Market Intelligence EFTA for the Philippines

Sector: Value-added Textiles

General Introduction

Background

This market study was conducted under the Swiss Import Promotion Programme SIPPO, which is a longstanding, well-established flagship program for export promotion financed by the Swiss State Secretariat for Economic Affairs SECO. SIPPO is specialized in bridging the «last mile» of the supply chain, which covers the route from the supplier to the buyer. The programme works in eleven core countries and supports six economic sectors. The Philippines is not part of these core countries, so the market study was financed under a special budget for ad-hoc one-off activities and implemented against the background of the Free Trade Agreement FTA between the EFTA States (Iceland, Liechtenstein, Norway and Switzerland, and the Republic of the Philippines) signed in Bern, Switzerland, on 28 April 2016 and entered into force on 1 June 2018.

This study is part of the initiative to increase the Philippines' exports to the EFTA and to improve its competitive position with regard to the EFTA/EU markets. In order to meet these targets, three market studies have been conducted focussing on the following aspects:

- Three product groups including: Processed Food, Natural Ingredients and Value-Added Textiles;
- The «last mile» of the export promotion: market access to EFTA & EU, market entry activities, market information, opportunities and challenges for Philippine products;
- Recommendations for accessing EFTA & EU markets;

How to read this study

All three studies are structured as follows:

- Introduction to the EFTA countries;
- Introduction to EU countries with most trade potential for the Philippine products;
- Trade Regulation, FTAs and non-tariff measures;
- Market Access Requirements;
- Trade related environmental and social issues;
- Analysis and knowledge on selected Philippine products or product groups;

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Corporate summary

This study focuses on analysing the needs and expectations of European buyers in the fashion industry, whether EFTA or EU members, and whether or not the Philippines' supply of yarns, fabrics and fashion apparel meets these expectations - strictly from the point of view of these buyers and their markets.

By Filipino offer we mean that made from the animal and vegetable fibres found in the archipelago, i.e. silk, abaca, banana and pineapple.

The methodology used to carry out this stage is based on a questionnaire sent to a panel of European buyers, on multiple oral exchanges with various actors in the sector (business or personal relations) and on the analysis of European fashion brands active on the market, both in the conventional sector and in the resolutely ethical or organic fashion sector.

The study also looks at the effective presence of Filipino products made from these fibres in European markets and attempts to show how European fashion buyers perceive the Philippines in the international supply of textile inputs and finished products for the fashion industry. To this end, the statistical tool is widely used, with the answers to the questionnaire providing additional information.

In order to highlight the fundamental criteria underlying the competitiveness of a textile sector based on natural fibres, the market access strategies adopted by the major international competitors, in particular China, but also Italy and France for the silk sector, are also studied in detail.

Finally, in the light of all these factors, and taking into account the lightning trends that are now sweeping through and profoundly restructuring the international fashion scene, we will be able to estimate the chances of Filipino natural fibre products gaining access to European markets in the short term, but above all, to suggest, very cautiously, a few avenues to be explored.

With the lines of research and reflection thus laid out, let us now consider what the figures that are being revealed and the voices that are being heard in this study tell us.

In the seven markets concerned - Denmark, Germany, Iceland, Norway, Sweden, Switzerland & Liechtenstein - the presence of Filipino natural fibre products in 2020 is either insignificant or nil.

As far as silk is concerned, the import statistics for all countries concerned are clear: European textile and fashion companies do not buy silk from Filipino suppliers or buy only very marginal quantities. The testimonies of European silk professionals collected for this study confirm the statistical data: the Philippines is not considered by European buyers as a silk supplier country.

For the three fibres of plant origin and despite the total absence of usable statistical data, the situation is similar. Pineapple fibres are doing a little better than the other two thanks to the Pinatex® fabric used, albeit still very timidly, by a limited number of European fashion players.

On the European market very few fashion clothes and accessories are made of abaca or banana fibre. The most successful in this field is certainly the Bananatex® fabric (actually abaca) developed and used for a superb collection of bags by the Swiss company "Qwstion". They are pioneers in their approach: integration of the design dimension right from the conceptualization phase, three years of research & development to develop a yarn, moving into the industrial phase with the right partners, marketing a product perfectly adapted to the target market.

But the overwhelming majority of European fashion players do not use any of these three fibres and many are not yet familiar with them. For the moment they are confined to niche markets and even Piñatex®, although in a growth phase, still remains relatively confidential.

The other important lesson that emerged from all the consultations with industry professionals is that the Philippines does not appear on the radar of international suppliers of fashion apparel and accessories.

This lack of presence, and therefore of image, is generally symptomatic of a shortage of supply, or an offer that is not adapted to the expectations of the target markets.

For silk in particular - N.B. most of the observations valid for this sector are also valid for the other fibres, which is why we have done so much research in the field of silk - the analysis of buyers' expectations and the market access strategies chosen by the competition make it possible to highlight the stumbling blocks which, we believe, limit the access of the Filipino textile and clothing industry to European markets.

Three of these points are absolutely crucial. These are the quality of the raw materials, especially the yarns, the existence of an offer that is truly adapted to the aesthetic, stylistic, technical and ethical expectations and requirements of European fashion buyers, and finally the image that the country arouses in the minds of international buyers.

To this can be added three major factors of competitiveness (out of eight identified): the importance of critical size, the capacity to innovate technically and to put this innovation at the service of creativity, and strategic alliances.

With regard to traditional silk (i.e. non-organic silk), the Philippines has neither the critical size, the attention of buyers, nor a real presence in the market, it faces powerful, organized competition with strong historical roots. The entry ticket to this market will be extremely expensive and the chances of gaining a foothold there are, in our view, very slim.

An alternative could be to bet on organic silk. Indeed, the organic silk market is still in its infancy, very few producers in Thailand and China have launched themselves into the adventure, but to date no country dominates this segment.

In addition, clear international standards have yet to be defined for this emerging sector, which could enable motivated actors from countries to participate in their elaboration and thus build up a reputation in the field. The market is and will be increasingly demanding, the sustainability wave is unstoppable.

For the three other fibres, the real challenge, the one which fundamentally defines the terms of the present and especially future competitive struggle, is the capacity to create and develop yarns, in other words the capacity to set up a spinning industrial sector whose production quality will accurately meet the expectations of international customers.

Thus, the real fundamental question is which - country, public body, private company, textile lab etc. - will be the first to succeed in developing an industrial quality yarn from pineapple, abaca or banana fibres, because for these three materials, the stakes are the same.

Only a substantial investment, followed over the long term (cf. "Qwstion's" experience), integrating from the very inception of the project the strategic factors of adapted designs, durability, adequacy to market requirements (texture, colour, hand-feel...), etc., will make it possible to create, upstream of the value chain, the indispensable spinning industry.

For it is this sector that will irrigate all the downstream branches of the industry, in particular knitting and weaving, with collections of yarns designed and manufactured for the tastes of the European and international markets.

Because it all starts with the yarns.

Yarns are literally the bricks that will lay the foundations on which the export system of the textile industry will then be built. The masters of this whole edifice should be the designers.

Indeed, it is the latter, in close collaboration with their strategic partners, in particular researchers in the initial phase and spinners in the industrialisation phase, who will be responsible for directing both research and development and also the creation and production of yarns, fabrics and garments, in an appropriate manner, i.e. perfectly aligned with the stylistic, qualitative, technical and of course ethical expectations (the growing importance of certifications, standards etc.) of the targeted European buyers.

For it is imperative to think and develop, from the outset, the offer according to the demand and tastes of the targeted European markets and not to extrapolate it on the basis of local know-how and tastes. This is one of the major lessons to be learned from discussions and exchanges with European players.

One can, and must, draw inspiration from the rich national textile tradition, but one cannot base an offer on it, one must draw inspiration from it as much as one must free oneself from it.

It is the role of designers, but also the responsibility of exporting manufacturers wishing to find outlets in Europe, to immerse themselves deeply in European cultures in order to understand their tastes and expectations, and from there develop offers of yarns, fabrics, clothing and accessories that are completely adapted to them.

Some Filipino designers are already doing this, those who do it best have moreover been trained in Europe and have learned to decipher its codes, but we are far from reaching critical size. In our opinion a lot of work needs to be done on this theme, perhaps by multiplying exchanges and strategic alliances with selected European potential partners (fashion design schools and institutes, textile research centres, local industrialists, brands, specialised fashion press, etc.).

In parallel, other strategic alliances will have to be formed with local or international partners with real expertise in the science of spinning and weaving in order to optimise the chances of success during the industrialisation phase.

Last but not least, it would be highly recommendable to offer a strong vision to all stakeholders, who will be the driving force behind this market reconquest.

Intangible elements can have an astonishing power of motivation and persuasion. Motivation of project players, persuasion of international buyers.

All the major silk exporting countries, China, Italy, France, have built their success certainly on the intrinsic quality of their products and their industry, but also on a reputation that is rooted in a powerful founding narrative, in a "beautiful story".

To find its place on the international fashion radar, so that when they hear the name of the Philippines, the eyes of European buyers shine with curiosity and interest, it is absolutely necessary to work on the development of a founding narrative that is completely in tune with the times, that is to say, on the one hand sustainable, eco-friendly, bio-diverse - and no country could, better than the Philippines, this archipelago of 7500 islands rich in exceptional bio-diversity, embody these values - but also creative and resolutely modern.

The old world is changing, fashion is changing, new values are needed.

The Philippines has the human and natural potential to take up the challenge and make a place for itself in this new world of international fashion.

1. The European Market

The European market today, comprises of 27 countries as part of the European Union, Great Britain as a country in transition and four EFTA countries with around 500 million consumers. The cornerstone of the European market is the principle of free movement of goods, capital, services and people within the European Single Market, also called Internal Market.

The European market as such a diverse conglomerate offers vast opportunities for producers and exporters from developing countries and emerging markets. Companies aiming to succeed in Europe must develop a thorough understanding of Europe as a region.

How are European countries interlinked? Are European states completely different, or does the continent show signs of homogeneity? And what about European consumers? Are consumption patterns similar across national borders, or do country differences and peculiarities result in a fragmented consumer market? Ultimately, this leads to the question of how much common ground there is amongst the country markets that make up the European region.

Figure 1. The European Market: the 27 EU states and 5 non-EU states, incl. four EFTA states.

Source: Wikipedia.

1.1. EFTA and the EU

In 1952, the European Union was founded by France, Germany, Italy, the Netherlands, Belgium and Luxembourg. After shaken times of war, a union was formed to create economic and political stability to ensure long term peace in Europe. The Treaty of Maastricht, signed in February 1992, and later the Treaty of Lisbon in 2007 established the European Union EU as it is known today. Since February 1, 2020 the EU members states are Belgium, Bulgaria, Denmark, Germany, Estonia, Finland, France, Greece, Ireland, Italy, Croatia, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Austria, Poland, Portugal, Romania, Sweden, Slovakia, Slovenia, Spain, Czech Republic, Hungary and Cyprus. The United Kingdom has left the EU and is now a country in transition, still holding its status within the European Economic Area EEA, just like the EFTA states, except for Switzerland.

The European Free Trade Association (EFTA) is the intergovernmental organisation of Iceland, Liechtenstein, Norway and Switzerland. It was set up in 1960 for the promotion of free trade and economic integration between its members. The EFTA was founded as an alternative for European states, which were not eligible or not interested in joining the EU.

1.1.1. EEA

The European Economic Area EEA includes EU countries and also Iceland, Liechtenstein and Norway. It allows them to be part of the EU's Internal Market. Out of the four EFTA countries, only Switzerland opted not to join the EEA but decided to focus on bilateral agreements with the EU. Switzerland is therefore, not an EU, nor an EEA member, but is part of the Internal Market. The internal or single market entails free movement of goods, services, capital and people. This implies that EU legislation is aligned on a national level with the EEA countries, and Switzerland is successful in facilitating trade.

A crucial aspect in the context of the single market is the Customs Union with the same rules of customs along all external borders. Products entering the EEA can move freely, are accepted beyond national borders as well as the same duties and tariffs apply for products entering any EEA state.

1.1.2. The European Monetary Union & the Euro

The European Monetary Union EMU is the cooperation of the European countries representing a major step in the integration of EU economies. Whilst all 27 EU member states take part in the economic union, not all adopted the Euro as common currency since its introduction to the world financial markets on 1 January 1999, and physical Euros in 2002. The monetary union, also called the Euro Area, of 19 out of 27 EU member states adopted the Euro as common currency, whilst the remaining eight[1] states still use their respective national currencies.

1.1.3. Economy

In the second half of the 20th century, the abovementioned cooperation amongst European states created not only stability in the political, but also economic context. Combining interests, collaborating on different levels made the states dependent on each other and formed hence a zone of global significance.

Table 1. Comparing EU-27 and EFTA figures, average of 2019 calculated. Source: Eurostat. (no specific Liechtenstein data available)*

	EU-27	EFTA
Population	446.8 million	14.2 million
GDP per capita (in PPS)[2]	100	143.3
Real GDP growth rate	1.5%	1.3% *
Unemployment rate	6.7%	3.8% *
Main trading partners		EU-27 and FTA partners

Among all the countries involved, there are significant differences from the size of the country, to consumer numbers and the purchasing power. Taking the GDP per capita value of 100 as a base for the EU-27 countries, the EFTA amounts to 143.3 which clearly presents the EFTA countries as a more

[1] Bulgaria, Croatia, Denmark, the Czech Republic, Hungary, Poland, Romania and Sweden are not part of the Euro Area or Eurozone. There are exceptions, which allow non-EU member countries the use of the Euro such as the European microstates, for instance.

[2] Gross domestic product (GDP) is a measure for the economic activity. It is defined as the value of all goods and services produced less the value of any goods or services used in their creation. The volume index of GDP per capita in Purchasing Power Standards (PPS) is expressed in relation to the European Union average set to equal 100. If the index of a country is higher than 100, this country's level of GDP per head is higher than the EU average and vice versa.

affluent group. Furthermore, in terms of employment, for instance, the north-south divide is shown in employment rates across the EU. Employment rates in the EFTA countries were higher than in the majority of EU member states.[3]

The EU has set an agenda - Europe 2020 - for jobs and growth for the current decade. It emphasises smart, sustainable and inclusive growth as a way to strengthen the EU economy and prepare its structure for the challenges of the next decade. The strategy's main objectives strive to deliver high levels of employment, productivity,

and social cohesion in the Member States, while reducing the impact on the natural environment. However, to reflect the various national circumstances, a general target needs to be translated into national targets and from a national perspective.

With the latest developments of the long, on-going process of Brexit, the turbulence in the economy, the drifting of Europe, the environmental changes and the latest Covid-19 challenges, as well as consciousness and individualism have all influenced the consumers' behaviour. Additionally, the household size decreased to an average of 2.3 persons in Europe.

There are common baselines for economic regulations, thresholds etc. in the EU and EFTA context. However, it is important to be aware of the tax systems in specific countries, as there is no harmonised system in place. Although partially aligned, there are still major discrepancies between the European countries in terms of the Value Added Tax (VAT) rates.

1.1.4. Europe and global trade

The EU and its member states are with the United States and China the three largest players in world trade. And the four EFTA States are world leaders in several sectors vital to the global economy. After the financial crises and all the waves which have influenced the world economy since then, the European economy has been stable and with positive developments. For comparison, the annual growth rate of GDP in 2018 for the whole world was 3.1 %, with the EU-27 recording slightly slower growth (2.1 %).

