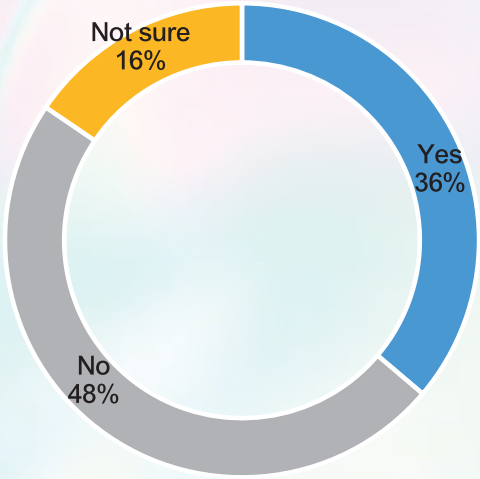
Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD



Graph 13: Set Environmental Performance Indicators in the Past 3 Years

Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD

Furthermore, over one-third (36%) of the respondents which are manufacturers and suppliers have conducted an environmental audit in the past 3 years.



Graph 14: Conducted an Environmental Audit in the Past 3 Years

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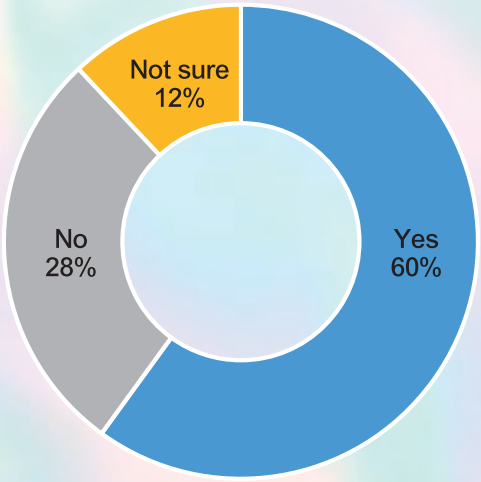
Sustainable Practice and Preparation

As previously mentioned, the selection and process on raw materials are considered as the better performed areas in Hong Kong's sustainable development. 60% of the manufacturers have adopted green materials with certified labels. However, only 21% of the companies have adopted green manufacturing technologies. The most popular green technologies are related to water such as zero discharge of wastewater, fully circular washing capability and non-water treatment.



Graph 15: Green Materials Adoption

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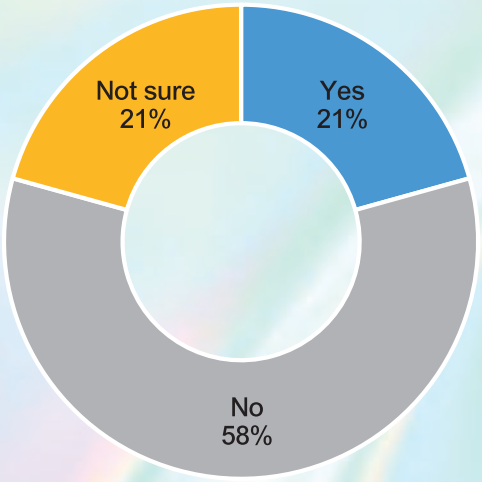

Graph 16: Green Technologies Adoption

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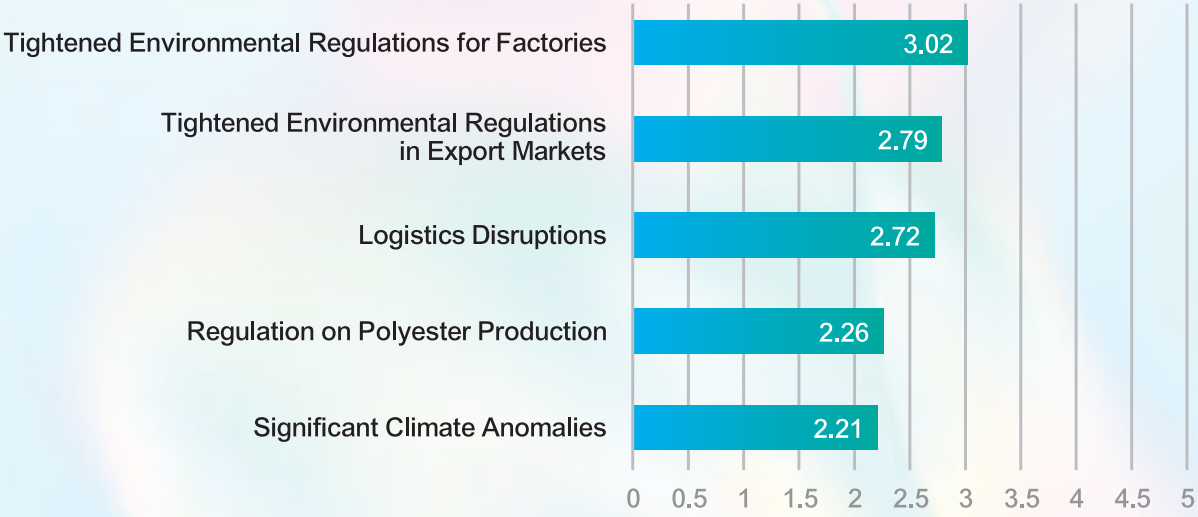
Overall, manufacturers and suppliers are not well-prepared for the sustainability transformation. Most of them are planning to cater for different scenarios. Most of the manufacturers are more ready for the tightening of environmental regulations.



Graph 17: Company's Preparedness with Respect to the Following Scenarios
(1-No plan, 3-Planing, 5-Detail plan)

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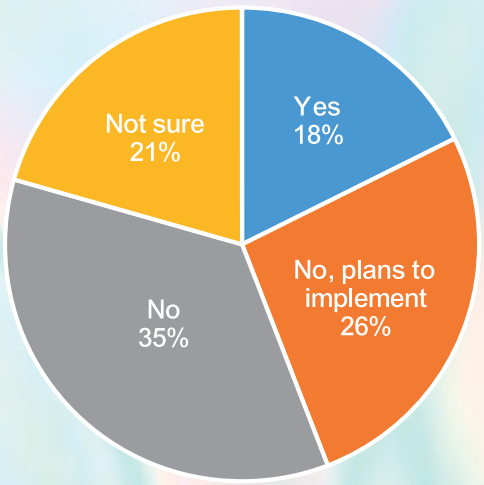
5.6.2 Brands

Among the respondents with brands, 74% of them are SMEs. With unique brands, these companies must directly face the requirements of the consumer market, address enquiries from customers, authorities, and even non-governmental organisations. Therefore, businesses with brands may be regarded as more direct channels for users and the general public to understand the industry's sustainability performance and new initiatives.

Management Approach

18% of the respondents have implemented an EHS or EMS in the past 3 years. And 26% of the respondents have plans to adopt an EHS or EMS. However, only 6% of the enterprises have established committees or working groups related to sustainability.



Graph 18: EHS or EMS Adoption

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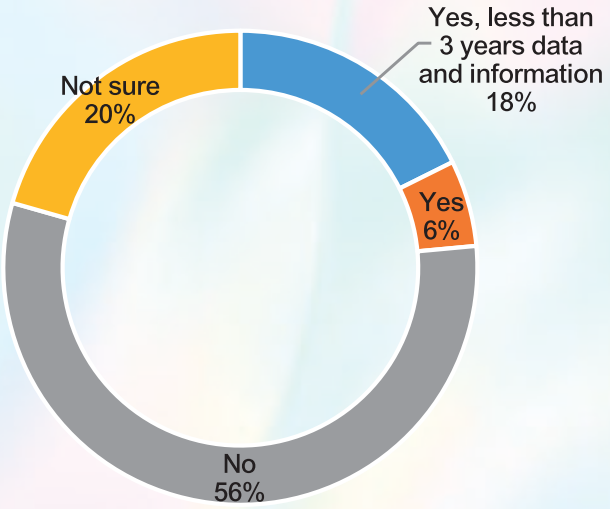
Data Management

24% of the respondents have collected environment-related data and information and set environmental performance indicators in the past 3 years. 24% of these respondents have set environmental performance indicators for their businesses, out of which 13% have set environmental performance indicators by referring to international standards.