COVID19

The COVID-19 pandemic has adversely affected Europe – and many other parts of the world - through the collapse in global commodity prices, disruptions to global and regional supply chains, and heightened risk aversion in financial markets. The widening of domestic outbreaks of the virus has steepened the decline in domestic demand, exacerbated supply disruptions, and brought much activity to a halt.

Widespread virus outbreaks throughout the Euro Area have prompted governments to impose various mitigation measures such as nationwide lockdowns, extended school closures, and border restrictions. These have significantly disrupted domestic economic activity. In contrast to the United States, the rise in unemployment has been modest so far, in large part due to the widespread use of short-time work policies. Euro Area output is expected to contract by 9.1% in 2020—10.1% points below previous projections—with all major member countries experiencing recessions before a gradual recovery gets underway late in the year. Growth is forecast to rebound to 4.5% in 2021, reflecting fading pandemic-related drag, and the eventual effects of accommodative fiscal and monetary policy.4

[3] Eurostat

[4] Worldbank: Global Economic Prospects, June 2020

The spread of the pandemic has essentially halted international travel and disrupted global value chains, resulting in a sharp contraction in global trade. Moreover, the consequences and potential waves are unpredictable.

Covid-19 has clearly exposed the interlinkages of global trade players, and also on a smaller scale the dependencies amongst EU and EFTA states, as well. Hence, sustainability gains new meaning and importance in the sense of creating true resilience of economies and of supply chains.

1.2. Switzerland

Switzerland is situated in the heart of Western Europe. Its neighbours are in the north Germany, in the east Austria and Liechtenstein, in the south, Italy and in the west and north-west, France. The territory of the country covers 41,285 km2 (15,940 sq mi). The swiss topography is characterized by the Alps with many peaks above 4,000 m.a.s.l. (12,000 ft) situated in the southern half, the Jura mountain chain in the north elevating between 1,000 and 1,500 m.a.s.l. and in between the Central Plateau. Roughly 25% of Switzerland counts as an unproductive area due to the adverse climatic and topographic conditions. By 31.12.2019 aprox. 8,6 million people lived in Switzerland, most of them concentrated in the region of the Central Plateau. It is also there where the main cities of the country are situated: Zurich, Basle, Geneva and Bern. The first three are cities of major importance due to their economic performance, the services they deliver to the international community and the industrial complexes, many of which are amongst the world's leading categories. The latter city, Bern, is the capital of Switzerland with the seat of the federal authorities. The country is politically established as a federal republic consisting of 26 cantons.

There are three main languages spoken in Switzerland. German, French, Italian. Another forth language, Romansh is spoken to a minor extent in the south eastern region. All four idioms are official. Therefore, also the four names given officially to the country: Schweiz (German), Suisse (French), Svizzera (Italian) and La Svizra (Romansh). The ISO country codes are CH and CHE deviated from the Latin Confoederatio Helvetica.

Considering the fact of the existing four linguistic regions, there is not one unique linguistic or ethnic identity which would predominate in Switzerland. The shared values forging together the Swiss people are direct democracy, federalism and its neutral position the country always emphasizes in its international relations. Also, the historical background of the country established officially on 1st of August 1291 – the Swiss national day - and the Alpine symbolism omnipresent in the Swiss mentality, play an important role holding together the Swiss people.

1.2.1. History and European cooperation

The Swiss people were always committed to their independency and neutrality. From the very beginning in 1291 throughout the centuries the Swiss confederation always managed its national position towards

Europe with well pondered diplomatic tact and intuition. Major European powers have respected Switzerland's sovereignty and neutrality and since 1815 the country has not been in a war with any other nation.

In one of Switzerland's major cities, Geneva, representations of many international organizations are based: World Trade Organization (WTO), World Health Organization (WHO), United Nations Conference On Trade And Development (UNCTAD), International Organization of Standardization (ISO), to mention just a few. Switzerland is a member of a number of international economic organisations, including the United Nations, the World Trade Organisation, the International Monetary Fund, the World Bank, and the Organisation for Economic Cooperation and Development. The presence of these organizations with their wide-ranging tasks and many-sided duties account for a favourable climate of multiculturality and openness to the world.
On the European level it was a founder of the European Free Trade Association (EFTA) and is part of the Schengen Agreement.

1.2.2. Economy

Segmentation of Switzerland's economy is as follows[5]

	enterprises		employees	(part of) GDP
Total	**606,090**	100%	**5,180,000**	100%
Primary sector: agriculture	53,353	8,8%	160,000	1%
Secondary sector: industry	90,805	15%	1,089,000	25%
Tertiary sector: services	461,932	76,2%	3,931,000	74%

Between the European countries belonging to the two economic blocks EU and EFTA, there are large differences. The four EFTA countries have a slightly higher GDP than the ones belonging to the EU. The GDP per capita in Switzerland, in purchasing power standards was EUR 48,200 (2019)[6] the second highest of the four EFTA countries.

One of the world's strongest currencies with the lowest inflation rate is the Swiss franc, CHF.

Figure 2. Swiss franc expressed in euro and US dollar with highs and lows June 2016-June 2020[7]

Euro Low-high June 2016 - June 2020	**US dollar Low-high June 2016 – June 2020**
0.83-0.95	0.92-1.03

[5] Source: www.bfs.admin.ch / STATENT 2017
[6] source EFTA annual report 2019
[7] Source: www.xe.com (2020/06/13)

Figure 3. Indexed inflation rate between June 2016 and June 2020 (Index basis:12.2015 = 100)[8]

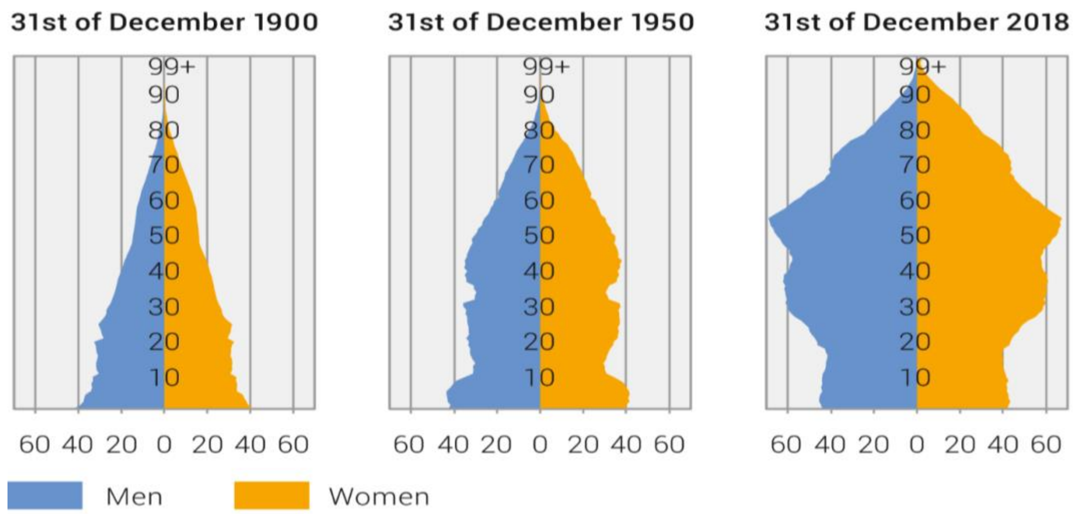
Indexed Inflation Rate Final value June 2016	Final value June 2020
100,6	101,3

Since January 2018 VAT in Switzerland has been 7.7% for most of the services and products traded. A reduced VAT of 2.5% is applicable to food, most agricultural goods, medicaments and printed matter.[9]

1.2.3. Demographic indicators

By end of 2019 Switzerland's population was 8,542 million inhabitants. With the country's surface area of 41,291 km2, the population density per km2 is 206. Two thirds of the population live in the geographical region between the Jura mountains in the North and the Alps in the South. This region represents only 30% of the territory, therefore the population density there, is much higher. On average the population growth of Switzerland is a little bit less than 1% annually, since 1999. In 2019 it was 0,7%. Switzerland has a growing segment of elderly people. Nearly 20% are aged +65 years, the same % as for the group 20 years and less, whilst 61 % are aged between 20 and 64. This situation is having an increasing effect, with the elderly people being an increasingly important consumer group. 1:

Figure 4. Demographic pyramids of Switzerland 1900, 1950, 2018: Age structure of population, number of people in 1,000. Source: FSO 2019



Many products and services are being adapted and designed for this proportionally faster growing population segment.

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[8] Source: https://lik-app.bfs.admin.ch/en/lik/rechner (2020/06/13)

[9] source: https://www.ch.ch/en/vat-rates-switzerland/; 2020/06/13)

The level of education is high and many enterprises invest in Research and Development tackling the constantly changing situations of society and environment with innovation and efficiency. Consequently, new business opportunities are increasing, being a source of employment. The positive employment situation has an important complementary function to the increasing portion of the elderly population living in the country.

By end of 2019 approx. 60% of the Swiss population, 5,18 million people, were working. For ten years the unemployment rate has been between a 2,1%, low in 2019 and a 3,6%, high in 2016[10]. However, it is without doubt that the consequences of the COVID19 pandemic situation also will affect the good performance of the Swiss labour market in the near future, even though it has proven formerly to have impressive resilience after recent shocks.

1.2.4. Doing business

Efficiency and accountability are key words in doing business with Switzerland and all business-related activities are very results orientated. In the yearly ranking of the World Bank, Switzerland is considered an easy place to do business. Benchmarked in May 2019 the country ranks 36th of 190.[11] One of the ten indicators of this ranking is "trade across border". For this specific indicator Switzerland holds the 26th place. The Swiss economy is highly integrated in the international economy. Only the Swiss agriculture sector benefits from some protection, whilst industrial products are embedded in an open trade regime.

1. Swiss product legislation is broadly in line with the rest of Europe. Although Switzerland does not take part in the so called "single market" through the EEA, which the other three EFTA states do, doing business with Switzerland does not differ significantly from the rest of Europe. The Swiss Government negotiated bilateral economic agreements with the EU, which culminated in Bilaterals, a cross-platform agreement covering seven sectors: research, public procurement, technical barriers to trade, agriculture, civil aviation, land transport, and the free movement of persons. In recent years and in order to maximise the country's international competitiveness, Switzerland has brought most of its practices into conformity with European Union policies and norms.

Exports of goods (machinery, chemicals, metals, watches, agricultural products) and services account for 66% of the Swiss GDP. The economy is therefore strongly geared towards exports.[12] The EU is Switzerland's main trading partner. Of all Swiss exports 52 % go to the EU, being Germany, France and Italy, the main export destinations in the EU. In 2019, Switzerland was the EU's 4th largest partner: Imports of goods and services from Switzerland into the EU were ranked 4th behind the USA, China and UK.[13]

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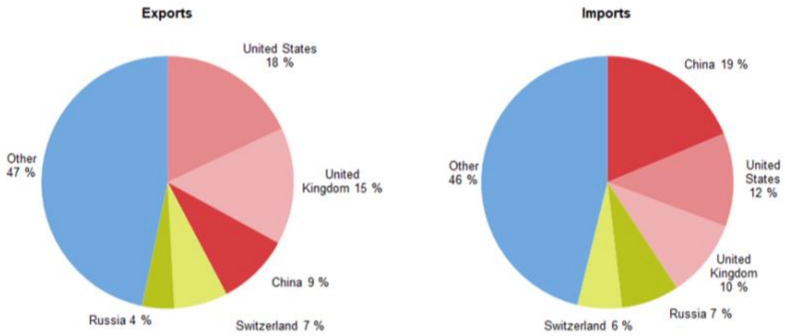
[10] source: https://tradingeconomics.com/switzerland/unemployment-rate; 2020/06/14
[11] source: http://www.doingbusiness.org/economyrankings/ ; 2020/06/14
[12] source: https://tradingeconomics.com/switzerland; 2020/06/14
[13] source: https://ec.europa.eu/trade/policy; 2020/06/14

Figure 5. Main trade partners of Switzerland. Switzerland among the EU 27's main partners for trade in goods, 2019. Source: Eurostat.



Another proof of Switzerland's business friendly environment is the fact that the country is home to several large multinational corporations. Nestlé, Hoffmann-La Roche, Novartis, ABB, Swiss Re, UBS AG and the Swatch Group, are just a few of the many enterprises which operate in and from Switzerland, spreading their company philosophy to Europe and also worldwide.

1.2.5. Culture

Switzerland belongs to Western Europe in terms of its culture. The country is located in the centre of Western Europe, where the Latin influenced culture from the South and southwestern Europe melt together with the various cultural elements of the rest of Europe. Therefore, in doing business you can show emotion, but you have to be measured in how you do so. Formality in business in this part of Europe is strong.

Swiss people in particular and Western Europeans citizens in general, tend to be receptive to new business if they can see a reasonably quick return. Transparency, accountability and punctuality pared with fairness, equality and quality are important values if not to mention, core elements of trading with the Swiss.

The Swiss people value order, privacy and punctuality. Their home is very important to them. They are also hard working and have been called perfectionist. There is a strong desire for belonging, as well as a sense of community and social conscience.

Swiss people value everything to be highly structured and have respect for rules that make people know what is expected of them. They value respect for, and submission to, timetables and schedules.

1.3. Liechtenstein

In the East of Switzerland and the West of Austria, lies the Principality of Liechtenstein, which is landlocked by these two countries. It is the river Rhine which forms mainly the western border towards Switzerland. With an area of only, approximately 160 km² (about 62 sqm) this microstate lies completely in the geographical region surrounded by the Alps mountain range. The lowest point of Liechtenstein is at 430 m.a.s.l. and its highest peak at 2,599 m.a.s.l.; its biggest city is Schaan.

Liechtenstein is a constitutional monarchy divided into 11 municipalities and its capital is Vaduz. It is the smallest German speaking country in the world and the only one which does not share borders with Germany.

1.3.1. History and European cooperation

The post-war period after 1945 was a period of reconstruction. Liechtenstein joined the Statute of the International Court of Justice in 1950, signed the Helsinki Final Act of the CSCE (now OSCE) with 34 other States in 1975, joined the Council of Europe in 1978, and was admitted to the United Nations (UN) in 1990. In 1991 Liechtenstein entered the European Free Trade Association (EFTA) as a full member and since 1995 has been a member of the European Economic Area (EEA - an organisation serving as a bridge between the EFTA and the EU) and the World Trade Organisation (WTO). From the perspective of economic and integration policy, Liechtenstein’s relations within the framework of the EEA and the EU play an important role in Liechtenstein foreign policy. In addition, the good relations with the neighbouring countries of Switzerland and Austria are a particular priority. The government of Liechtenstein is working constantly on the topics to harmonize its economic policies with those of an integrated Europe.

1.3.2. Economy

The years following the second world war were marked by prosperous development and within only a few decades, Liechtenstein developed from a mainly agricultural state into a modern society with a diversified economy. The highly specialized industrial firms are competitive throughout the world, and trade occupies an important position in the region. In 2017 the GDP per capita in purchasing power standards was EUR 91,500, the highest of the four EFTA countries.[14]

Today the economy of Liechtenstein is mainly based on services. More than 60% of the GDP is generated in this sector. The main services are banking, fiduciary companies, asset management and investment fund companies and common-benefit foundations and trusts. Whilst agriculture accounts for less than 1%, this sector contributes to the beautiful landscape of the Principality, which attracts many tourists. The industry sector is highly export oriented and also very specialized. Its main branches are electronics, metal manufacturing, dental products, pharmaceutical products, precision instruments, to mention the most important ones. These industries contribute roughly 37% to the GDP.