Graph 19: Collected Environmental Related Data and Information in Past 3 Years

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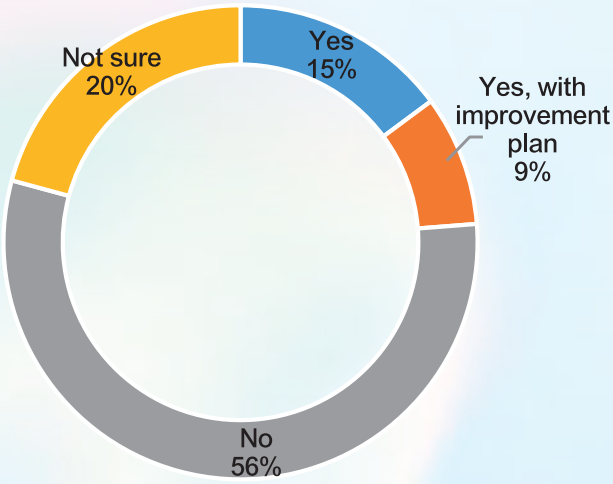

Graph 20: Set Environmental Performance Indicators in the Past 3 Years

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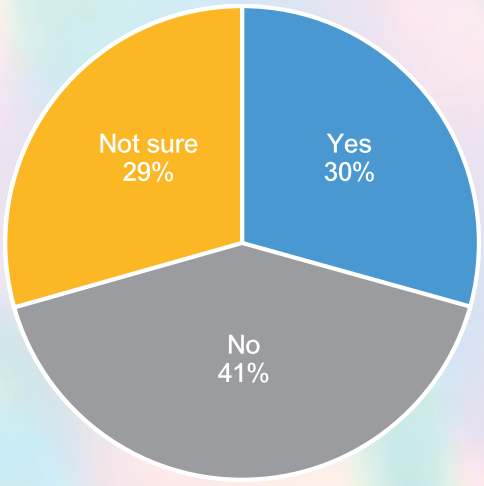
Sustainable Practice and Preparation

30% of the respondents with brands have a green procurement policy, while nearly half (47%) of the brands sell products from green production technology or green materials.



Graph 21: Green Procurement Policy

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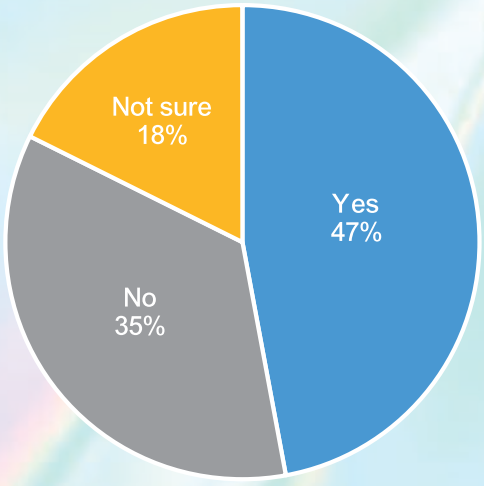

Graph 22: Sell Sustainable Products

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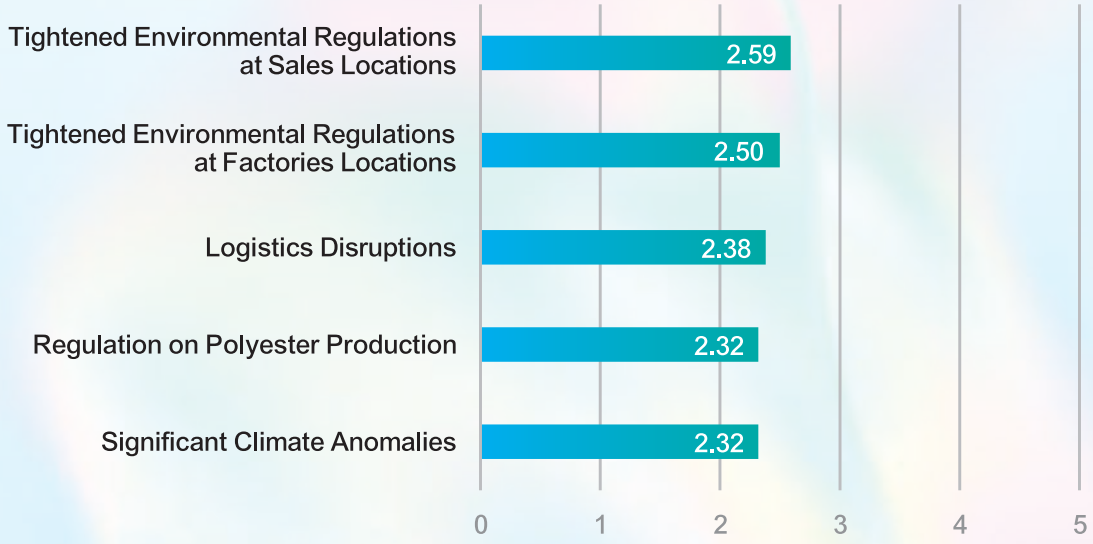
Similar as the sector of manufacturers and suppliers, enterprises with fashion brands have done more planning for the tightening of environmental regulations. But the majority of them are not well-prepared for sustainability transformation. In addition, they show their weakness on data collection as they are not subject to any disclosure requirements.



Graph 23: Company's Preparedness with Respect to the Following Scenarios
(1-No plan, 3-Planing, 5-Detail plan)

Sustainability Research Report for the Hong Kong Fashion and Textile Industry by ISD

In summary, driven by global compliance requirements and business incentives, more and more companies in the fashion and textile industry start to embark their sustainability journeys. As shown by the survey responses, the whole industry generally has been building up awareness and knowledge regarding sustainability and green manufacturing, in order to fulfil regulatory compliance, satisfy customer expectations, and prepare for future sustainability trends.

5.7 Interview Summary

To identify relevant sustainability-related issues and challenges that are common to SMEs in the fashion and textile industry, in addition to the survey, individual opinions and feedbacks were collected through a series of interviews with 35 company representatives. These representatives were invited from the SMEs that had participated in the survey. During the interviews, these representatives of SMEs shared their current focuses in sustainable development, and discussed what they regard as major opportunities or challenges in anticipation of future sustainability trends. In addition, 15 professional subject experts from relevant stakeholder groups, such as industry associations, testing and certification bodies, supply chain partners, academic and public organisations, government departments and related bodies, were also engaged to seek their industry knowledge and insights on associated matters that may impact SMEs in the industry.

Based on the consolidated opinions from the interviewees, a number of topics, as elaborated as follows, stand out for shared attention, which have covered the industry's present level of preparedness in sustainability, future trends with opportunities and challenges, as well as potential impacts to SMEs.

5.7.1 Present Status

The expert interviewees agreed that sustainable fashion and textile practices are important to reduce environmental impact. A number of sustainable fashion and textile trends are emerging, such as sustainable materials selection, green technologies transformation and textile recycling. However, though having made significant progress in controlling pollution and reducing emissions over the past decades, the fashion and textile industry still has great room for improvement in its sustainability performance in the current stage. For example, it is yet common for companies to establish sustainability performance indicators, making it challenging to track progress systematically over time. On the other hand, multiple experts have pointed out that sustainability concepts can be blended into the whole product lifecycle from raw material to recycling, and therefore, sustainable measures can also be implemented at various stages. Currently, the efforts of the industry are mainly focused on three aspects, i.e., sustainable materials, green technologies, and textile recycling.