The handling of VAT is the same as in Switzerland, however Liechtenstein has its own VAT administration. The general VAT rate is 7.7%. A reduced rate of 2.5% is applicable to deliveries of food, drugs, newspapers, magazines, and books.

[14] source: www.efta.int/statistics ; 2020/07/22

In December 2016 a new agreement on double taxation was signed by the two EFTA members Liechtenstein and Switzerland and took effect, replacing a former one from 1995.

Since 1924 the Swiss Franc has been the official currency in Liechtenstein. All coins, bank notes and other means of payment used in Switzerland were then recognized as official legal tender in the country. Also, in the same year the two countries formed a customs union, which is still in place today.

1.3.3. Demographic indicators

Whilst in the mid-fifties there were 15,000 people living in the Principality, this number was slightly higher than 27,000 in the mid-eighties . Today it has an estimated population of 38,000 people and its density of population is 242 people living on 1 km². Roughly one third of the inhabitants does not have the nationality and are foreign residents. In 2017-2018 the population growth rate was 0,8%.[15] As in many other countries in Europe, Liechtenstein has an ageing population, being 20% older than 60 years old. However, it is calculated that the relatively high population growth rate of the last 60 years will be lower than 0,15% beyond 2040 and by then the number of citizens living in Liechtenstein will remain around 40,000 inhabitants.

Liechtenstein offers high living standards and thanks to its tax regulations, attracts many citizens to choose the country as their residence.

1.3.4. Doing business

Liechtenstein participates in a customs union with Switzerland and as mentioned above, employs the Swiss franc as national currency.

In Liechtenstein more than 4,600 enterprises are registered, which offer more jobs than the country has inhabitants. Thus, more than 20,000 people commute daily to the Principality to work there, coming mainly from Switzerland, Austria and Germany.

More than 70,000 holding (or so-called 'letter box') companies have established registered offices in Liechtenstein, thanks to relatively low business taxes as well as easy Rules of Incorporation. This provides about 30% of the country’s state revenue. Liechtenstein also generates revenue from Stiftungen ("foundations"), which are financial entities created to increase the privacy of non-resident foreigners' financial holdings. The foundation is registered in the name of a citizen of Liechtenstein, often a lawyer.

1.3.5. Culture

Situated in the heart of the Alps, Liechtenstein has many of its own traditions. It’,s customs are often drawn from Alemannic culture influenced by alpine heritage, agricultural habits and also closely linked to the Catholic church and its holy days and rites. The particular, geographical situation and its small size has influenced the country, also by external cultural influences, most notably those originating in

[15] source: www.efta.int/statistics ; 2020/07/22

the southern German-speaking areas of Europe, including Austria, Bavaria and Switzerland. Bearing this in mind, it has to be pointed out that the Principality is nowadays a striving society where the modern way of living has a sound place in everyday life. The cultural elements influencing "doing business" in Liechtenstein are the same as in Switzerland.

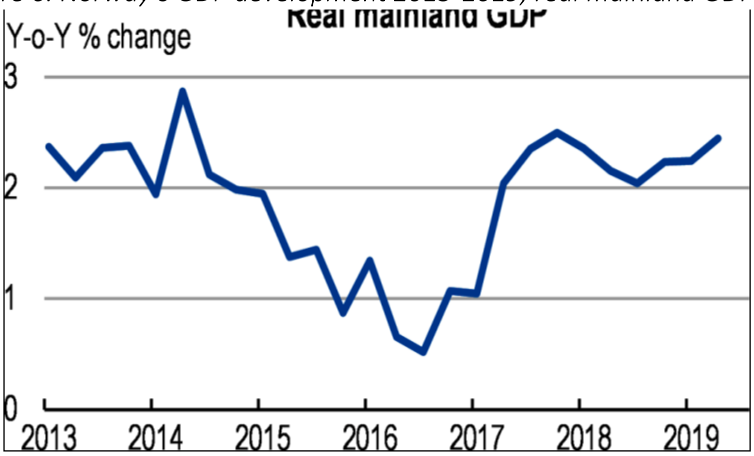
1.4. Norway

Norwegians (5.4 million people) have a deeply rooted respect for traditional values and a clear orientation towards what the future can offer; combine this with a very modern infrastructure, broad wealth and highly grounded culture then it may explain their reputation for innovation in all areas.

Modern Norway is prosperous, urbanised and has a diverse population. Income and wealth are broadly distributed, compared to most industrialised countries.

1.4.1. Economy and European cooperation

Figure 6. Norway's GDP development 2013-2019, real mainland GDP



Although it notes a number of challenges facing the country (slowdown in trade and investment, vulnerability to property-market risks, faltering business and consumer confidence in the euro area etc.) the latest OECD report on Norway's economic situation[16] confirms the high level of income and well-being enjoyed by most Norwegians.

Norway ranks fifth (after Liechtenstein, Switzerland, Iceland and Luxembourg) among European countries with the highest purchasing power (EUR 29,072 in 2018). GDP growth has resumed since 2017.

Norway is, with Switzerland, the only EFTA founding member still part of the organization, and as such trades freely with the EU.

The country has an efficient social protection system, a large public sector (e.g. the oil, gas and wind power sectors are managed by the state-owned company Equinor, oil and gas production accounts for approximately 20% of national economy) and a particularly active private sector.

16

Oslo is one of Europe's youngest capitals. It is a hub of creativity where leading companies are concentrated, where numerous start-ups are developing and where young actors of the cultural scene, including those in the fashion and textile industries, are constantly innovating by relying on the latest technologies, digital or otherwise, but also by remaining faithful to the deeply Scandinavian value of attachment to nature.

It is therefore not surprising that Norway, together with its neighbours Sweden and Denmark, is one of the most advanced and demanding countries in terms of sustainability, the new credo of the times.

The Norwegian nature is rich in oil, gas, forests, minerals and fish, all active economic sectors (the country is the second largest exporter of marine products after China).

Europe, which absorbs about 80% of the total value of Norwegian exports, is by far the country's main export market, followed by Asia (11%), North America (6%) and Africa (2%).

Table 2. Norway's main trading partners in 2019, source[17]

Trading partners	Values exported to these countries	Percentage share of Norwegian exports
United Kingdom	USD 20.7 billion	20.1 %
Germany	USD 14.7 billion	14.3 %
Netherlands	USD 11.4 billion	11.1 %
Sweden	USD 7.9 billion	7.7 %
France	USD 6.1 billion	5.9 %
Denmark	USD 4.7 billion	4.5 %
United States	USD 4.5 billion	4.4 %

Norway is ranked 9 among 190 economies in the ease of doing business, according to the latest World Bank annual ratings[18]. The country is in an excellent position (3rd) on the issue of compliance with contractual commitments, in other words it is a very safe place to do business.

1.4.2. Doing Business

Norway is a particularly egalitarian society. In the professional field this is reflected in companies organised according to a flat hierarchy and organisation. Norwegians often work across hierarchies rather than down through the line. The leadership style is informal and is based on employee freedom with responsibility.

English is widely spoken, usually to a very high standard. Norwegians are direct and ready to negotiate, straight to the point, with minimum small talk. They will be primarily interested in the facts, in your

[17] http://www.worldstopexports.com/norways-top-15-import-partners/
[18] https://www.doingbusiness.org/content/dam/doingBusiness/country/n/norway/NOR.pdf (World Bank Group)

product, the details of your commercial offer, its practical, logistical, commercial aspects, rather than your personality or social skills.

From a commercial point of view, the number of cities of critical size is limited in Norway, the four most important being:

- Oslo: leading international hub. Norway's fast- growing, governmental, economic and cultural capital. A uniquely compact global city on the rise and one of Europe's youngest capitals.
- Bergen: gateway to the Fjords and a global maritime centre: Boasting a vibrant maritime and energy sector, the Bergen region is also the portal to world-famous natural tourist attractions. With its direct access to the famous Norwegian fjords, Bergen attracts a growing number of tourists from around the world.
- Trondheim: Norway's science and technology hub. Trondheim region is a leading European science and technology centre. The region's capital, also called Trondheim, is a vibrant city, with major business activity and cultural attractions. Trondheim has more than 45,000 students in its universities and research institutions.
- Stavanger: Europe's leading energy region, is also going through exciting developments in business and tourism. The Stavanger region is Norway's third largest urban area, with about 400,000 residents, 130,000 of them in the city. The area has generally been Norway's most successful economic region.

Whatever your field of activity, it is highly likely that your business will be discussed with partners based in one of these four cities

1.4.3. History and culture

Norway claims the heritage of early Norse seafarers, raiders, colonizers, explorers, and merchants for whom the "Viking Age" (793 to 1050 c.e) was named. In the ninth century Harald Fairhair became the first king of all of Norway, consolidating smaller kingdoms through alliance and conquest. Harald's descendant, Olaf Tryggvesson (Olaf I), converted to Christianity while in England and came to Norway in 995 to force conversion of the country from the Norse religion. Killed in 1030 at the Battle of Stiklestad, Olaf II (Saint Olaf) was the first king to organize an administration for church and state.

The emergence of the nation-state can be traced to the development of a national culture, then to that of a national identity, and finally to the political events that led to the country's final emergence as an independent nation in 1905. The Napoleonic Wars resulted in the dissolution of the union between Denmark and Norway in 1814, the year in which the Norwegian constitution was established. Norway had been a province of Denmark for nearly four hundred years before it was ceded to Sweden. The union with Sweden was dissolved in 1905.

The foundation for the development of a national culture can be traced to the national romanticism of an intellectual elite. In the late eighteenth century, Norway was predominantly rural, with a tiny elite of religious and government officials that began to collect information about national history and culture.

Later, the educated bourgeoisie wrote about the history of the country, tracing the connection between the present and the Icelandic sagas, the Viking period, the medieval period etc. Those intellectuals also began recording and describing rural culture, including folktales, architecture, customs, clothing, mythology, music, and peasant dialects. From a national romantic perspective, this information helped make the case for a distinct Norwegian land, culture, and history, quite different from those of other

Nordic countries. Rural culture became identified as Norwegian culture, a culture that could be traced back to Viking times.[19]

1.5. Iceland

1.5.1. History and European cooperation[20]

What we know[21] of Iceland's earliest settlers can be largely traced back to the Landnamabok, or the « Book of Settlements », a five-part medieval manuscript that tells the story of the Norsemen discovering and settling the country in the 9th and 10th century.

Thankfully, the Icelandic language is largely unchanged from that of Old Norse, meaning stories contained in the « Landnamabok » are just as accessible today to native speakers as they were nearly 1000 years ago. Iceland was given its name by a Scandinavian sailor after he spotted some drift ice in the fjords during an especially brutal winter.

In order to sustain life in Iceland, it was a necessity for the early inhabitants to trade with the outside world. In 1262 the Iceland became a vassal of the Kingdom of Norway. One century later, Iceland would be granted to the Danish. Disaster struck Iceland with the violent eruption of the Lake Volcano in the 18th century, killing 9000 Icelandic citizens and causing widespread famine.

Iceland finally became a republic on June 17, 1944 (Iceland's parliament, Althing, is the oldest surviving parliament in the world, founded in 930 AD. Gaining independence meant that Iceland had to reinvent its position on the world stage as culturally separate from the Danish, as well as their relationship with the rest of mainland Europe. The second half of the 20th century saw substantial economic growth driven primarily by the fishing industry.

Iceland is highly integrated with the EU through membership in the European Economic Area (EEA), the Schengen Area and the European Free Trade Association (EFTA). It is also a signatory of the Dublin regulation on asylum policy and a partner in the EU's Northern Dimension policy to promote cooperation in Northern Europe.

Through the EEA, Iceland participates in the single market and contributes financially towards social and economic cohesion in Europe. A significant proportion of the EU's laws are applied in Iceland today. Iceland also participates, albeit with no voting rights, in a number of EU agencies and programmes, covering areas including enterprise, environment, education and research. Iceland has a bilateral Free Trade Agreement with the EEC since 1972. Two thirds of Iceland's foreign trade is with EU Member States.

[19] https://www.everyculture.com/No-Sa/Norway.html

[20] Sources: https://ec.europa.eu/neighbourhood-enlargement/countries/detailed-country-information/iceland_en and https://guidetoiceland.is/history-culture/history-of-iceland

[21] Source of Island history data: https://guidetoiceland.is/history-culture/history-of-iceland

1.5.2. Economy[22]

In many ways living conditions are good in Iceland. There was a great deal of economic progress in the last century and this is reflected in the fact that, between 1945-2009, the GDP per capita increased by 450%. In 2019 Iceland's GDP was the 7th[23] highest in the world (USD 60,180 per capita).

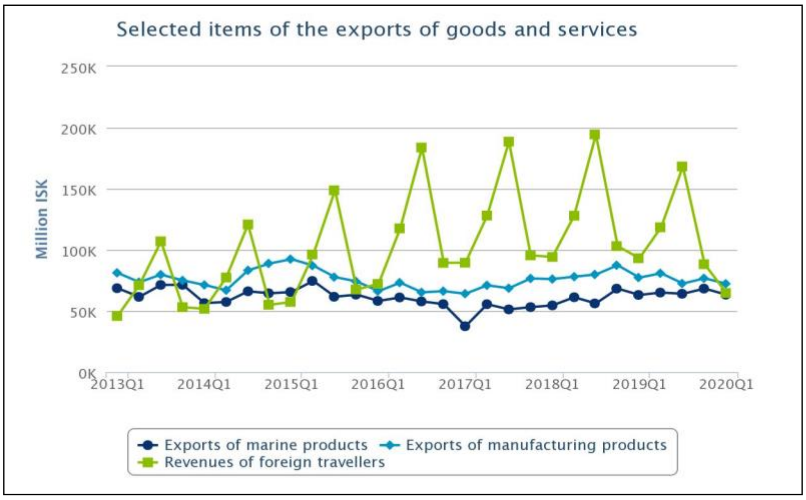
Iceland's economy combines a capitalist structure and free-market principles with an extensive welfare system. Except for a brief period during the 2008 crisis, Iceland has in recent years achieved high growth, low unemployment, and a remarkably even distribution of income, indeed inequality is among the lowest in the OCDE, as is the gender gap.

Iceland's economy has been diversifying into manufacturing and service industries in the last decade, particularly within the fields of tourism, software production, and biotechnology. Abundant geothermal and hydropower sources have attracted substantial foreign investment in the aluminium sector, boosted economic growth, and sparked some interest from high-tech firms looking to establish data centres using cheap green energy.

Tourism, aluminium smelting, and fishing are the pillars of the economy.

For decades the Icelandic economy depended heavily on fisheries, but tourism (39%) has now surpassed fishing (18%) and aluminium (17%) as Iceland’s main export industry, however tourism is putting pressure on the environment and making the economy more dependent on tourist inflows (particularly reduced flows due to the sanitary crisis).

Figure 7.: Iceland exports selected items and the (fluctuating) income from tourism, source[24]



[22] Sources: https://www.stjornarradid.is/media/forsaetisraduneyti-media/media/2020/iceland2020.pdf , https://www.cia.gov/library/publications/the-world-factbook/geos/print_ic.html , https://www.oecd.org/economy/iceland-economic-snapshot/ , https://www.chamber.is/files/útgáfa/skýrslur/the_icelandic_economy_2019_report.pdf
[23] After Luxemburg (Nbr. 1), Singapore, Ireland, Switzerland, Norway and the USA.
[24] https://www.statice.is

Despite promising economic growth in the long term, economic instability[25] and volatility have been more pronounced in Iceland than in other countries (e.g. in 2008 worsening global financial conditions resulted in the collapse of Iceland's three largest banks, a 6.8% fall in GDP and unemployment peaked at 9.4% in February 2009). The lack of good governance for decades led to much more elevated inflation than elsewhere, with consequent costs, damages and uncertainty regarding value.