Sustainable Materials

Sustainable raw materials attract great interest among the expert interviewees, as they may be required by or visible to buyers and consumers. However, the experts have pointed out that there are some noticeable challenges when it comes to applying sustainable materials. For example,

- Recycled fibres are generally more costly than virgin materials;
- The use of recycled fibres is usually not 100%, because most of them need to be mixed with other materials before being used to produce textiles and clothing. Also, recycled materials' performance is not as good as other materials; and
- The sources of sustainable materials are often unstable, and thus not yet regarded as resilient alternatives to virgin or traditional PET materials to support production.

In addition, according to the SME interviewees,

- Material selection is one of the most direct measures toward sustainability. However, the SME interviewees have also echoed that the price of sustainable materials is higher than traditional ones, posing practical barriers for companies to adopt more sustainable materials;
- SMEs are often not able to meet minimum order amounts as they purchase in small scales. Thus, some sustainable materials are not available to SMEs; and
- Since material selection is usually decided during the design phase, some SME interviewees of manufacturing admitted that they had very limited decision power in making the material selection.

Green Technologies

Traditional fashion and textile production used to be associated with resource consumption, pollution, and emissions. For instance, significant carbon emissions are generated through different wet processes such as dyeing, logistics, etc. Green technologies can help manufacturers to reduce such environmental impacts, some examples of which include using sustainable production processes, green technology for dyeing and printing, and emissions-reducing techniques. In addition, according to the expert interviewees,

- In reducing the environmental impact of the fashion and textile industry, new technology can play important roles and bring significant improvement;
- Digital technologies can change many aspects of business operations, and be applied to make sustainability impact. For example, a blockchain may be built to track products (completed a trial) and record carbon emissions from the value chain; and
- Different regions have different standards to impose limits on emissions, including that of chlorides, nitrates, lead, biochemical oxygen demand (BOD_5), nitrogen oxides etc. To comply with various policies and standards, pollutant treatment technology has significantly improved compared to a decade ago. Facing fast-changing green technologies, companies should keep themselves aware of the latest developments and assess their businesses applicability.

However, SMEs have some concerns,

- The SME interviewees, especially those from the manufacturing sector, have expressed many considerations in the treatment of pollutants from production; and
- SMEs have financial concerns about new applications and are unwilling to invest more since they have no self-owned factories.

Textile Recycling

As stated by the expert interviewees, waste recycling in the fashion and textile industry has been a hot topic. However, the current rate of clothing recycled is just approximately 1-2%, which means there is still much room for improvement. In this regard, the industry is facing two major challenges.

- First, mixed textile waste is hard to recycle. A waste sorting process can help solving such difficulty and increase the efficiency of recycling textile waste. In India and many other countries, projects relating to textile waste sorting are launched, where people are trained to sort textile waste by following some simple steps. So far, there are no such projects in Hong Kong.
- Second, recycled materials appear to have a relatively low market demand in Hong Kong. Some companies tried to upcycle textile waste to make recycled materials for a second use, but selling such recycled materials could be difficult at the moment.

In addition, according to the SME interviewees,

- Current product designs do not accommodate recycling.
- In Europe, recycling companies will sort and recycle yarn, and then the recycled yarn will be sold to the market for profit. However, recycling in Hong Kong is not profitable since the local demand for recycled materials is niche. In addition, the recycling industry has little support, so fewer companies will consider joining this industry.

5.7.2 Future

In response to achieving sustainable development and tackling climate change, governments worldwide have been introducing different policies, initiatives, and/or targets, e.g., carbon neutrality targets. These sustainability policies and initiatives are bringing impact to people's lifestyles and business operations. With society transforming towards a low-carbon economy in the next couple of decades, the fashion and textile industry is going to face a number of challenges and opportunities during this transition. Some challenges are due to the ever-tightening regulatory and reporting requirements, and technological transformation. Meanwhile, many opportunities are emerging, such as the development of sustainable technologies, supply of sustainable materials, and increasing market demand for sustainable products.

Challenges

The expert interviewees generally agreed that sustainable fashion and textile practices are important to reduce environmental impact. A number of sustainable fashion and textile regulations are emerging, including using sustainable materials, increasing textile recycling, and applying sustainable manufacturing. For example, a ban on the production of fibres made of by-products from processing petroleum may be established in multiple countries when it is close to 2030. Under the Mainland's 2060 carbon neutrality vision, much emphasis has been put on the traceability of raw materials, carbon footprint, and other emission measurements.

Corresponding to the ever-tightening regulations and policies, more disclosure requirements are imposed to monitor corporate governance and information transparency, allowing stakeholders to be able to track the sustainability performance of companies. To prepare for a rising bar for such compliance and disclosure requirements, large-scale companies have taken steps to collect internal data, compile reporting information, and manage their sustainability performance. As part of the supply chain, suppliers' sustainability performance is very important for downstream users and brands. Many brands have already had in place their sustainable procurement requirements and communicated these requirements to their suppliers. For example, 131 international brands have pledged to use sustainable materials by 2025, requiring their suppliers to follow suit.

Technological transformation can bring about significant impact on companies, which are undergoing tightened regulatory requirements and stricter disclosure requirements. To catch up with the trend of green technologies, a shift in mentality or an upgrade in skills is often needed. By considering environmental or social impacts, companies may apply different technologies that can bring sustainable value to users. For example, green manufacturing methods, such as applying environmentally friendly dyes, can be implemented to make a real impact to reduce chemical use and save water. Subject to the nature of green technologies, when communicating with stakeholders, companies should highlight the benefits of green technologies, as well as the products that are manufactured with such green technologies, in order to inspire more consumers to select sustainable products and support companies to go green.

Opportunities

Most interviewees believed that technological development is important to realise sustainable development. Indeed, innovative technologies are core roles in improving the industry's total performance.

On the one hand, there has been a surge in the development of sustainable technologies in recent years as businesses and governments look to find more environmentally friendly ways of operation. The fashion and textile industry has the potential to become more sustainable by using innovative technologies to reduce environmental impacts, for instance, by improving energy efficiency. For example, companies could consider installing facilities of renewable energy, such as solar or wind, to partially power manufacturing processes. With the rapid development of sustainable technologies, an increasing amount of green technology options are available for fashion and textile companies to help them achieve green commitments, at a reasonable price, and to support green manufacturing transformation.

On the other hand, material producers are exploring opportunities to produce more sustainable materials, including recycled materials. By using materials that are recycled and reused, companies are able to help reducing the number of virgin materials required to be made in the first place. Moreover, new materials with sustainable concepts are continually created with technological advancements. As a result, the supply of sustainable materials is expected to increase. With more companies using sustainable materials, the price of sustainable materials will likely decline. Companies in the fashion and textile industry can take the opportunity to step up in research and development, use innovative and sustainable fabrics for producing new products, and minimise waste to landfills by encouraging reusing, repairing, and recycling.

Moreover, there is a growing demand for sustainable and environmentally friendly products, as consumers are becoming more aware of the consequences of their actions and with the promotion of sustainability concepts. Hence, businesses which can shift to a more sustainable approach will be able to distinguish themselves from their competitors and may be able to attract more customers interested in eco-friendly products.

5.7.3 Considerations for SMEs

Based on SME interviewees' feedback, some companies understand the above challenges and opportunities of sustainable development and they are taking actions to catch the chance. However, some SMEs are still struggling to plan for their sustainable development journey, because of the lack of resources, market demand, and experience sharing.

It is evident that SMEs have limited budgets, resources and information on sustainable development. Even though sustainability is becoming increasingly important, some SME interviewees stated that they had difficulty in finding relevant guidelines or experts to share knowledge with them. Meanwhile, financial constraints often make it difficult for SMEs, especially producers, to invest in technology or equipment, such as pollution control, wastewater treatment, renewable energy, etc., to improve their sustainability performance. Some interviewees suggested to have supply chain partners work together and share resources for sustainability improvement. However, currently only a small portion of buyers (brands) provide technological (funding) support to their suppliers.

In the market, sustainable products are often priced higher than their traditional counterparts, due to the higher costs of sustainable materials. However, consumers may not know these facts. In order to promote sustainable development, effective communication is required to bridge such information gaps and also to enhance public awareness.

Sharing is a meaningful way to increase understanding and reduce trial and error costs. It can be helpful in learning new sustainability trends, studying good practices, and finding the kick-off points in sustainable development. To provide practical industrial experience as reference for SMEs, several local pioneer SMEs were invited to share their companies' sustainability commitments and actions. Their good practices are elaborated in the format of case studies in the next chapter.

Chapter 6

Sharing of SMEs in the Fashion and Textile Industry

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Sharing of SMEs in the Fashion and Textile Industry

As important players in global extensive supply chain, many Hong Kong SMEs in the fashion and textile industry have started catching up with the international sustainability trend by implementing their own sustainability measures. In this chapter, ten local companies, as the representatives of SMEs, shared their stories of sustainable development. These shared cases, based on some interview feedbacks from the study, highlight the importance of people and the environment, and showcase SMEs' ability to make big differences through building awareness, leadership, engagement, and much more. These cases cover a range of topics relating to manufacturing, branding, and retail, which reflect the value of sustainability to people and the environment. The ten cases are grouped into four categories, namely embracing sustainability concepts (cases 1-3), sustainable production (cases 4-5), design for sustainability (cases 6-8), and partner synergy (cases 9-10).

1. atelierYVF - Embracing Sustainability in Every Phase of Operation
2. Novetex Textiles Limited - Spearhead for a Circular Economy
3. Tak Hing Textile Industries Co. - Promoting Sustainability from Raw Materials to Finishing
4. V Visionary Limited - Sustainability Integrated in the Core Value
5. Legend Swimwear Factory Limited - Frontier of Sustainable Manufacturing in Wastewater Treatment & Water Management
6. Prosperity Textile (HK) Limited - A Multi-facet Approach of Applying Technology for Sustainability
7. American Phil Textiles Ltd - Sustainable Measures from Design to Production
8. Antonhill Company Limited - Sustainable Production and Waste Management
9. Co-operatiff Limited - Catching Up the Sustainability Trend
10. iSAACMA (HK) Co. Ltd. - Addressing Emerging Business and Sustainability Needs

We acknowledge the above companies (SMEs) for their participation in the study and sharing the cases of their experiences and sustainability practices in this chapter.

6.1 Embracing Sustainability Concepts

Case 1: atelierYVF

- Embracing Sustainability in Every Phase of Operation

atelierYVF creates self-designed bridalwear, which is branded with a "slow fashion" commitment that combines innovation and historic savoir-faire to fulfil customer expectations. Alexandre and Yasmina, the founders, believe in the long-term benefits of sustainability and the importance of improving awareness for sustainability. Positioning itself as an ethical brand, atelierYVF holds sustainability in a strategic position. In this regard, atelierYVF blends sustainability concepts into the whole value chain from raw materials to after-sale service, and has implemented sustainable, measurable actions in three aspects including design and production, after-sales service, and supply chain management.

Different to traditional sales practices in the industry, atelierYVF adopts an exclusive "Made-to-Order" approach, in which a dress is designed and/or produced only after receiving a client order. By doing so, there are no pre-made and stored dresses, and none has to be sold at a discount or destroyed at the end of the year. To extend the product lifetime, a design concept of "Continual Collection" is also applied to all of atelierYVF's products. It refers to that designers will conduct extensive research to make sure the design can meet the client's expected style and aesthetics over the course of multiple years, as well as create a long-product life cycle by changing different elements as needed, covering sleeve lengths, neckline styles, illusion details, shapewear lining, and more. Furthermore, 3D modelling technology is used to reduce waste in the dress collection design and production process. After confirming the design, dresses including veils and accessories are well produced and paired. During the production process, tailors fully utilise materials by ordering appropriate portion of the materials from local, sustainable and/or artisanal suppliers.

When it comes to after-sales services, atelierYVF promotes recycling concepts to its clients and aims to achieve 100% recyclability for its dresses. Hence, post-wedding transformation services and recycling services are offered to customers. Post-wedding transformation service helps to convert a dress to another piece that can be worn again for different occasions after recutting and dying. atelierYVF's recycling practice is built on the collaboration of its own operation and supply chain management. atelierYVF not only offers to transform all its sold dresses and accessories, but also collects "dead stock" unused fabric from other luxury brands for reuse. To engage its suppliers to join hands, atelierYVF conducts regular site visits to fabric manufacturing plants and selects suppliers based on their sustainability commitment.

Sustainability has always been part of atelierYVF's culture, and been integrated into daily operations through different phases. Meanwhile, atelierYVF demonstrates a viable case of a local SME to embrace sustainability as its business strategy and develop a unique position in the market.

Case 2: Novetex Textiles Limited

- Spearhead for a Circular Economy

Novetex Textiles Limited ("Novetex") is a Hong Kong-based company, which has production facilities in Hong Kong and the Mainland. Novetex upcycles textile waste into new yarn. Recycled inputs are collected and broken down from fabrics into 100% recycled fibres in its Hong Kong factory, then recycled fibres will be blended with virgin material in its Zhuhai facilities to produce yarn for various products and garments. In addition, Novetex produces premium quality yarns using organic cotton and other materials responsibly sourced in its Zhuhai facilities. Novetex strives to create customised sustainable initiatives with retail partners to work towards a circular economy.

A circular economy is a new production and consumption model which is good for businesses, people, and the environment. It is embedded with three major principles, including no waste and pollution, material circulating, and regenerating nature. At Novetex, a textile upcycling operation named "The Billie System" has been implemented to advance the production process, applying the principles of circular economy. Having been recognised by numerous innovation awards globally, the Billie System was developed by Novetex as an innovative solution to recycle surplus inventory, unused materials, or other textile waste to produce yarns. Highly automated, the system consists of six main processes, including ozone sanitisation, hardware removal, colour sorting, fibre processing, UV light sanitisation, and sliver processing. Compared to most existing yarn recycling processes that require a significant volume of water and chemicals, the Billie System requires no water and creates no chemical waste throughout the processes, in response to the circular economy principles. Apart from the system, Novetex has invested in renewable energy at its Zhuhai factories. The generated renewable energy approximates 40-50% of the Zhuhai factories' total energy consumption. In addition, Novetex has been offering a wide range of sustainable yarn collections that include organic materials since 10 years ago. For instance, organic cotton is used to produce its yarn collections with organic certification standards.

Recognising the importance of awareness and partnership for sustainable development, Novetex has joined hands with different organisations to provide upcycling solutions. For instance, to further promote the use of upcycled fibres, a design collection which demonstrates potentials of applying recycled yarns to create fashionable clothes and accessories, has been displayed at Novetex's online shop.

Novetex strives to continue supporting sustainability and positions itself for a journey towards a circular economy. Through this journey, Novetex values the supports from its stakeholders, including government policies and initiatives, for their support is important in promoting sustainable development.

Case 3: Tak Hing Textile Industries Co.

- Promoting Sustainability from Raw Materials to Finishing

Tak Hing Textile Industries Co. ("Tak Hing") manufactures a wide range of fabrics with various dyeing and finishing techniques, including yarn dyeing, piece dyeing, etc. Tak Hing has observed in recent years that its customers become more and more aware of sustainability and environmental issues. In view of this increasing interest in the market, Tak Hing has implemented various sustainable measures, ranging from the use of sustainable raw materials, the adoption of certification, the use of energy efficient machines in fabric weaving, to dyeing and sewage management.