Since the collapse of Iceland's financial sector, the government's economic priorities have included stabilizing the krona, implementing capital controls, reducing Iceland's high budget deficit, containing inflation, addressing high household debt, restructuring the financial sector, and diversifying the economy.

The EU makes up 53% of Iceland's total trade in goods, followed by the United Kingdom (8.1%), the United States (8%), Norway (7.9%), and China (5.2%).

The coronavirus pandemic and the restrictions around it, have had a deep impact on the Icelandic economy which shrank at a record 9.1 % on quarter in the second quarter of 2020. The country did not impose a lockdown, but some types of businesses were ordered to close and travel restrictions hurt both imports and exports of services.

1.5.3. Demographic indicators

The total land area is 103,000 km2 and the population is 360,384 (of which nearly 44,000 are foreign citizens), compared with 348,450 in January 2018. The population growth was 3.4% in 2 years. This increase was mainly due to positive net migration in 2018, together with natural population growth (more births less deaths). The population has grown in the past five years by an annual average growth rate of 1.9%.

Iceland is one of the 10 countries in the world with the highest life expectancy (average 84 for both sexes). It is a relatively urbanised country with 94% of its inhabitants living in urban areas and almost two-thirds of the entire population live in Greater Reykjavik, the country's capital.

The nation is relatively young and amongst the more educated in OECD; 42.4% of people aged 25-64 years old have graduated from university.

1.5.4. Doing business and business culture

Iceland is ranked 26 among 190 economies in the ease of doing business, according to the latest World Bank annual ratings. It has a strong import market that has grown every year from 2014 to 2018. Apart from a dip in 2019, the import market is projected to grow until at least 2024 (IMF, 2019). Still, due to the small size of the country, it remains a small market.

Iceland's economic and trade relations with the EU are mainly governed by the European Economic Agreement EEA https://www.efta.int/Legal-Text/EEA-Agreement-1327 The European Economic Area extends the laws of the single market (except for agriculture and fisheries laws) to the European

[25] Small economies are by nature often more volatile than larger economies. This is mainly caused by a lack of diversification and relatively large external influences Beedon, Pétursson and Rose (2011): http://faculty.haas.berkeley.edu/arose/BPR.pdf

Economic Area countries. This means that Iceland is legally bound to add EU directives and regulations about the free movement of goods, persons, services and capital into Icelandic law.

As Iceland is one of the four members of EFTA, the free trade agreement signed in 2016 between the Philippines and EFTA, now in force, applies to exports from the Philippines to Iceland under the terms and conditions set out in the treaty.

« Icelanders are hard workers, and willing to work overtime to get things done. They're not too focused on their work mandate, but more on 'doing it for the team'[26] » As well as being well educated, the workforce is very young – half the population is under 35 – which means a results-driven mentality. Everybody speaks English." Icelanders can be quite reserved but very direct.

Indeed, as in the case of other Scandinavian countries, professional contacts are extremely direct and focused on the product and the essential. Half-measures, the temptation to negotiate on points that are in reality, non-negotiable, the use of approximations, etc. are badly perceived.

Before any commercial contact is made, it is essential to have an offer that is as close as possible to the customer's expectations, which implies having put in place, upstream, all the necessary measures to study the market in depth and prepare a perfectly targeted and mastered offer.

1.5.5. Culture

The isolation of the island has helped to preserve an authentic culture and language. As previously mentioned the Icelandic language has changed very little in 1000 years, so much so that its contemporary speakers can still read the sagas and eddas (the famous tales that tell the lives of legendary and invisible characters gnomes, elves, giants, goblins) of the Middle Ages. Indeed, the population is still very much imbued with ancient cultures, myths and legends, all very much linked to the forces of nature so fully expressed in this highly volcanic country.

This age-old literature is an integral part of reading from childhood, and Icelanders are very proud of their cultural heritage. Museums are filled with traces of this surprising past.

The capital Reykjavík boasts a burgeoning contemporary art scene. Icelandic art comes to life in innovative galleries sprinkled throughout the streets, showcasing everything from cutting-edge experimentation to more mainstream forms of creative work.

« Freedom, expression and experimentation are descriptions that come to mind when thinking about the contemporary art scene in Reykjavík (…) The scene here is vibrant[27]. Everyone is incredibly passionate about art and the language and dialogue that comes with it » says Ingibjörg Sigurjónsdóttir, one of the capital's most acclaimed artists[28].

Traditionally, Icelandic artists have always pursued their education abroad before returning home, bringing an international flavour to the scene that contrasts with the community vibe in Reykjavík.

[26] https://www.director.co.uk/doing-business-in-iceland-international-report-19039-2/

[27] Sometimes a good glass will help to create the right vibe!… Alcohol is widely integrated into Icelandic culture; its consumption is a national tradition.

[28] https://theculturetrip.com/europe/iceland/articles/iceland-s-10-contemporary-artists-and-where-to-find-them/

This is what characterises contemporary art in the city: the diverse experience of its artists coming together in a progressive and very egalitarian society, where they're able to encourage each other and in turn expose younger creative talents to different international influences. It makes for some explosive and high-quality work that's as varied as it is interesting.

This openness to the world is favourable to international exchanges, whether private or commercial. For example, the Icelandic fashion scene has, despite the country's small size, many very creative designers at the forefront of international trends.

2. The value-added Textiles and Apparel Sector in EFTA & selected EU countries

2.1. Main Product Lines

The survey focuses on fashion apparels, knitted, crocheted or woven, on fabrics, woven or knitted, usable as inputs in garments' manufacturing, on yarns (spun) and fibres (raw stage or processed but not spun).

The survey does not include home textile, textile of industrial use, technical and medical textiles etc.

2.1.1. Methodology

Foreign trade statistics issued by each respective country concerned by the survey may, for some products but not for all as we will see later, provide us with very useful data, in particular:

- Codification and description of the product in its different forms (e.g. raw fibre, yarns, fabrics and apparels), which allow us to refine the overall analysis.

- Imported values of the product in its different forms which give us clues about the appearance under which the product is most demanded by the importing country and help us to detect eventual growth markets.

- Evolution of imported values and countries of origin over time, which provides us with some indication of the trends in the structure of demand and in the sourcing strategies implemented by the players in the fashion industry of each respective purchasing countries.

- List of main supplying countries for a given product in its different forms, allowing us to assess the degree of competition and map the key players, eventually detecting new emerging ones or, on the contrary, the ones being on the decline.

The prerequisite to access EU as well as EFTA countries' statistical data is to have identified, for each product and eventual derivatives we are interested in, the matching product description and the corresponding CN (Combined Nomenclature) numeric codes. These codes and descriptions are part of a goods nomenclature, called « Combined Nomenclature » (CN), used both by EU and EFTA countries.

The important point to remember here is that to obtain useful data, the fibre name - i.e. abaca, banana, pineapple or silk - must explicitly appear in the CN product description; the absence of such name in the description would render the statistical data much less relevant or even useless.

Official EU / EFTA list of textile fibre names

In its Annex 1 « List of textile fibres names » the regulation (EU) No 1007/2011 of the European Parliament[29] on « textile fibre names and related labelling and marking of the fibre composition of textile products », also used by the EFTA countries, is listing 18 categories of natural fibres, animal and vegetal (see Annex 1)

[29] Full text available here https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32011R1007

On that list, silk, number 4 on the list, and abaca, number 10 in the list, are explicitly named, but neither banana nor pineapple leaf fibres are mentioned.

This is already an early indicator of the difficulty we will face to find statistical data on products made of banana and pineapple fibres.

EU « Combined Nomenclature » (CN) and « Harmonized system » (HS)

Regulation (EEC) No 2658/87 established a goods nomenclature (hereinafter referred to as the « Combined Nomenclature » or 'CN') to meet, at one and the same time, the requirements of the Common Customs Tariff, the external trade statistics of the Union, and other Union policies concerning the importation or exportation of goods.

All products imported in the EU and the EFTA countries are classified using that « Combined Nomenclature » (CN) governed by the « Convention on the Harmonized Commodity Description and Coding System », commonly known as « HS Nomenclature « or « Harmonized System[30] ». The CN / HS comprises about 7,000 commodity groups, organized in a hierarchical structure by:

- sections
- chapters (2 digits)
- headings (4 digits)
- sub-headings (6 digits)

Please note, in this survey we will rely on the latest version of CN as it appears in Regulation (EU)/2019/1776 of 9 October 2019 (cf. footnote nbr. 2)

The good news is that the 7 European countries (4 from the EFTA + Denmark, Germany and Sweden) considered in this survey are all applying the same « Harmonized System », so we will be able to access each national bureau of statistics using the same product codes… as long as these codes exist.

Nevertheless, the statistics have limitations.

Statistics: scope and limitations

Statistically speaking there are in our case two possible data groups:

. Type 1: the name of the fibre explicitly appears in the description of the commodity (and its associated CN code). E.g. CN code 5007 « Woven fabrics of silk or of silk waste ». In that case we can collect very relevant statistical data corresponding precisely to the natural fibre that interests us.

As we will see that essential condition is reasonably satisfied in the case of silk, very poorly satisfied with abaca and not at all fulfilled with pineapple and banana fibres.

. Type 2: the second possibility, unfortunately the most common, is that the name of the fibre is not explicitly mentioned in the commodity description. In that case the product made of that material

[30] Full text of CN nomenclature latest version (Regulation EU/2019/1776 of 9 Oct. 2019) can be found here: http://publications.europa.eu/resource/cellar/4fdaf64e-fc25-11e9-8c1f-01aa75ed71a1.0006.01/DOC_1

will be classified under a generic designation, the most widely used in the CN being « of other textiles materials ».

E.g. CN code 6104 49 00 « Women's or girl's dresses, knitted or crocheted, of other textiles materials (excl. cotton, synthetic and artificial fibres, wool or fine animal hair's fibres) ». These « other textiles materials » could actually be silk, abaca, banana or pineapple.

Because there is no way of knowing the percentage that each specific fibre represents in the global imported value provided by the statistical data, that all-encompassing classification is obviously much less relevant than the previous one. It may provide us with valuable pointers on the country's global sourcing strategy, on the respective importance of each commodity in the country import map, on the main supplier countries etc.

Wherever possible we will rely on type 1 data, if they do not exist then our only recourse will be to interview active members of the fashion professional community through questionnaires or telephone interviews.

2.1.2. Commodities' selection for statistical purposes

All natural and man-made fibres and derivatives (yarns, fabrics, garments etc.) are included in the CN section XI « Textiles and textile articles » which contains 14 chapters (50 to 63) (see Annex 2).

We should now examine in detail Section XI to try to select, for each of the 4 fibres, a statistical population that is representative. In other words, we should define, for each type of fibre, which chapters, headings or sub-headings we will use as a basis for our statistical analysis. That population will include units pertaining to the two data groups highlighted in the paragraph above.

For obvious reasons, we can straight away set aside the chapters 51, 52, 54 & 55. As home textile is not included in this survey we can also discard chapter 57. Chapters 56, 58, 59, 60 and 63 are not fully appropriate because the range of products they cover are hardly ever connected with the fashion apparels business. Ultimately, we are left with 4 especially relevant chapters corresponding to the 4 crucial processing stages (presented in below table 9) under which a natural raw material used in textile and fashion industry can be transformed and marketed:

Table 3. Textile processing stages and corresponding chapters in the Combined Nomenclature.

PROCESSING STAGE	CORRESPONDING CHAPTER IN CN SECTION XI
FIBRE (raw or processed but not spun) & YARN (spun)	Chpt. 50: « Silk » Chpt. 53: « Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn »
FABRIC (mostly woven)	Chpt. 50 for silk Chpt. 53 for abaca, banana & pineapple
APPAREL (knitted or woven)	Chpt. 61: « Articles of apparel and clothing accessories, knitted or crocheted » Chpt. 62: « Articles of apparel and clothing accessories, not knitted or crocheted »

SIPPO
Swiss Import Promotion Programme

Selection of the statistical population for silk fibre items

All silk products of interest to us - i.e.fibres, yarns, fabrics and garments directly related to fashion apparels industry - appear in the 3 following chapters (also called categories)

i - Cat. 50: it is worth noting that, like chapter 52 is only dedicated to cotton, chapter 50 is entirely devoted to silk. In the section XI only 2 chapters are focusing exclusively on one fibre, this underlines the overriding importance of silk material for the global T&G industry. The 7 headings of that chapt. 50 will be part of our statistical population, they obviously pertain to data group nbr. 1.

Table 4. Combined Nomenclature, chapter 50 – silk.

CN code	Description
Chapter 50	Silk
5001	Cocoons
5002	Raw silk (non-thrown)
5003	Silk waste, incl. cocoons unsuitable for reeling, yarn waste and garnetted stock
5004	Silk yarn (excl. that spun from silk waste and that put up for retail sale)
5005	Yarn spun from silk waste (excl. that put up for retail sale)
5006	Silk yarn and yarn spun from silk waste, put up for retail sale; silkworm gut
5007	Woven fabrics of silk or of silk waste

Garments being the silk products presenting the highest added value they are widely trade. It is under the large chapters 61 & 62, known in the fashion industry as « Cat. (for category) 61 » knitted apparels and « Cat. 62 » woven / non-knitted apparel, that we will find the highest foreign trade figures.

ii - Cat. 61: 14 headings or sub-headings[31] will be part of our statistical population (see Annex 3). They mostly belong to data group nbr. 2, with one exception Cat. 6106 90 30 « Women's blouses and shirts, knitted or crocheted, of silk or of silk waste »

iii - Cat. 62: 13 headings or sub-headings will be part of our statistical population (see Annex 4). Out of them 7 categories make specific reference to silk material:

. 6204 49 10: « Women's dresses, not knitted or crocheted, of silk or silk waste ».
. 6204 59 10: « Women's or girls' skirts and divided skirts of silk or of silk waste (excl. knitted or crocheted and petticoats) ».

[31] I voluntarily discarded Cat. 6104 19 90 « Women's or girls' suits, knitted or crocheted, of other textile materials (Excl. synthetic fibre, cotton) » as well as Cat. 6104 29 90 « Women's or girls' ensembles, knitted or crocheted, of other textile materials (Excl. synthetic fibre, cotton, wool or fine animal hair) » because, unfortunately, these 8 digits sub-headings are rarely available in the countries' national statistics' tables, which would oblige us to use the more generic commodity groups 6104 19 & 6104 29 which are much too vague. Too imprecise because Cat. 6104 19 includes suits made of cotton and Cat. 6104 29 includes ensembles made of wool and fine animal hair so silk products may actually represent a low proportion of items within these 2 groups.

. 6204 69 10: « Women's or girls' trousers, bib and brace overalls, breeches and shorts of silk or of silk waste (excl. of wool, fine animal hair, cotton or synthetic fibres, knitted or crocheted, panties and swimwear) ».
. 6206 10 10: « Women's or girls' blouses, shirts and shirt-blouses of silk or silk waste, not embroidered, made of lace or containing lace (excl. knitted or crocheted and vests) ».
. 6206 10 90: « Women's or girls' blouses, shirts and shirt-blouses of silk or silk waste, embroidered, made of lace or containing lace (excl. knitted or crocheted and vests) ».
. 6214 10 00 « Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted, of silk or silk waste »
. 6215 10 00 « Ties, bow ties and cravats, not knitted or crocheted, of silk or silk waste »

If these 7 precise codes appear in the national statistics of each targeted country then we'll have access to group 1 data, if not we will rely on more generic categories, that is group 2 data.