With an increased demand on green products, Tak Hing has been using natural fibres in its products, such as organic cotton, bamboo, and wood (e.g., TENCEL®). Compared to synthetic fibres, natural fibres are biodegradable and can be recycled readily with minimal impact to the environment. To inform customers that organic fibres have been used in its products and provide credible assurance, Tak Hing certified its products with the Global Organic Textile Standard (GOTS), a leading international standard for organic textiles and fibres.

Besides, Tak Hing has been adopting sustainable practices in the fabric weaving process. Energy efficient weaving machines have been used in fabric production, which can reduce energy consumption in fabric weaving. Meanwhile, weaving machines will be regularly replaced by more updated one with lower power consumption. The automated weaving machines can also greatly improve production efficiency.

Furthermore, textile dyeing and finishing are two processes in the fashion and textile industry where wastewater discharge can contain a significant amount of chemicals. Aiming to minimise potential hazards to people and the environment, Tak Hing has taken measures in terms of dyestuffs and plant sewage management. Tak Hing imposes strict requirements on its dyeing and finishing plant to ensure effluent discharges comply with international or national standards. Furthermore, Tak Hing is also planning to implement measures to lower the water consumption of its finishing process.

Owing to the high awareness of sustainability, customers are putting more attention towards green supply chain. It is important for the fashion and textile industry to embrace sustainability in every stage of the manufacturing process. In this regard, Tak Hing has implemented different sustainable measures in its supply chain, starting from raw materials, fabric weaving, to dyeing and finishing. It is one of the excellent examples that others SMEs should learn from.

6.2 Sustainability Production

Case 4: V Visionary Limited

- Sustainability Integrated in the Core Value

V Visionary Limited ("V Visionary") is a fashion design studio that designs and customises sustainable and ethical products. Guided by the principles of Sustainable, Innovative and Collaborative, V Visionary targets to work with fashion and apparel stakeholders that value sustainability. Vickie, the Founder and Creative Director of V Visionary, believes that sustainable initiatives play an important role for a better environment in the world. To tie up with the corporate's commitment on "Environmental, Social and Corporate Governance" (ESG) and "Sustainable Development Goals" (SDGs), V Visionary provides a range of solutions, from conceptual design, materials, to fashion creation, with the integration of sustainable elements.

In response to customers' requirements and market demand, V Visionary mainly purchases and recommend its clients to use green fabrics that are certified with European Union standards. In 2019, the Founder established the award-winning brand "V VISSI:revisit", which focuses on collecting and using recycled fabrics from waste recycling companies. Meanwhile, the brand has used biodegradable ink in digital printing, which can reduce the use of chemicals and the associated impact to the environment.

In addition, the Founder has sought for the funding support from the Social Innovation and Entrepreneurship Development Fund (SIE Fund), HKSAR Government, to implement a "Look Cool Do Good" programme. The programme offered training workshops to lower-income women on how to re-design and upcycle used clothes, so as to unleash their talent, contribute to waste reduction, and co-create high quality "made in Hong Kong" fashion products. More workshops were also organised for tertiary students on social innovation and environmental design.

With the increased customers' awareness on sustainability, more sustainable products are appearing in the market. However, the production process of sustainable products involves the use of quality raw materials that are more expensive, as well as higher manufacturing costs due to more complex processing techniques. As the cost for sustainable products is higher than that of traditional products, customers' acceptance of sustainable products is relatively low. Nevertheless, amid the global waves of sustainability, V Visionary, being one of the pioneers that help in pushing this green trend along the supply chain, strives to integrate sustainability into the core value of the brand.

Case 5: Legend Swimwear Factory Limited

- Frontier of Sustainable Manufacturing in Wastewater Treatment & Water Management

Legend Swimwear Factory Limited ("Legend") provides a full suite of swimwear solutions to world famous brands and retailers. Legend has manufacturing operations in the Mainland and Vietnam and has extensive experience in swimwear product development, fashion-forward design, virtual 3D sampling, zero wastewater discharge fabric printing, and sustainable manufacturing advisory. Since the initial stage of the company's sustainability journey, Legend's Founder Eric has shown a strong commitment to sustainability, especially in water stewardship. Water stewardship requires a dual-pronged approach of water conservation and zero wastewater discharge across its operations.

For water conservation, Legend installed an open width-type washing machine for saving water and energy in its printed fabric washing process in 2018. The washing machine upgrade resulted in a yearly saving of over 130,000 tonnes of water, 320,000 kWh of energy, and 3,000 tonnes of steam.

For zero wastewater discharge, Legend has made great and continual effort for many years on wastewater treatment to ensure that its wastewater discharged from the fabric printing washing process fully complies with all national and local requirements. In order to further minimise the generation of wastewater, Legend has taken a more proactive approach to install a Reverse Osmosis (RO) and Catalytic Wet Air Oxidation (CWAO) integrated system to reuse and recycle 100% of the treated wastewater from its fabric printing process in 2022. RO, a cutting-edge technology for advanced water treatment, features a filtration capability to separate particles larger than 0.0001μm and can hence achieve nearly complete removal of all insoluble particles and soluble ions. The treated water from RO can be directly used by the production lines. These two flagship water projects have saved over 100,000 tonnes of water per year whilst reducing the negative impact of wastewater on the rivers of the towns where it operates to zero.

For these two respective water projects, Legend has applied for funding and advisory support under the Cleaner Production Partnership Programme launched by the Government. The programme aims to encourage and facilitate Hong Kong-owned factories in Guangdong Province to adopt cleaner production technologies and practices. Through participating in this programme, Legend has further demonstrated their commitment to sustainable manufacturing and enhanced their capacity to making positive impact to the local environment.

6.3 Design for Sustainability

Case 6: Prosperity Textile (HK) Limited

- A Multi-facet Approach of Applying Technology for Sustainability

Prosperity Textile (HK) Limited ("Prosperity Textile") is a fashion denim brand. Having its headquarters located in Hong Kong, Prosperity Textile has manufacturing facilities in the Mainland and North Vietnam. Over the years, Prosperity Textile has been committed to manufacturing in a sustainable way that aims to fulfil the needs of the current generation without compromising the needs of future generations. Prosperity Textile has placed great effort to technology development to strive for sustainability and green manufacturing, by focusing on four main sustainability areas, including carbon, water, waste, and hazardous materials management.

To reduce carbon footprint, Prosperity Textile started to apply renewable energy and installed a solar-panel system on its rooftop in 2016. The solar panels can generate about 190,000 kWh of electricity annually, and thus cut emissions by 140 tonnes of CO_2 equivalent. Further, Prosperity Textile also includes carbon trading as a measure in its carbon reduction plan.

To save water resource, the company has endorsed comprehensive water management in place. On the one hand, Prosperity Textile has implemented wastewater treatment and waterless finishes in its production. On the other hand, it also focuses on reusing and recycling wastewater by applying innovative technology like nanotechnology.

Prosperity Textile is dedicated to reducing waste from the source and using recycled raw materials for its products. For example, recycled fibres and sustainable fibres are sourced from reputable brands with international certification, such as Lenzing (Tencel®, Modal®, Refibra®), LYCRA (Coolmax® EcoMade), etc.

Last but not least, hazardous materials management is essential to both the planet and people. Prosperity Textile cares about the health and safety of its employees and customers, so that it has always strongly emphasised hazardous materials management. In order to limit chemical usage to reduce impact to the environment, Prosperity Textile has introduced the solution of "Sweet Indigo", which returns denim dyeing to its roots while also minimising the use of harmful hydrosulphites.

Prosperity Textile takes the initiative of adopting a multi-facet approach focusing on technology development to strive for sustainable development. Technology can not only provide effective tools to address some issues of sustainability, but also helps Prosperity Textile to gain competitiveness for its business in the market.

Case 7: American Phil Textiles Ltd

- Sustainable Measures from Design to Production

American Phil Textiles Ltd ("APTL") is an Original Design Manufacturer (ODM) specialising in underwear, loungewear, and athleisure garments. APTL is committed to sustainable development as one of its core values. When it comes to its operations, APTL places strong emphasis on product design and implementation of an eco-friendly and intelligent production line.

To promote sustainable fashion and textile, APTL regards product design and use of green materials in production and packaging as high priority areas. In response to the increasing customers' demand for sustainable products, APTL has begun to use recycled fabrics and organic cotton fabrics in their products. To enhance the utilisation of these materials, as well as to minimise fabric wastage, APTL applies an integrated planning approach to group the material demands and fabric cutting works for different customer orders. For product packaging, FSC-certified paper and recycled plastics are used, in an aim to minimise the environmental impact of packaging.

Furthermore, APTL aims to reduce energy consumption in production by adopting new technologies of automation and digitalisation. For instance, APTL is using highly efficient servo motors in sewing machines, which can reduce electricity consumption by 15% - 20%. Meanwhile, APTL's engineering team is also developing an automated machine for waistband attachment. Compared with the traditional manual process of inserting waistbands into apparels, the application of the automated machine will almost double the production efficiency. With the same operation time, using automated machine can produce a larger quantity of products than using the traditional manual process, and thus reducing electricity consumption.

APTL strives to integrate sustainability in its operations, from design to production, and to bring value to its customers. Besides internal investment, support from stakeholders is important to help companies, especially SMEs, to promote and implement more sustainable measures for the fashion and textile industry.

Case 8: Antonhill Company Limited

- Sustainable Production and Waste Management

Antonhill Company Limited ("Antonhill") designs and manufactures corporate uniforms for a wide range of sectors, such as hotels, banks, medical institutes, theme parks and casinos, catering groups, and public institutions. In response to the increased awareness on sustainability, Antonhill has placed great attention to implementing sustainable measures.

Striving to ensure the best quality in the manufacturing process and the final products, Antonhill has used environmentally friendly materials long time ago to reduce environmental pollution. Examples include natural fibres, recycled fibres and bio-degradable fibres. Recently, Antonhill has been certified Global Organic Textile Standard (GOTS).

Moreover, with the focus on design and craftsmanship, Antonhill's uniforms are more comfortable and having a much longer lifetime. In order to extend the product life cycle, Antonhill's uniforms are designed with more seams for easy modification. Uniform wearing guidelines will also be provided to clients so that they can use and wash the uniforms properly.

Regarding to waste management, Antonhill has used advanced automatic pattern and marker system at its production plant located in Dongguan to maximise fabric consumption and minimise wastage. Antonhill has also adopted a waste recycling programme at the Dongguan production plant more than ten years ago, in which a service provider will collect waste papers and fabrics generated from cutting room and production lines for recycling instead of disposing of them to reduce the burden on landfill. To extend the product life cycle, Antonhill launched the surplus uniform reusing programme. Under this programme, surplus uniforms without clients' logo will be donated for charity or sold to staff at a nominal price.

In view of the importance of sustainable development, Antonhill has implemented sustainable practices starting with material selection, design, craftsmanship, and waste management. To further promote waste management, Antonhill believes that non-monetary recognition like 'Certificate of Sustainable Development Enterprise' targeting the fashion and textile industry by government can provide incentives for companies to conduct waste management.

6.4 Partner Synergy

Case 9: Co-operatiff Limited

- Catching Up the Sustainability Trend

Co-operatiff Limited ("Co-operatiff") is a local fashion enterprise established with its own brand named phenotypsetter ("the brand"). The brand has made its presence in retail, online sale, and wholesale, both in Hong Kong and overseas. The brand started in Hong Kong with gender-neutral ready-to-wear. Led by its founder, Jane, who has rich experience in the fashion industry, the brand has taken the initiative to implementing a sustainable method of producing clothing and advocating a circular economy.

Sustainability implementation is one of the corporate strategies for the brand. And the core of its sustainability strategies is waste management. In the course of fashion production, wastes are often generated when manufacturing clothing, including wasted materials and surplus cloths. To tackle the waste problem, the brand has implemented a Make-to-Order sales model. Instead of creating full-size designs, the brand will provide customers with design samples first, and if the customers are interested, customisation services are available to ensure best fitting. In this way, the brand can lower the inventory costs of clothing production and reduce waste generation.

Apart from production, the brand also believes that extending the life cycle of clothes is a way to reduce textile waste generation. Durability problem and out of fashion are two main reasons that make clothes become textiles waste in the fashion industry. Therefore, the brand's design team will consider different elements to design more durable products to lengthen the life cycle of clothes. In addition, the brand provides dress collocation advisory and minor redesign services to help clients catch up with the latest fashion trend and extend the life cycle of clothes.

Beside reducing waste, the brand hopes to move toward sustainability with its customers. The brand has organised upcycling workshops for its customers to revitalise used clothes. For example, the brand held a workshop on changing used jeans into bags and aprons, to promote upcycling and sustainability to the participants.

The brand is doing its best to catch up with this trend and deliver the concept of sustainability to its customer. It also pays attention to green materials and technology in the fashion and textiles industry, and is looking forward to a mature green materials market with mature production technology.

Case 10: iSAACMA (HK) Co. Ltd.

- Addressing Emerging Business and Sustainability Needs

Rooted in the material supply industry and primarily serving the leather sector, iSAACMA (HK) Co. Ltd. ("iMA") has been developing sustainable and upcycled materials for the fashion and textile industry in recent years. Leveraging its rich industry experience and extensive network, iMA has proactively formed partnership with upstream suppliers to address the sustainability challenges of its clients in a proactive way.

Inspired by the forerunning production practices in Switzerland, where recycled materials can be used to form garment content, iMA decided to partner with Tide Ocean SA, a company that reuses ocean-bound plastic to produce raw materials for sustainable products. For example, Tide Ocean SA's award-winning material, #tide ocean material®, is made of 100% upcycled plastic. Through the collaboration with Tide Ocean SA, the upcycled granules were processed into yarn, fabrics or other forms of raw materials for fashion and textile applications. The material can be used to produce a wide range of products, including handbags, shoes, swimwear and accessories. The products are certified by the Global Recycled Standard and Ocean Bound Plastic (OBP) Certification Programme. In addition, iMA has also applied for the OEKO-TEX® Standard 100 certification to testify to their customers that its products are safe for human health.

Apart from supplying raw materials, iMA also organised the save one billion bottles pledge with Tide Ocean SA for clients to demonstrate their joint commitment to sustainability publicly. These solutions and initiatives are well received by clients from the US and Europe.

Inspired by overseas practices, plastic can be upcycled into different types of raw materials for use in the fashion and textile industry. While plastic waste upcycling and sustainable material sourcing are still at its germinal stage in Hong Kong. iMA detects the opportunity and introduced overseas innovative solutions to its home. With the growing awareness of sustainable fashion, iMA is exploring to enhance its solutions to fit the local context.

Chapter 7

Recommendations and Conclusions

Chapter 7

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During this study, sustainability trends and good practices related to the fashion and textile industry were studied in both global and local contexts, through desktop research, an electronic questionnaire survey among various stakeholders including textile manufacturers, exporters, buyers, suppliers, academia, industry associations, testing and certification bodies, as well as a series of interviews with industry experts and local SMEs. The previous chapters provide a detailed account of the findings and feedbacks collected, in order to identify topics of relevance, room for improvement, and prioritise resources towards the most interested material areas. As many stakeholders pointed out, in the coming decade, sustainability is likely to impact the fashion and textile industry and bring transition to businesses in a great scale. To assist local companies, especially SMEs, in preparing for such potential transition, some most relevant areas and recommendations are therefore to be discussed in this chapter.