We were finally able, in the case of silk, to have at our disposal a reasonable statistical population to perform a relevant statistical research base on group 1 and group 2 data. For each country, the accuracy of the statistical results will depend on the level of occurrence of group 1 data: the more the better.

Occurrences of « abaca » in CN commodity groups

Abaca (Musa textilis N.) is a fibre also known as Manila hemp. (N.B. the « other » hemp Cannabis sativa L. is called « true hemp » in the CN and is found under heading 5302)

The name abaca appears only twice in the Section XI: once in chapter 53 and once in chapter 56.

Table 5. Combined Nomenclature, chapters 53 & 56.

Chapter 53	*Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn*
5305	Coconut, abaca (Manila hemp or Musa textilis Nee), ramie and other vegetable textile fibres, not elsewhere specified or included, raw or processed but not spun; tow, noils and waste of these fibres (including yarn waste and garnetted stock)
5308	Yarn of vegetable textile fibres; paper yarn (excl. flax yarn, yarn of jute or of other textile bast fibres of heading 5303 and cotton yarn)
Chapter 56	*Wadding, felt and non-wovens; special yarns; twine, cordage, ropes and cables and articles thereof*
5607	Twine, cordage, ropes and cables, whether or not plaited or braided and whether or not impregnated, coated, covered or sheathed with rubber or plastics:
5607 90 20	Of abaca (Manila hemp or Musa Textilis Nee) or other hard (leaf) fibres; of jute or other textile bast fibres of heading 5303

Given the low occurence of products identified as being made specifically of abaca and the almost systematic use, in all chapters, of the generic formula « of other textile materials », making statistical discrimination between the different varieties of fibres impossible, the probability of having consistent import statistics for products made of abaca fibre is low, and becomes almost nil when considering the fashion clothing and accessories segment.

A good illustration of that situation is the heading 5305 (cf. above): it mentions explicitly - but not exclusively - abaca, and then states that this CN Code also concerns « other vegetable textiles fibres,

Table 6. Combined Nomenclature, chapters 53 & 60

Chapter 53	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn
5305 00 00	Coconut, abaca (Manila hemp or Musa textilis Nee), ramie and other vegetable textile fibres, not elsewhere specified or included, raw or processed but not spun; tow, noils and waste of these fibres (including yarn waste and gar- netted stock)
5308	Yarn of other vegetable textile fibres; paper yarn:
5308 90	Other:
5311 00	Woven fabrics of other vegetable textile fibres; woven fabrics of paper yarn:
5311 00 90	Other
Chapter 60	Knitted or crocheted fabrics
6006	Other knitted or crocheted fabrics:
6006 90 00	Other

not elsewhere specified or included ».

This actually means that both banana and pineapple fibres are also falling in that group. In these conditions, an approach by fibre is impracticable because the value of imported goods under that category will not be itemized by type of fibre. Coconut, abaca, ramie, banana and pineapple's fibres will all fall indiscriminately under the same heading 5305, EU countries import statistics will provide a global import figure including many varieties of fibre. That kind of indiscriminate data is irrelevant for this survey.

The case of Banana and Pineapple leaf fibers (PALF)

Like abaca, banana fibre is not a bast fibre but a leaf fibre, so, as fibre, it will not be included in heading 5303 (« Jute and other textile bast fibres etc. ») but in heading 5305 00 00 (see below table 12). As yarn it will be classified under heading 5308, as woven fabric under heading 5311, as knitted fabric mostly under heading 6006.

Banana garments could be found in any category corresponding to the headings or sub-headings of Cat. 61 and 62 (see above par. 2.1.2) indicating « of other textile materials ».

But in any case, the word « banana » never appears in Section XI, so there is no way we can identify explicitly imported fibre, fabric and apparels made of banana in any of the 7 countries concerned by the survey. In the case of that material we cannot rely on any specific statistical data, in order to evaluate possible import flows, we will therefore have recourse to the collection of information through contact with fashion professionals.

Pineapple leaf fibre (PALF)

Same situation as for banana fibre, no access to statistical information precise enough to allow us to draw coherent analyses, here again we will have to rely on the contributions of professionals in the sector.

2.1.3. Important consequence of this statistical void

Of the four fibres covered by the survey, only silk has adequate statistical coverage, and of the four it is also the most widely known, used and distributed natural material.

This maturity, its longstanding presence on the markets, its international trajectory, the high number of players in the sector, the experience accumulated around this natural fibre, all contribute to making it a study object of first choice.

Most of the analyses and conclusions concerning the silk market that will be developed in the framework of this work, are almost all of the strategic themes addressed in the study of this fibre (e.g. the importance of a qualitative approach encompassing the whole sector, the identification and analysis of competitive advantages, the essential elements conditioning the chances of access to European markets, the lines of thought proposed to facilitate access to these markets, the central theme of sustainability in the development of commercial strategies etc.) are equally valid for abaca, banana and pineapple fibres.

It is for this reason that I have devoted the most important part of this work to silk.

The lessons that we can learn from an in-depth study of one fibre - knowing that the time allocated for this work did not in any way allow us to carry out an in-depth study for all four fibres - are valid for the other fibres, because the problems and issues are basically the same.

The questionnaire

In order to refine and complete the statistical and written information (newspapers, reports, fashion magazines etc. in print or online) but also in an effort to compensate for the lack of usable statistical data for 3 of the 4 fibres, it was important to listen to the opinions of the industry professionals themselves.

To this end, many face-to-face or telephone conversations with actors across the whole sector took place (managers, designers, production managers and coordinators, those responsible for ethical and environmental issues within companies, researchers, etc.) and a questionnaire (cf. Annex 17) has been prepared.

N.B. The vast majority of the interlocutors consulted in the framework of this study are employed by fashion companies, they work mainly for brands but also for distributors, importing wholesalers, agencies etc.

Many of them wished to remain anonymous. Therefore, to avoid any risk of breaching the European legislation on the protection of personal data known as the EU "General Data Protection Regulation"

(GDPR), almost no names of individuals will be mentioned in the study unless they are known to the public through online or paper publications. On the other hand, companies' names will be mentioned.

For the reasons we know, professionals in the sector today are extremely busy and concerned, time has become even more precious, so the questionnaire had to be both simple and short (6 questions), otherwise few would have answered it.

Even so the response rate was very average. It has been sent exclusively to European fashion companies selling mainly clothing but also, to a lesser extent, accessories.

The questionnaire was sent to 60 companies in 7 countries: Switzerland, Germany, Iceland, Norway, Denmark, France and England (these last two countries are not part of the study but I had easier contacts there and they are part of the large family of European textile and clothing buyers).

The 21 contacts from the countries and companies listed below, that is 35% of the total number solicited, replied to me, it's not much but for this kind of exercise it's not so bad. (I did not receive any answers from Iceland).

Denmark:	« Bestseller Group », « Mos Mosh A/S » « Saint Tropez 1993 »
France :	« Tara Jarmon », «Zadig & Voltaire», « Barbara Bui », «Groupe Galeries Lafayette»
Germany:	« Adler Modemärkte AG », « Gerke AG », « Escada SE », « Takko Holding GmbH »
Norway:	« Cathrine Hammel AS », « Fall Winter Spring Summer AS », « Line of Oslo AS »
Sweden:	« Elvine », « Tiger of Sweden », « Weekday »
Switzerland:	« Akris », « Tally Weijl Trading AG », « Group Manor »
UK:	« Eskandar Ltd »

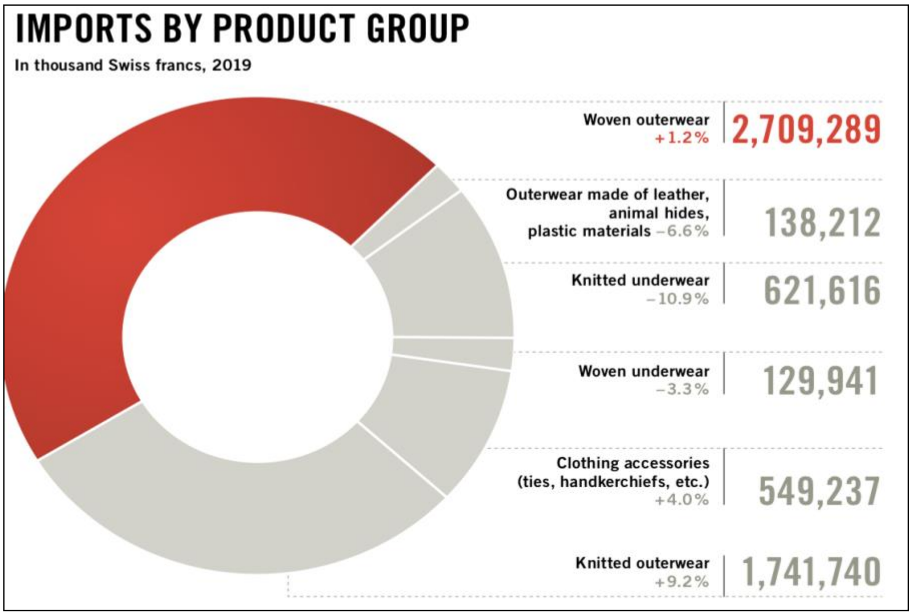
2.2. Switzerland and Liechtenstein[32]

2.2.1. Consumption & Production

In 2019 Switzerland imported:

- USD 5.35 billions[33] of clothing
- USD 1.79 billions of fabrics

Figure 3. Swiss clothing imports in 2019. Source: https://swisstextiles.ch/downloads/annual-report-2019



- Prevailing market trend

If we were to adopt a single formula to characterise the directions and trends that will guide the Swiss textile and clothing industry in the coming years, then I would choose an extract from the introduction to the 2019 / 2020 report published by the Swiss Textile Federation www.swisstextiles.ch.

« We are firmly convinced that, now more than ever, the reorientation of sustainability as an absolute necessity for our industry will increasingly become the centre of focus. It was barely imaginable ten years ago, but today it is reality: those who are not geared to sustainability will be left behind ».

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[32] As there is no specific information available on Liechtenstein, Switzerland always implies hereafter Liechtenstein. N.B. All statistical resources concerning Switzerland are coming from the « *Swiss-Impex database* » published by the Swiss Federal Customs Administration https://www.ezv.admin.ch/ezv/en/home/topics/swiss-foreign-trade-statistics.html

[33] For all conversion from CHF Swiss francs into USD Americans dollars the following exchange rate CHF 1.00 = USD 1.10 has been used.

- A few Swiss players in the fashion sector

The Swiss market for textiles, clothing and fashion accessories includes, as elsewhere, many types of players: large groups, retailers, department stores, specialised agents, luxury brands, sportswear brands and, more recently, a growing number of brands, generally smaller, promoting their sustainable approach and ethical practices.

In the textile and clothing manufacturing sector, there are 2,559 companies in Switzerland, 92% of which are micro-companies, i.e. having less than 10 employees.

N.B. For all those wishing to obtain more details on this sector I warmly recommend the reading of the Swiss Textile Federation's report mentioned above, it is extremely well done.

This diversity is illustrated in the table below.

Table 7. Selection of representative Swiss textile and clothing player of various segments.

SWISS LUXURY BRANDS			
	HQ city	Web site	Comments
BRULI sa	Stabio	https://www.bruli.com	Very high-end Men's and some Ladies shirts, handcrafted in Switzerland (use high end materials Sea Islands cotton, super fine Merino wool, silk crêpe, silk twill, silk popeline)
AKRIS	St. Gallen	https://eu.akris.com	Founded 1922. (Understated) luxury apparels for Women. Characteristic of Akris: use double-sided fabrics, the famous St. Gallen embroideries, cashmere, silk and silk blends for woven or knitted apparels. Propose also accessories, particularly a famous hand bag made of horse hairs sources in Mongolia and especially treated and woven in Switzerland https://www.youtube.com/watch?v=P-iVG3KF-nc
Zimmerli Textil AG	aarburg	www.zimmerli.com	Since 1871 said to produce the best worldwide underwear for Ladies & Men. Use top quality material, pure grège silk, merino wool and cotton. All is made in Switzerland with many operations handcrafted.
SWISS BRAND MEDIUM RANGE			

TALLY WEIJL Trading AG	Basel	https://www.tally-weijl.com/fr_FR/	Founded 1984. Family business. 2700 employees including 620 in Switzerland. Sell their own apparels collections for women and teenage girls at affordable prices. Recently (June 2020) due to economic consequences of C-19 crisis close 200 of its 800 points of sale around the world and planning to close 5 to 10 shops out of 81 in Switzerland. Said to be under serious financial pressure. Strong presence in Italy and Germany. In 2016 took over the 69 stores of the bankrupted French company MIM increasing drastically its presence on French market.
SWISS MULTI BRANDS RETAILERS			
BERNIE'S	Zürich	https://www.bernies.ch	Distribute a range of exclusive international top labels for Women & Men
PKZ Burger-Kehl & Co., AG	Urdorf	https://www.pkz.ch/fr/	170 fashion apparels brands, many high end, more than 15,000 products, 39 branches, CHF 170 million turnover in 2019. Omni channel distribution (on line shop since 2011)
Modehaus MODEVA AG	Pratteln (close to Basel)	www.modeva.ch	Funded in 1980. Specialized in Women's apparels. 17 branches, distributing +/- 30 brands
BONGENIE GRIEDER Braunsch-wig Group	Genève	https://www.bongenie-grieder.ch/en	Speciality stores in 12 Swiss cities distributing ready-to-wear collections for women, men & children + accessories, perfumes & home decor. Mid-range to luxury product, many top brands. Launch on-line store in 2013.
SWISS DEPARTMENT STORES			
JELMOLI AG Part of « SWISS PRIME SITE AG »	Olten	https://www.jelmoli.ch https://sps.swiss/en/group/home	« Jelmoli » is Switzerland's largest premium dept. store. Over two million items from more than 1000 brands, including a large proportion of fashion brands, are displayed for a diverse and demanding clientele on a 24000 m2 of space on six floors. Since 2009 is part of « Swiss Prime Site AG » the leading

			listed real estate company in Switzerland.
Groupe MANOR s.a. (Part of « Maus Frères s.a. » see below)	Basel	https://www.manor.ch	Manor, with 59 department stores, 30 supermarkets and 27 restaurants in Switzerland, is a multi-specialist in the retail trade. Its assortment consists of its own brands and many international lifestyle brands in the fields of fashion and accessories, perfumery, jewellery, toys, multimedia, sport and travel, home and decoration. Its price range is more accessible than that of top-of-the-range department stores targets the medium / medium-high end... In January 2020, the group had to close, after a long standing dispute with the landlord « Swiss Life », the flag ship store, which, for 35 years, had occupied a prime location on the famous Banhofstrasse in Zurich. In August 2020 Manor announces plan to cut 476 jobs in Switzerland. Group's stated objective is to increase the current share of online commerce fivefold by the end of 2024. https://www.swissinfo.ch/eng/manor-department-stores-to-cut-476-jobs-across-switzerland/45972804
SWISS LARGE GROUPS			
Maus Frères s.a.	Genève	https://www.maus.ch/en/about/	Family business, established in 1902.Own and run various international recognized apparels brands: Lacoste & Gant (sportswear), Aigle (outdoor), The Kooples Paris (Fashion), Manor (Swiss dpt. Stores)

Compagnie Financière Richemont s.a.	Geneva	https://www.richemont.com/group.html	Richemont owns several of the world's leading companies in the field of luxury goods, with particular strengths in jewellery, watches and writing instruments. But also owns 3 apparels luxury brands Alaïa, Chloé & Dunhill, as well a powerful on-line distributor of fashion apparels and accessories www.net-a-porter.com
SWISS SPORTSWEAR COMPANIES			
MAMMUT Sports Group AG	Seon	https://www.mammut.com/uk/en/	A Swiss company offering outdoor & mountainering equipment with a proverbial reputation for quality.
IIC-Intersport International Corporation	Bern	https://www.intersport.com	« Intersport » is the world leader in the distribution of sporting goods. Achieved a sales record of € 12.3 billions (+ 3.3% / 2018). Is present in 57 countries with 5,421 shops worldwide (end 2019) and 65,000 employees. The group is distributing 42 Sportswear brands, many of which are famous (Adidas, Nike, Asics, Converse, Fila, Merrel etc.)
SWISS SILK YARNS SOURCING AGENT			
S.O.L Silk Opportunitie s Ltd.	Volkets-vil (close Zürich)	https://www.silk-opportunities.ch/en/	Founded in 2010 with the objective to supply top qualities of silk yarns to the top weavers or other silk users in Europe and around the world at a reasonable price, thanks to Cie excellent and decades-long relationship with the best silk producers in Brazil and China.
SWISS SUSTAINABLE COMPANIES			
AVANI	Geneva	https://www.avani.ch/en/	Only Women's apparels, small collections, permanent styles, very feminine, Transparent pricing. Only work with local artisans. Design made in Swiss & production in France. Work only with fibers from natural sources and with ecological transformation processes (minimum ecological footprint): organic linen, Hemp,

			Tencel, Lenzing modal. Do not use cotton at all.
FREITAG	Zürich	https://www.freitag.ch/fr	Famous Swiss brands transforming used truck tarps into highly functional, unique bags, also use bast fibres (blend of linen, hemp, modal) for their bags. Propose also apparels lines for Men and Women not using cotton but mostly Modal, hemp, linen, true hemp etc. 26 stores Freitag + 300 selling points, 200 employees (+ a very particular organizational system they call « Holacracy ») is a slow & ethical marketplace stocking over 50 innovative sustainable brands primarily located in Europe and Asia. This platform was founded by the Swiss Millennial Sophie Brunner in 2017
URBAN KISSED	Unterägeri	https://www.urbankissed.com/contact-us	Is a slow & ethical marketplace stocking over 50 innovative sustainable brands primarily located in Europe and Asia. This platform was founded by the Swiss Millennial Sophie Brunner in 2017. Represented labels should: a) Work with accredited ethical garment factories that are legally bound to provide respect, fair hours, wages, healthcare, family support, and a genuine interest in their employees. b) Mindfully sourced, organic and/or cruelty-free materials, natural inks, and textiles that have not contributed to toxic soils, genetically modified crops, river pollution, and high carbon emissions.

JUNGLE FOLK	Zürich	https://www.junglefolk.com/pages/about	Use only organic and renewable fibres, with a focus on quality and longevity, are fascinated by the handwoven. Source « peace silk » (silk moths are not harmed in the silk winning process) from India (GOTS certified), alpaca fibre from Peru, GOTS certified organic cotton from Peru and Portugal, organic linen from Belgium. Production is made with partner ateliers and artisans in Peru, Portugal.
QWSTION And BANANATEX	Zürich	https://www.qwstion.com/en/ https://www.bananatex.info/index.html	The Cie. is developing bags with 100% abaca fibre. Abaca raw material is coming from the Philippines. First natural abaca fibre is turned into a paper then that paper is cut into thin stripes twisted into yarns. That latter spinning process is carried out by a Taiwanese mill. It took the team 2.5 years of efforts to obtain the proper yarn and fabric result. Final material is expensive so a lot of care is taken designing efficient patterns. Attention to details is very important as well as very trendy designs development.

There is sometimes a misconception that Switzerland is a haven of peace where social and political stability goes hand in hand with companies' constancy. This is not the case, Swiss companies in the textile and clothing sector are also experiencing upheavals, whether these are caused by the sanitary crisis or by other reasons.

Here are three recent events that have shaken the Swiss fashion sector:

- The « Charles Vögele » textile distribution group which opened its first shop in Zurich in 1955, had, in 2005, a market capitalisation of CHF 3 billion, 7,000 employees, around 800 shops, a presence in various European countries and a turnover of CHF 1.4 billion[34]. The group was gradually dismantled from 2009 onwards and disappeared completely in 2018 after it was taken over in 2016 (for the Swiss part) by the large Italian group « OVS[35] S.p.a. ».

Only two years after the takeover, the OVS's operations in Switzerland led to a massive bankruptcy in 2018, resulting in the closure of 140 shops.

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[34] Richard Etienne et Philippe Rodrik, « Charles Voegele ferme son plus grand magasin en Suisse », *Tribune de Genève*, 24 août 2016

[35] OVS (the "Italian H&M") http://www.ovscorporate.it/en/node/17 is the Italian leader in the clothing market with a local market share of 8.1% higher than H&M or Zara, it specialises in the sale of "low cost" clothing for adults and children. Under OVS and UPIM brands it counts over 1,750 stores in Italy and overseas. OVS was floated on the Italian Stock Exchange in March 2015 and with net sales of 1,370 million euros.

- In 2019 « Schild AG » an important Swiss textile and apparels retails company specialized in Men's wear and uniforms disappeared after being progressively absorbed by « Globus » / « MGB » from 2013 onwards.

- Founded in 1907 by Swiss banker Heinrich Burkhardt, the department shops « Magazine zum Globus A.G. » , better known as "Globus" https://www.globus.ch/fr/infos-globus and in particular the flagship store in Zurich, have become an icon of high-end retailing in Switzerland, including women's fashion https://www.globus.ch/fr/femmes and men's fashion https://www.globus.ch/fr/hommes .

In 1997, the « Migros-Genossenschafts-Bund » (MGB) https://www.migros.ch/fr/entreprise.html , the largest Swiss retail group ahead of its main competitor Coop https://www.coop.ch/fr/entreprise/groupe-coop.html , acquired the « Globus » to finally sell it in February 2020 to the Thai retail giant « Central Group » https://www.centralgroup.com/en/about-us/about-central-group , associated in a 50/50 joint venture with the Austrian « Sigma Holding GMBH » https://www.signa.at/en/ .

To relaunch the brand, Central Group and Signa are counting on synergies with the other networks they already control in several European countries. Through their joint venture, the « European Luxury Department Store Group », the two partners own the « KaDeWe Group », a longstanding player in department shops in Germany, the Italian « Rinascente » chain, and the Danish "Illum" in Copenhagen.

In April 2020 the EU Commission has approved under the EU merger regulation the joint acquisition[36].

As silk is the only one of the four fibres that permits a serious statistical analysis, we will now turn our attention to the Swiss silk market.

2.2.2. Silk imports & trade structure. Swiss imports of silk products from the Philippine

i - summary

Over the last 5 years, the level of silk commodities imports from the Philippines by Switzerland is extremely low.

For cocoons, raw silk, yarns and fabrics (cat. 50) there are no imports at all.

For knitted and woven apparels (cat. 61 & 62) import volumes are insignificant.

Over the period considered the trend is either stagnation or declining imports.

Still, the 3 following groups of women's garments, all part of Cat. 62 (woven) are regularly increasing their sales in Switzerland, even if the absolute amounts remain very modest: dresses (# 6204 49), silk trousers and shorts (# 6204 69 10), silk blouses (# 6206 10 10).

[36] see https://textile-future.com/archives/45362

The Swiss companies that responded to the questionnaire and the Swiss professionals in the trade with whom I was able to discuss, all confirmed to me that local entrepreneurs in the textile and fashion sector do not import silk from the Philippines.

ii - Details per category

. Cat. 50 (cocoons, raw silk, yarns and fabrics / see Annex 5 for exhaustive figures): Zero silk items imported from that group. Except USD 1,413 in 2016.

. Cat. 61 (knitted apparels / see Annex 6 for exhaustive figures): non-cotton T-shirts alone are representing 92% of the USD 4.1 million imported in the last 5 years by Switzerland, but we don't know if some of them are made of silk and which percentage, as no type 1 data is available for that group. It is likely that the proportion of silk items is very low as silk Ts are not common and most buyers are importing them from China. Therefore, the bulk of non-cotton Ts imported from the Philippines are probably not made of silk.

Out of the 14 commodity groups pertaining to that category, 12 are either falling or stagnating indicating a downward trend.

. Cat. 62 (woven apparels / see Annex 7 for exhaustive figures) We have in that category 6 sub-headings corresponding to commodities explicitly made of silk (type 1 data), all together they represent USD 26,360 of imported value in the last 5 years (average of USD 5,300 / year), which is insignificant.

Of these 6 sub-headings only 1 - women's silk shirts cat. 6206 10 10 - is progressing, the others are either stagnating or falling. In 2019 silk shirts represented 76% of the total imports of the 6 sub-heading, approximately USD 10,000, this remains marginal.

The other sub-headings belong to type 2 data, all are either nil or rather low in value with the exception of Cat. 6205 90 / men's shirts (USD 180,600 imported in 2019). But men's silk shirts being much less prevalent than women's ones and the latter representing, as seen above, a marginal imported value, it is highly improbable that the proportion of silk shirts among cat. 6205 90 could be important.

So, from which country are the Swiss and the Liechtensteiners importing their silk products and which kinds of products?

Swiss imports of silk products from the rest of the world

Figure 9. Switzerland & Liechtenstein cat. 50 / silk total imports in USD.

. Cat. 50 (silk - raw, yarns, fabrics)

Silk global	: cat. 50 (sum of all below categories 5001 to 5007)
Cocoons & raw silk	: cat. 5001 & 5002
Silk waste	: cat. 5003

Silk yarns : cat. 5004, 5005, 5006

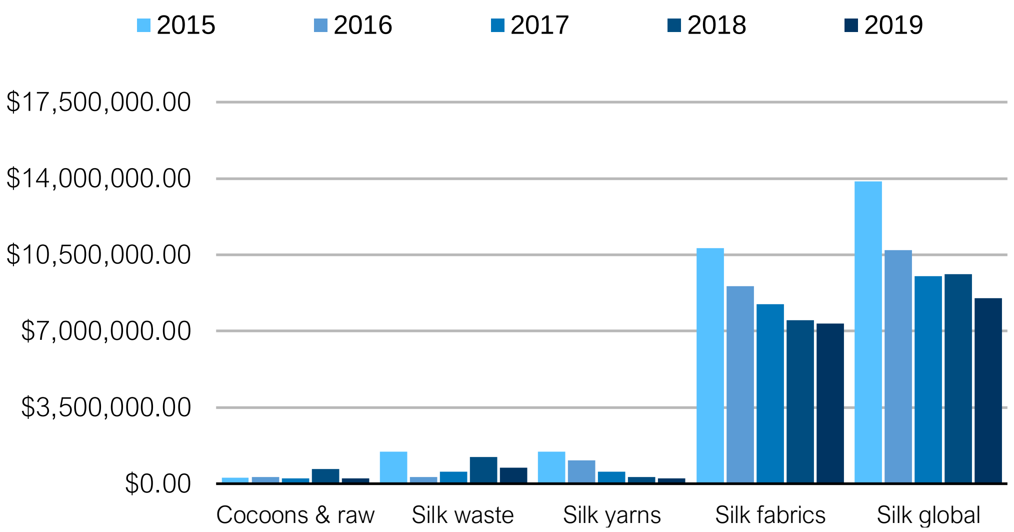
Silk fabrics : cat. 5007

Highlights

Swiss imports of Cat. 50 items (silk) have been in constant decline for 5 years posting a 38.7 % fall during the period. There is no sign of recovery and 2020's sanitary crisis will not help.

For 2019 commodities respective shares are the following:

Silk fabric:	86.5%
Silk waste:	8.5%
Silk yarns:	2.9 %
Silk cocoons:	2.7 %



Who are Switzerland's main supplying countries of Cat. 50 silk commodities?

Table 8. Switzerland's main supplying countries for Cat. 50 in 2019, in USD.

Rank	Silk Cat. 50 supplier country	Amount sold to Switzerland USD 2019	Percentage / total Cat. 50 Swiss import
1	Italy	3 572 771	46 %
2	Germany	1 586 569	20.5 %
3	China	1 115 159	14 %
4	India	559 505	7 %
5	France	449 119	6 %
6	UK	110 420	1.4 %
7	Thailand	87 215	1.1 %

	Average price per kg of fabric			Price **evaluation per meter** of fabric in plain color for some current silk quality & density. **Prices in USD**				
Countries	Swiss francs CHF	American dollars **USD**		CHIFFON 10MM	GEORGETTE 12MM	CdC 16MM	SATIN 19MM	SATIN 22MM
Italy	236,60	243,89	45 inches / 114 cm	12,10	14,52	19,36	23,01	26,63
			55 inches / 140 cm	14,82	17,79	23,72	28,16	32,61
Germany	183,40	189,05	45 inches / 114 cm	9,38	11,25	15,00	17,83	20,64
			55 inches / 140 cm	11,49	13,79	18,39	21,83	25,27
India	165,00	170,08	45 inches / 114 cm	8,44	10,12	13,50	16,05	18,57
			55 inches / 140 cm	10,33	12,41	16,54	19,64	22,74
China	134,90	139,05	45 inches / 114 cm	6,90	8,28	11,04	13,12	15,18
			55 inches / 140 cm	8,45	10,14	13,53	16,06	18,59

8	Brazil	35 613	0.4 %
9	USA	31 489	0.4 %
10	Japan + S. Korea	21 277	0.27 %

Highlights

- Italy, Germany and France are supplying Switzerland with more than 72% of its cat. 50 silk. This is mainly because Swiss clients are extremely demanding in terms of quality and buy from top European suppliers (see par. 4.2.4.2 & 4.2.4.3 Italy and France silk players)

- Price issue: of course, the average price of the silk items bought from Italy or Germany will be much higher than the one imported from China, but that is not an issue for many silk Swiss importers, for them quality comes first.

To illustrate that price point here below is a very rough approximation of what could be the DPU price (Delivery at Place Unload / cf. incoterms 2020) for some basic varieties of silk fabrics.

A very approximate price idea indeed as the « Foreign Trade Statistics » from Switzerland (Federal council) do not indicate the type of fabrics imported, if it is plain or printed, its width or density etc.

Table 9. Rough evaluation of DPU prices for silk items coming from various supplier countries

. Cat. 61 (knitted apparels & accessories)

N.B. Analysis based on our Cat. 61 statistical population (cf. above par. 2.1.2.1). Unfortunately, no data type 1 is available in that category 61, so we will consider general trends only.

Figure 10. Switzerland imports Cat. 61 selected population per commodity (W = Women)

On average imports of Cat. 61 selected population by Switzerland have been steadily increasing for 5 years, with the three following items having registered a substantial increase:

# 6104 59:	Women's or girls' skirts and divided skirts, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton)	+ 70%
# 6104 69:	Women's or girls' trousers, bib and brace overalls, breeches and shorts, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).	+ 90%
# 6109 90:	T-shirts, singlets and other vests, knitted or crocheted, of other textile materials (Excl. cotton)	+ 11%

Who are Switzerland's main supplying countries of Cat. 61 commodities?