7.1 Recommendations in Top Areas for Improvement

This section mainly focuses on recommendations in the areas most in need of performance improvement in sustainability, as selected by most respondents in the survey, namely Handling of Surplus Products, Design and Manufacturing, and Selection of Raw Materials.

7.1.1 Handling of Surplus Products

To handle surplus products or even reduce the production of surplus products, local fashion and textile companies may embrace the concepts of circular economy and resource efficiency in their operations. Meanwhile, the adoption of upcycling is also a new trend for tackling this issue.

In order to reduce surplus products, companies may adopt efficient production planning methods or new technologies such as digitalisation. Data analytics can help companies to better understand market demands, make forecasts, and minimise surplus or waste. Technologies of digitalisation can also enable customisation fashion design through user-friendly interfaces. In addition, by using big data, remote body measuring technology, artificial intelligence, and blockchain technology, etc., a customer-oriented platform can be developed for mass customisation orders. Through such an intelligent platform, customers will be able to have their clothes tailor-made worldwide anytime in response to a rapid changing consumer landscape. Hence, this kind of platform may provide companies, including SMEs, a more cost-effective business model.

Recycled textiles have been attracting attention, but industry representatives expressed their concerns on the costs, quality, stability, and availability of recycled textiles. Adoption of upcycling technology (e.g., The Billie System, G2G System) may be a solution for enhancing the feasibility and effectiveness of using recycled textiles.

Useful Resources:

1. The Billie System and G2G System can combine new and existing technologies to form innovative recycling systems, which do not consume water or produce chemical waste. The Billie System may be applied as a large-scale system for recycled fibres in the factory while G2G may be set up as a mini-scale production line in retail for recycling post-consumer garment to produce new garments (e.g., t-shirts).
   - The Billie System, Novetex Textiles Limited, https://billieupcycling.com/
   - G2G, H&M Foundation, HKRITA and Novetex Textiles Limited, https://www.hkrita.com/en/garment2garment

7.1.2 Design and Manufacturing

With reference to the good practices in Chapter 6, fashion designers may consider reviewing their business models, to include elements such as re-designing disposed products to sell at lower prices, developing multi-purposed products, and selecting durable and sustainable materials. On the other hand, many companies endeavour to achieve green manufacturing by introducing new technologies into production and implementing a compliance control and certification system.

The application of new technologies on design and manufacturing enhances process efficiency and enables prompt responses to customers' needs. Digitalised design and automated manufacturing enable virtual or 3D design and modelling, real-time monitoring, responsive supply chain management, which are examples of new technologies increasingly attracting the industry's attention. By exploring innovative technologies, companies, especially SMEs, are encouraged to work with their supply chain partners and exchange experience with industry peers about latest technological advancements.

Useful Resources:

1. To support the application of new technology, HKRITA has offered a number of technical solutions regarding to Industry 4.0, social benefits and sustainability for the industry to explore.
   - https://www.hkrita.com/en/our-innovation-tech/projects

2. HKPC also has provided one-stop technical solution for the fashion and garment manufacturing, from materials development, product design, processing to final testing.
   - https://www.hkpc.org/en/our-services/advanced-manufacturing-technology/fashion-garment-technology/fashion-garment-tech

In the long run, there is a trend that environmental regulations will be further tightened to promote sustainable development. In particular, pollution control has been a concerned area of the industry. Water management and wastewater treatment are regarded as high priority. Waterless finishes / fabric printing, recycling or reusing of treated wastewater are examples for waste management approaches. Besides advanced wastewater treatment technologies, hazardous material management or electronic tools can also provide solutions for companies to control pollution at the source. To obtain technical support on the pollution control and green manufacture, companies are encouraged to explore the following programmes.

Useful Resources:

1. Environmental Protection Department (EPD) has launched the Cleaner Production Partnership Programme (CPPP) to facilitate factories' adoption of cleaner production technologies and practices, thereby contributing to improving the environment.
   - https://www.cleanerproduction.hk/

2. Low Carbon Manufacturing Programme (LCMP) by World Wildlife Fund (WWF) aims to cut carbon emissions generated by manufacturing facilities and develop environmental and social governance for manufacturers. By providing manufacturers with a carbon accounting and labelling system, LCMP helps to measure their effectiveness in reducing carbon emissions and share best practices in greenhouse gas management.
   - https://www.wwf.org.hk/en/cities/eco/manufacturing/

To implement green manufacturing, the management and operation teams of a factory are encouraged to adopt sustainable concepts and develop a management system to help plan, execute, monitor, and enhance performance related to green manufacturing. Regardless of the size of a company, a systematic mechanism for continuous improvement, such as ISO 14001 for environmental management systems, ISO 50001 for energy management systems, and ISO 45001 occupational health and safety, are highly recommended.

7.1.3 Selection of Raw Materials

There are many self-proclaimed sustainable materials in the market, which often leave buyers wonder if the claims are authentic. This challenge brings out the importance of certification or labelling for supply chain communication. Widely-accepted certificates and labels allow buyers to recognise associated sustainability product features or corporate performance. For example, if a company needs to source sustainable materials, some international certificates and labels can provide good reference, such as OCS, GOTS for organic materials; RCS, GRS for recycled materials; Bluesign, OEKO-TEX for materials' safety.

Technical guidelines published by authorities or industry organisations are also important references for materials selection. For example, EPD has developed the Green Specifications with a recommended List of Green Procurement Items, which includes a product category of "Textile Materials and Garment". The list may also assist companies in identifying other green materials for business operations. In addition, some simplified specifications are available for small-amount purchases, which may be useful for SMEs. Besides local guidelines, companies are encouraged to increase awareness of the sustainability-related procurement guidelines released by authorities or industry organisations in the Mainland and major overseas markets.

Useful Resources:

1. Local Guideline
   - Green Procurement Information Portal, EPD, www.epd.gov.hk/green_procurement

2. Mainland and Overseas Guidelines
   - China Green Purchasing Network, CGPN, http://www.cgpn.org/
   - International Green Purchasing Network, IGPN, http://www.igpn.org/
   - Global Ecolabelling Network, GEN, https://globalecolabelling.net/

7.2 Industry-wide Improvement Approaches

This section proposes industry-wide improvement approaches, which include Training, Skill Development and Technical Advancement, Sustainability Subsidies and Incentives, and Public Education on Sustainability. These approaches are suggested with reference to a number of material sustainability topics of the industry, including carbon neutrality, climate change, green supply chain, new economic models, policy and regulation, environmentally friendly dyes, pollutant treatment, and sustainable or organic materials. In particular, to combat climate change and achieve carbon neutrality, many large fashion and textile companies have started implementing sustainable measures or low carbon operations to mitigate their carbon emissions. With many countries and regions introducing carbon tax or trading platforms, carbon-related assessment and valuation will likely draw more and more attention from the industry. While Hong Kong is pursuing green finance and sustainability, fashion and textiles companies, including SMEs, need to develop knowledge about latest market trends and buyers' requirements, as well as upgrade skills to be able to apply sustainability concepts and technologies in their own operations. As a major hub for the international fashion market, Hong Kong can play a key role to help mitigate the industry's carbon emissions on a global scale.