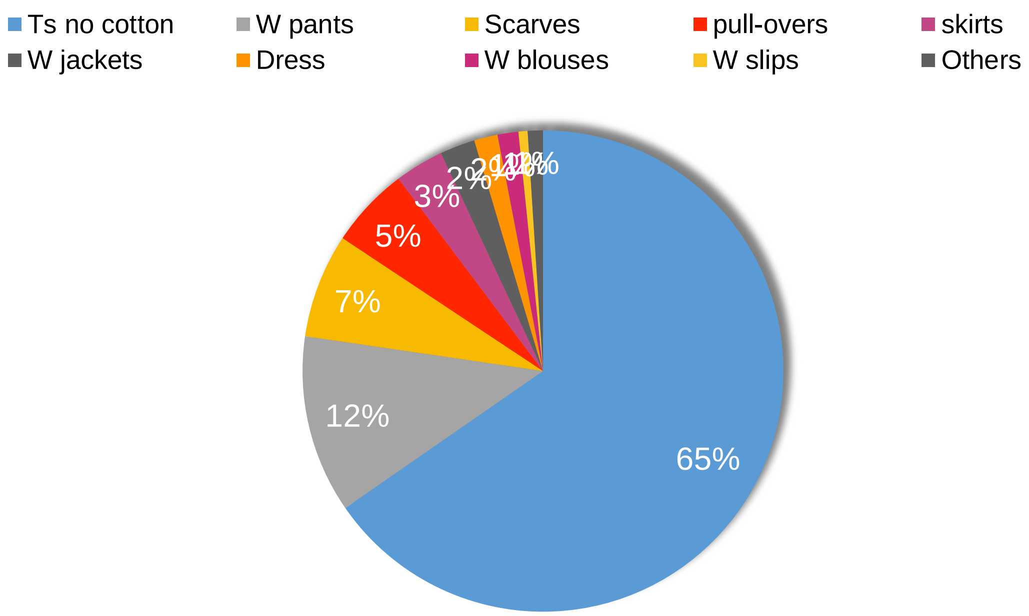
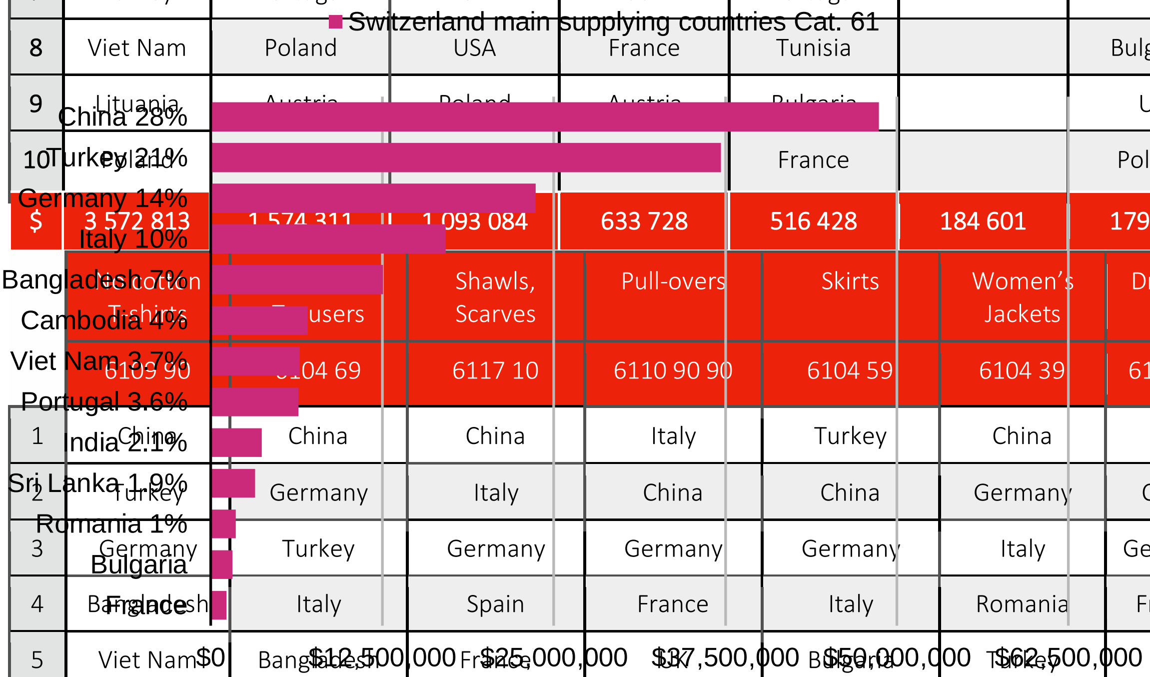


Table 10. Switzerland's 10 main supplier countries for Cat. 61's 14 selected items - year 2019. USD is total imported by Switzerland for each corresponding commodity in USD

Figure 11. Switzerland 10 top supplier countries for Cat. 61 selected population in 2019 - USD (cf. Annex 7

	Blouses	Briefs	M jackets	Gloves	W nightdress	M pyjamas	W. Slips
	6106 90	6108 29	6103 39	6116 99	6108 39	6107 29	6108 19
1	China	China	Italy	China	China	Bulgaria	Bangladesh
2	Italy	Germany	China	Italy	Italy	China	China
3	Germany	France	Spain	Germany	Germany	Italy	France
4	Portugal	Hungary	Germany	Viet Nam	Lituania	UK	Germany
5	USA	Viet Nam	Portugal	UK	UK	Ukraine	Italy
6	Cambodia	Bulgaria	France	Pakistan	Greece	Germany	USA
7	Turkey	Portugal	UK	USA	Portugal		India
8	Viet Nam	Poland	USA	France	Tunisia		Bulgaria
9	Lituania	Austria	Poland	Austria	Bulgaria		UK
10	Poland	[illegible]	[illegible]	[illegible]	France		Poland
$	3 572 813	1 574 311	1 093 084	633 728	516 428	184 601	179 716

	[illegible] cotton T-shirts	Trousers	Shawls, Scarves	Pull-overs	Skirts	Women's Jackets	Dresses
	6109 90	6104 69	6117 10	6110 90 90	6104 59	6104 39	6104 49
1	China	China	China	Italy	Turkey	China	Italy
2	Turkey	Germany	Italy	China	China	Germany	China
3	Germany	Turkey	Germany	Germany	Germany	Italy	Germany
4	Bangladesh	Italy	Spain	France	Italy	Romania	France
5	Viet Nam	Bangladesh	France	UK	Bulgaria	Turkey	UK
6	Italy	Bulgaria	Turkey	USA	Bangladesh	H. Kong	Portugal
7	Cambodia	Cambodia	UK	Turkey	France	Greece	USA
8	Portugal	Romania	India	Romania	Cambodia	Macedonia	Turkey
9	India	Portugal	Bangladesh	Portugal	Romania	Austria	Banglad
10	Sri Lanka	Hungary	Népal	Tunisia	Serbia	Bangladesh	Cambodia
$	167 059 652	30 539 279	17 897 491	13 853 275	8 418 570	6 021 770	4 044 883



Highlights

- China is always either in first or second position

- Italy and Germany are always amongst the top 3 ranked. They are, with Turkey - actually the Swiss' main EU's supplier (see below table 22) - the most important providers of Switzerland. The search for innovative designs, quality, flexibility, easy communication (common language with Germany) are among the main reasons for Swiss buyers to work with Turkish, Italian and German apparels' makers.

- As it can be seen on the chart, Asian players are a minority compared to EU ones; 47.2 % of the selected commodity's group is « made in Asia » against 52.8 % « made in Europe », but the business volumes handled by Europeans are, on average, much less than the ones given to Asian manufacturers.

In other words, Swiss buyers have many partners in Europe but they place relatively small orders there.

They favour proximity, i.e. production places located in a radius that can be reached by plane in less than 2 hours, sometimes by car, that greatly facilitate follow-up and quality control operations and speed-up delivery from the factory to the buyer's warehouse.

- The sub-heading 6117 10 « Shawls and scarves » is interesting.

With USD 17.9 million that accessories' group, which could include some pieces made of silk (100% or blend), is the third most largely imported commodity group among that Cat. 61 selected population. Swiss are importing a lot of scarves.

Even Nepal, one of the least developed country in the world, succeeded in selling approximately 220,000 USD of knitted shawls and scarves to Switzerland, it is still modest but it's a good start.

Equally stimulating is the sub-heading 6104 69 « Women's trousers, bib and brace overalls, breeches and shorts ».

Not only is it the second most imported commodity group of the selection (USD 30.5 million) but also the one with the highest growth rate over the last 5 years (+ 90 %).

The latter 2 products could be an option to be explored for high-end Filipino knitters.

- The non-cotton T-shirts sub-heading 6109 90, by the sheer size of the trading volume it generates (USD 167 million), looks attractive, but in that sector price pressure is extremely high, that's why, among the 10 first key players, 5 are really low labour-cost countries (Bangladesh, Cambodia, Viet Nam, India, Sri Lanka).

Still this is a huge market and innovative proposals for Ts made of new fibres blends at competitive price points may be of interest for some well selected buyers.

Contrary to T-shirts and as the above table shows, out of the top 10 pullovers (Cat. 6110 90 90) suppliers of Switzerland, 8 are Europeans.

For these items, the emphasis is on innovative design and quality rather than price, so Swiss buyers collaborate with high-end Italian, German, French and British flat knit manufacturers, that proximity strengthening and facilitating the qualitative approach.

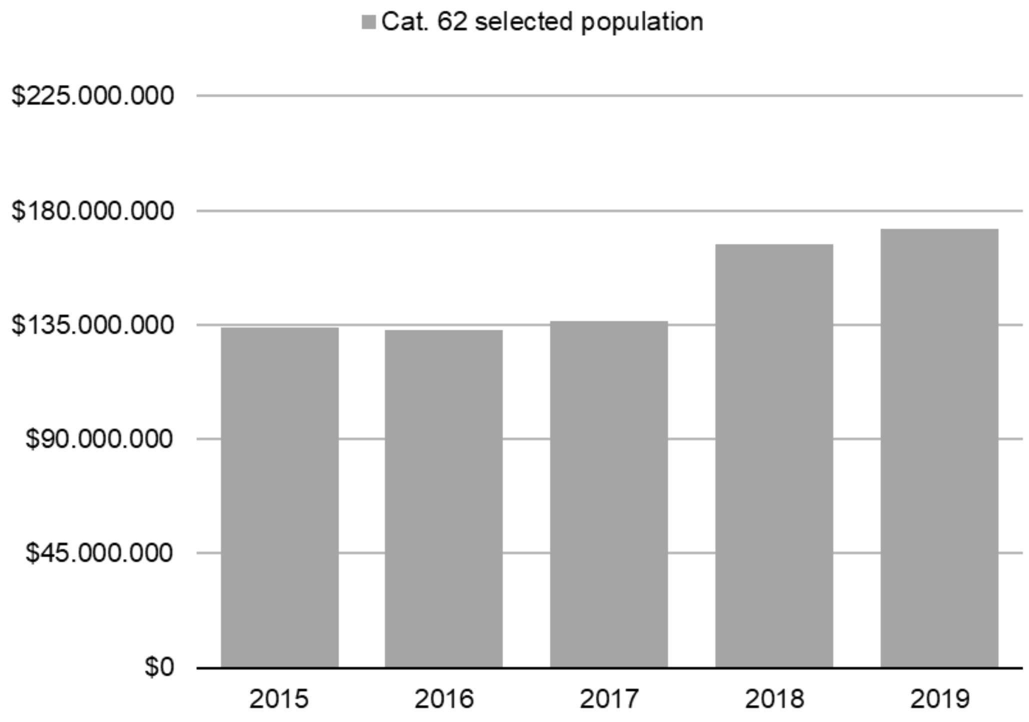
. **Cat. 62** (woven apparels & accessories)

Part of the analysis is based on our Cat. 62 statistical population (cf. par. 2.1.2.1). In that category, we have 5 sub-headings which concern exclusively silk products:

- 6204 59 10: Women's or girls' skirts and divided skirts of silk or of silk waste (excl. knitted or crocheted and petticoats)
- 6204 69 10: Women's or girls' trousers, bib & brace overalls, breeches & shorts of silk or silk waste
- 6206 10 10: Women's or girls' blouses, shirts and shirt-blouses of silk or silk waste, not embroidered, made of lace, nor containing lace (excl. knitted or crocheted and vests)
- 6214 10 00: Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted, of silk or of silk waste
- 6215 10: Ties, bow ties and cravats, not knitted or crocheted, of silk or of silk waste

One part of our statistical search will rely on that type 1 data, but first, to get a global view, we will concentrate on the evolution, over the last 5 years, of the amounts imported by Swiss buyers of Cat. 62 selected population (i.e. 14 commodity groups).

Figure 12. Switzerland imports of Cat. 62 selected population from 2015 to 2019 - USD



Highlights

It has been a steady growth. + 29% in 5 years from USD 134 million to USD 173 million.

Even more interesting is the evolution, in the same 5 years period, of the 5 commodity groups

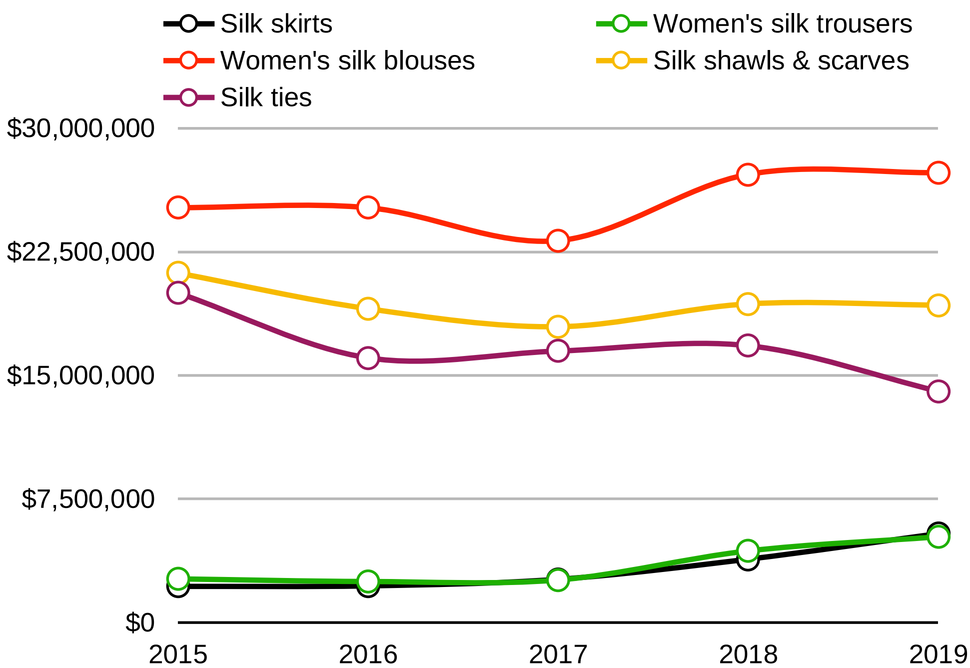
Figure 13. Ratio between the imported value of the 5 silk groups and the imported value of Cat. 62 selected populations (14 sub-headings)

	2015	2016	2017	2018	2019
Imports of the 5 silk groups / Cat.62 selected population	53 %	49 %	46 %	43 %	41 %
Imported value of the 5 silk groups. USD million	71.3	65	62.8	71.5	71.2

specifically made of silk (type 1 data): Women's skirts, trousers and blouses, silk scarves and ties.