7.2.1 Training, Skill Development and Technical Advancement

As discussed in Chapter 5, industry representatives expressed their needs for sources of reference on practical skills and technical solutions during the engagement activities. To help build competence of the industry, companies, government departments, industry organisations and NGO may arrange various workshops, seminars, sharing sessions or symposiums to promote sustainability initiatives, provide technical and practical advice, and give updates on the latest policy and guidelines. To subsidise local companies to train their staff in advanced technologies, the government has provided several funding programmes for the industry. Local companies are welcome to visit the website of the Innovation and Technology Fund for more details.

To cultivate future fashion designers with increased awareness on sustainability, academic institutions have also stepped up to provide technical trainings on sustainable materials, processing technology, green manufacturing, etc. For example, stakeholders of the industry can cooperate with the academia to design training programmes that would meet their needs in green manufacture technology.

Useful Resources:

1. Customised Training Programme in the School of Fashion and Textiles, The Hong Kong Polytechnic University, https://www.polyu.edu.hk/sft/industry-support/customised-training-programme/

2. Courses and trainings in the HKPC Academy, https://www.hkpcacademy.org/

3. Programmes in the Clothing Industry Training Authority, https://www.cita.org.hk/

4. Events in the Sustainable Fashion Business Consortium (SFBC), http://www.sfbc.org.hk/

Meanwhile, industry organisations, the government and NGOs are making effort towards our shared goal of achieving sustainability in the industry by launching various programmes. For instance, LCMP is a good example that supports the industry in terms of low carbon manufacture.

In order to facilitate the sustainability transition and develop roadmaps for carbon neutrality and climate actions, companies are recommended to perform self-assessment or engage third-party consultancy, to better understand their current status and to prioritise their areas of sustainability efforts. To take a small step first, SMEs may use various free online assessment tools to gain an understanding of their current sustainability performance.

Useful Resources:

1. Government
   - Carbon Calculators, Electrical and Mechanical Services Department (EMSD) and Environmental Protection Department (EPD), https://www.climateready.gov.hk/education_centre.php?section=carbon_calculator

2. Academic
   - SME Carbon Audit Toolkit, The University of Hong Kong and City University of Hong Kong, https://www.cityu.edu.hk/aerc/sme/
   - Green Bill of Materials (G-BOM), The Hong Kong Polytechnic University, https://www.polyu.edu.hk/ise/ecodesign/gbom_analyzer.html

3. Utility Company
   - HKE Carbon Calculator, Hong Kong Electric Company, https://www.hkelectric.com/en/customer-services/carbon-calculator

Furthermore, the industry is recommended to join hands to develop some platforms for different stakeholders to share latest policies and guidelines, best practices, innovative technologies, and training and skill development activities. In addition, to prepare for more stringent reporting requirements and transition to zero carbon, there is a growing need for the fashion and textile industry, including SMEs, to start collecting environmental data along the supply chain, to build up collective data- and knowledge-based systems, for better measurement of the companies' product footprint and carbon emissions (including all other indirect emissions in a company's upper-stream and down-stream activities).

7.2.2 Sustainability Subsidies and Incentives

Resources are required for the sustainability transition. Besides human resources, companies have to develop investment plans for adoption of new technologies, implementation of sustainable design and manufacturing, and use of green materials. Therefore, financial subsidies and incentives are important for companies taking actions towards sustainability. Through the interview and online survey, most companies, especially SMEs, wanted financial or funding support, information on various funding schemes, and more streamlined administrative procedures for funding application. Following are some existing funding schemes and award incentives applicable for the fashion and textile industry.

Useful Resources:

1. Government's Fundings
   To explore more available government funding support, all companies, especially SMEs, are welcomed to visit the HKPC SME One's website.
   - https://www.hkpc.org/zh-HK/support-resource/sme-one/smeone-main

2. Institute's Funding
   - The Open Lab, HKRITA, https://www.hkrita.com/en/theopenlab

3. Government's Award Incentives
   - Hong Kong Awards for Environmental Excellence (HKAEE), Environment and Ecology Bureau (EEB), https://www.hkaee.gov.hk/
   - Hong Kong Green Innovations Awards (HKGIA), EEB, https://www.hkaee.gov.hk/

In recent years, the local government and leaders of financial organisations around the world including Hong Kong have been actively promoting green economy. Green finance, such as green loans, can not only enable companies to raise funds with lower costs for investments related to environmental improvements, but also allow investors to participate in supporting projects with sustainability impacts. In its 2023-24 Budget, the Hong Kong SAR Government announced that it would set up a Green Technology and Finance Development Committee to formulate an action agenda covering green technology, green finance, and green standard certification.

Useful Resource:

1. To get information on green finance and associated standards and requirements, companies, especially SMEs, are encouraged to visit the "Green Finance Knowledge Sharing E-platform" which provides useful and comprehensive green financial information (e.g., self-assessment tools in readiness for green financing in terms of technical, management and financial aspects, sharing of successful cases and other green finance references, etc.). The platform is developed by the Chinese Manufacturers' Association of Hong Kong (CMA).
   - https://greenfinance.hk/

7.2.3 Public Education on Sustainability

In order to raise the awareness of sustainability and green manufacturing of the industry among the public, there should be on-going public engagement channels and events on sustainable fashion concepts, products and technologies, such as exhibitions, competitions, sharing sessions, learning workshops, or gaming, with the support from the government and industry organisations.

Useful Resources:

1. Institute of International Sustainable Development Limited (ISD) has developed a website which facilitates the public and industry to better understand green manufacturing. The project website contains Q&A, posts and news, report and seminar about green manufacturing.
   - https://sustineri.org.hk/tsf-project/

2. To accelerate the change to a circular fashion industry, Redress is educating and empowering designers and consumers so as to reduce clothing's negative environmental impacts. Its dynamic programmes work to minimise the negative impacts of fashion, whilst promoting innovative new models and driving growth towards a more sustainable industry via the circular economy.
   - https://www.redress.com.hk/

In addition to embracing the concept of sustainability and green manufacturing in the core of the business, companies can also play important roles in promoting sustainability awareness through their own public or business events, such as organising a workshop as part of a marketing campaign to encourage customers' participation in after-sales activities of recycling and upcycling.

Demonstration of innovative technologies and solutions can arouse public interest in the industry's sustainability performance. For example, a G2G system is displayed in the Mills for the public to learn about the textile recycling technology and the value of sustainability behind the technology.

Useful Resource:

1. To create a future with more creativity and innovation, the Mills has provided a space for the public to explore the continuity of an authentic Hong Kong story, with themes of textile and industry woven into experiences of innovation, culture, and learning.
   - https://www.themills.com.hk/

7.3 Conclusions

The latest trend of sustainability has intensified the sense of urgency to address various sustainability issues and invigorated the profound transformation towards green manufacture for the fashion and textile industry. With reference to the good sustainability practices of international corporations, the study has found the gap in terms of the levels of understanding and implementing sustainability initiatives between local companies and international corporations. To better understand the opportunities and challenges in it, a survey and stakeholder interviews were conducted. Meanwhile, 10 selected cases from local SMEs in the industry have provided successful stories on embedding sustainability and green manufacture in their business operations. Based on the findings and good examples, different recommendations including enhanced operational approaches, technical solutions, certification, etc., are proposed for SMEs to make improvement in the Handling of Surplus Products, Design and Manufacturing, and Selection of Raw Materials. In addition, collective efforts from diverse industry's stakeholders will be able to deliver far greater impact than any company acting alone. Training and Skill Development with Technical Advancement, Sustainability Subsidies and Incentives, Public Education on Sustainability are the supports needed for impactful sustainability practices.

The fashion and textile industry supplies major daily consumables for customers, and thus plays a key role in making the world greener and more sustainable. Companies, including SMEs, should look at their weaknesses and find their own prospective opportunities to formulate the way toward green manufacturing and sustainability. Also, stakeholders in the industry should create synergies along the whole value chain through knowledge exchange, coaching, guiding and networking sessions to strive towards sustainability.

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