As illustrated below these 5 groups of silk apparels and accessories represent an important percentage of the Cat. 62 population global imported value.

Figure 14. Switzerland imports of Cat. 62 silk commodities - 2015 to 2019 - USD



Even if that percentage is declining over the years it is still substantial and represents an average of USD 68 million imports annually.

Let us now see what the respective positions and trends of each silk commodity are.

Highlights

- What stands out is the predominance of the « Women's silk blouses » group (CN 6206 10 10) both in terms of imported value (USD 25 million a year on average) and growth dynamic (+ 8.4 % over the period).
- Silk skirts and silk trousers are following a same very salient upward trend: + 145 % for skirts, + 96 % for trousers
- On the contrary, over the last 5 years, shawls and scarves group have lost 9 % and silk ties 30 % (even in the Swiss banking and finance paradise, suits and ties are losing ground). Still, in absolute terms, the imported amounts remain meaningful: USD 19.4 million on average annually for scarves, USD 16.7 million for ties.

At first glance and on paper these 5 sectors could be seen as potentially very significant for Filipino silk apparels and accessories' manufacturers, but, when knowing who the Swiss clients' main suppliers for that category are, we will have good evidence about the level of quality expected by the buyers.

From there it will be Filipinos suppliers' work to assess their ability to meet or not these requirements, not only qualitatively but also in terms of innovative, fashionable designs, and only them we will know

Table 11. Top10 supplier countries of Switzerland's for the 5 silk commodities of cat. 62 – USD / year 2019; red letters = Asia suppliers / green letters = Africa / black letters = Europe.

Rank	6214 10 - silk scarves		6215 10 - silk ties	
1	Italy	11 261 347	Italy	9 169 492
2	France	4 113 682	China	1 392 600
3	China	1 618 350	France	1 389 898
4	Germany	677 608	Germany	839 247
5	India	543 325	UK	837 205
6	Nepal	203 088	Viet Nam	140 297
7	Belgium	143 382	USA	56 782
8	UK	119 052	Netherlands	53 488
9	Netherlands	100 439	Macedonia	17 115
10	Japan	88 277	Hong Kong	15 276

if they can tap with reasonable chances of success into that potential.

From where is Switzerland importing these 5 silk groups of woven items?

Table 12. Continuation of table 12.

Rank	6204 59 10 Women's silk skirts		6204 69 10 Women's silk trousers		6206 10 10 Women's silk blouses	
1	France	2 019 518	Slovakia	1 203 011	Italy	7 109 065
2	Italy	1 048 441	Madagascar	1 086 170	Madagascar	6 066 500
3	China	725 041	Italy	838 412	China	5 450 286
4	Madagascar	424 895	China	560 207	France	2 509 353
5	Slovakia	171 353	Morocco	262 622	Slovakia	1 681 117
6	UK	140 074	France	186 451	Germany	941 769
7	Portugal	122 460	Tunisia	163 716	Romania	641 782
8	Turkey	120 933	UK	130 134	Portugal	529 990
9	India	114 601	Germany	90 569	Bulgaria	385 403
10	Germany	97 996	Turkey	87 832	Turkey	363 164

Highlights

- Out of 12 top silk apparels supplying countries 9 are from Europe, 3 from Africa and 2 from Asia. For Woven silk finished garments sold to Switzerland, Asian suppliers are impressively absent in spite of silk being a genuinely Asian raw material.

Three main factors are responsible for that dominance of European suppliers:

First, Europe is the continent that has the highest concentration of fashion luxury groups active in apparels and accessories (and also in watches, jewellery, cosmetics etc.).

French groups are dominating that segment.

« LVMH » (France) https://www.lvmh.com is, with 75 houses or labels[37] and a revenue of EUR 53.7 billion in 2019, the world number one. Then come the « Kering group » https://www.kering.com/en/group/ ,« L'Oréal Luxe » https://www.loreal.com/en/loreal-luxe/ for cosmetics, the Swiss Group « Richemont » https://www.richemont.com/our-businesses.html mainly for watches and jewellery but it also owns high-end fashion brands, and finally « Chanel » https://www.chanel.com/en_GB/ for high fashion and cosmetics.

[37] Interestingly enough all these groups, in spite the important number of brands they manage, are all build around a core business, a core brand: « Vuitton » for LVMH, « Gucci » for Kering, Cartier for « RIchemont »

These 5 companies are among the top ten luxury groups.

The family run « Hermès » group (France) https://finance.hermes.com/en/Group-overview/The-Hermes-metiers (nbr. 11 of "Deloitte" luxury groups ranking) is particularly famous for its uncompromising quality and its silk square scarves sold worldwide.

Contrary to France, UK or Switzerland, the Italian fashion industry does not rely on conglomerates (there are of course a few exceptions like the « Luxottica » group http://www.luxottica.com/en specialized in eyewear brands), but rather on families' businesses[38] .

Like their Europeans homologues worldwide famous Italian brands (Prada, Armani, Max Mara, Moncler, D & G, Salvatore Ferragamo, Valentino, Ermenegildo Zegna etc.) are also selling silk apparels and accessories to Swiss retailers.

These fashion labels pertaining to European luxury groups or to family run companies are all using silk in their collections. Switzerland is a country where luxury brands are doing very well (to realize that it is sufficient to walk up and down the 1.4 km of Bahnhofstrasse main street in Zürich which is always among the top 10 most expensive retail locations worldwide).

That partly explains why most of silk apparels and accessories sold in Switzerland are imported from Europe and not from Asia where famous brands are not yet so numerous even if Asian groups are consolidating their position in the field. For example, the « Chow Tai Fook jewellery group » https://www.ctfjewellerygroup.com/en/ (USD 7.3 billion sales in 2020 - year end March 2020) and also more modest groups specialized in silk production such the ones presented in par. 4.2.4.1 of the present survey.

The second reason is that Swiss buyers are extremely demanding on quality at all levels of the apparel or accessory production chain: grey fabric stage, dyed fabric, printed fabric (print quality), pattern making, cutting, sewing, finishing, labelling, packing.

As we will see below some Italian and French silk manufacturers, despite the hardship and all sorts of adversities the European textile industry went through the last 50 years, have maintained a high level of expertise and know-how in silk weaving, printing and fabric finishing. The digital revolution has breathed new life into that sector, especially in printing.

Swiss buyers are sensible to that high-end offer and to the proximity factors which facilitate both the quality control and the import logistic.

Last but not least, EU silk suppliers should abide by European increasingly stringent ethical, environmental and safety standards, that is a crucial factor for Swiss importers as well as end consumers.

- Nepal, Viet Nam, Japan can be found among the top 10 Switzerland accessories suppliers but not as apparels suppliers.

[38] French brands are very much oriented on accessories, Italian are much more focus on ready-to-wear.

One of the reasons for this could be that each country is offering some very particular type of silk, or silk blends or some special textile finishing techniques highly sought after by international accessories designers as long as these proposals fit with their vision and aesthetic.

As mentioned before accessories must be « spectacular », consequently innovation is critical, and in that field some traditional, local, fabrics or techniques can be used, but again they must fit with modern design expectations.

That could eventually be a segment to explore for Filipino silk producers.

2.2.3. Swiss market for fashion items made of abaca, banana and pineapple fibres

Here we come up against the statistical vacuum mentioned in the introduction to this study.

In fact, as far as clothing and fashion accessories made from these three materials are concerned, whether in the countries of the European Union or EFTA countries, there is no customs or statistical source to record imports.

We must therefore rely on other modes of investigation:

- Online research on the websites of Swiss fashion companies.
- Answers to the questionnaire
- Exchanges with colleagues who make up my professional network.
- Meetings with experts

N.B. With these 3 fibres we will find the same problem for all the countries/markets concerned by this study.

We will briefly analyse below the information obtained from these four sources and from there we will try to draw some lessons.

i - Online research

With the exception of the trademark "Qwstion" (see above para. 2.2.1 list of Swiss companies), to which we shall return later and the online shop "K'ness" https://www.k-ness.ch/en/credo/ which has been established in Switzerland to promote Filipino handicrafts, I have not identified, either from the list presented above or by extending the search, any Swiss company using abaca or banana fibres to make fashion clothing or accessories.

For pineapple fibres a few rare Swiss companies, often recent, innovative, created by young people, are starting to use Piñatex®, the famous substitute for animal leather proposed by the London based company "Ananas Anam Ltd" founded by Mrs Carmen Hijosa (https://www.ananas-anam.com/about-us/ we will come back to this).

We can mention the brand "Allure Sauvage" https://alluresauvage.ch/fr/boutique/ . Founded by two young Swiss women, it offers Piñatex® bags made by a leather goods manufacturer in Geneva. « Schenk Swiss Design » https://www.schenkswissdesign.com created by a young Swiss fashion designer, graduated in 2017 at IED Milan, also offers a line of Pinatex bags.

There are probably a few other local brands using this material, but two points are clear: Pinatex® distribution is still extremely limited, design is critical.

Other sources of information confirm this first impression.

ii - Answers to the questionnaire

To the question Q1 « Which of the following 3 fibres did you know had applications in the textile industry? » 15% said they knew the applications of Abaca, 35% of banana fibre, 45% of Pinatex. N.B., it is important to underline that it is only this brand, Pinatex®, corresponding to a specific fabric (imitation leather), that is always mentioned. Other possible uses of pineapple fibre are never mentioned.

On the other hand, to the question Q2 « Have you ever worked with one or more of these 3 fibres, if so etc..? » 100% answered no.

iii - All the colleagues in the trade whom I have consulted confirm that the use of these three fibres is still at a completely embryonic stage in Switzerland, apart from the experience of « Qwstion » and the existence of Pinatex®, both of which are known.

iv - Meeting with the Swiss researcher Mrs Tina Moor

On 3 September 2020, I went to Luzern (Switzerland) to meet Professor Tina Moor, Head of the bachelor's Programme in Textile Design in the Lucerne University of Applied Sciences and Arts.

Professor Moor and her team, in collaboration with Indian partners, have been working for two years on a project[39] aimed at valorising the residues (pseudo stems) left in the field after the banana harvest (here we are talking about Musa sapientum).

Figure 15. Pictures illustrate yarn and fabrics developed by Mrs Moor's team.

[39] All details about Mrs Moor's project can be found here https://iasdr2019.org/uploads/files/Proceedings/ma-f-1217-Moo-T.pdf , https://www.hslu.ch/en/lucerne-university-of-applied-sciences-and-arts/research/projects/detail/?pid=3575 and here https://www.swissinfo.ch/eng/exotic-fibres_why-bananas-could-be-the-fabric-of-the-future/44815992, https://www.hslu.ch/de-ch/hochschule-luzern/ueber-uns/medien/magazin/archiv/2018/10/10/von-der-bananenstaude-zum-teppich/

The results are formidable and very encouraging for the future, they have greatly advanced research in the field and confirm that this fibre has a real potential to replace, in the long term, other much less sustainable fibres such as cotton.

In order to reach this point, in other words succeed in producing attractive yarns for the international fashion industry, yarns capable of convincing both the designers - thanks to their aesthetic qualities (hand feel, appearance, texture, colour range etc.) - but also the production managers - thanks to their technical qualities (ability of the yarn to be knitted and/or woven easily, ability to nicely absorb the dye[40], low pilling level, good colours fastness to light and washing, ease of maintenance etc.) - and finally the buyers and salesmen themselves - thanks to their prices, to the attractiveness of the commercial offer built to promote these yarns - sustainability, compliance, MoQ, delivery times, stock service etc. -, research must be continued and intensified.

The fabrics developed so far, even if very promising, remain rustic, not very refined, they can eventually be used to reinforce composite materials, to manufacture home textile products (floor mats, laundry bags etc..), some accessories (bags), shoes, but the vast majority of international fashion players need yarns (therefore fabrics) more sophisticated and in industrial quantities.

The real creation of added value will take place during the transition to this industrial phase.

According to Ms. Moor, and I completely agree with her, "it will take several more years to get there. This project is only a first step. For this product to make a breakthrough, we need to find strong partners in the countries of production who are willing to invest in experiments and the necessary infrastructure ».

At present, on the Swiss market, in particular, and on the other European markets in general (EU and EFTA), there is virtually no offer of fashion clothing and accessories made of banana fibre.

We can therefore conclude that, with a few exceptions, there is, as yet no Swiss market for textile and clothing products made of abaca, banana and pineapple fibres. The future is very promising, but the present market is still at the embryonic stage.

2.3. Germany

2.3.1. Consumption, market introduction and key players

The 5 largest retail markets for fashion clothing and accessories in Europe are Germany (17%), Italy (14%), United Kingdom (13%), France (10%) and Spain (7%).

With a population of 83.4 million (almost 19% of the EU-27 population / almost 448 million), Germany remains the largest consumer market in Europe - in terms of both population size and purchasing power.

The country also has the highest GDP in Europe (EUR 3,861 billion or almost 25% of EU-27 GDP / USD 15.6 trillion in 2019), with one of the highest total purchasing power (EUR 1,893 billion).

[40] It is already known that these fibers have a very good dyeing affinity and are more resistant than cotton.

In Germany, the fashion market is the second largest (after food products) consumer goods market with a volume of approximately USD 68 billion.

Germany is a mass consumer society. Before making a purchase, beyond the price, German consumers like to learn as much as possible about other similar products, features, provenance etc.

According to some studies, German consumers are among the most demanding in the world. Some consumers are willing to pay more for a better-quality product. Consumer confidence is high (above the average for OECD countries) but has decreased in 2018.

Online shopping has become the norm in Germany and the country is Europe's largest online market.

The apparel market is dominated by women's wear sales (37% of the total sales), followed by men's wear (21%) and shoes (18%). While year-by-year sales growth across most segments is not surpassing the 2% mark, it is to be acknowledged that sportswear is outperforming all other types of clothing with growth rates well over 7%.

German buyers tend to be very price-sensitive and prefer functional fashion over extravagant looks. nothing beats an inexpensive attractive price- performance ratio.

The luxury segment in Germany is strikingly under-represented compared to the rest of Europe.

The overwhelming majority is mainly buying from low to medium priced brands. This is shown by the fact that Germans only spent around € 719 on clothing per person in 2019, compared to Italians spending € 834 and British € 1,133, respectively.

As in the rest of the world, the demands in terms of social and environmental ethics, sustainability and compliance with CSR (Corporate Social Responsibilities) standards are increasing. Ironically, at the present time, only a minority of the consumers is willing to spend significantly more money on fair clothing.

Outsourcing strategies

German fashion Companies usually try to avoid switching suppliers too often because it is such a time and resource consuming process (it takes time to set up a production that takes into account their level of product requirements, to integrate new suppliers into the supply chain as well etc).

Still, roughly one third of all German fashion companies accept those trade-offs.

Too limited production capacities in Europe and the search for more competitive prices are the two main factors behind the decision of German companies to source new suppliers outside Europe (Asia, North Africa, Africa)

The search for new suppliers in Europe is rather dictated by the desire to shorten procurement lead times, to obtain more flexible commercial conditions (in particular lower minimum order levels) and to facilitate production management and quality control operations.

More and more often proximity production, because it greatly reduces the product's carbon footprint, is becoming a marketing argument.

Main information channels used by German buyers to find new suppliers.

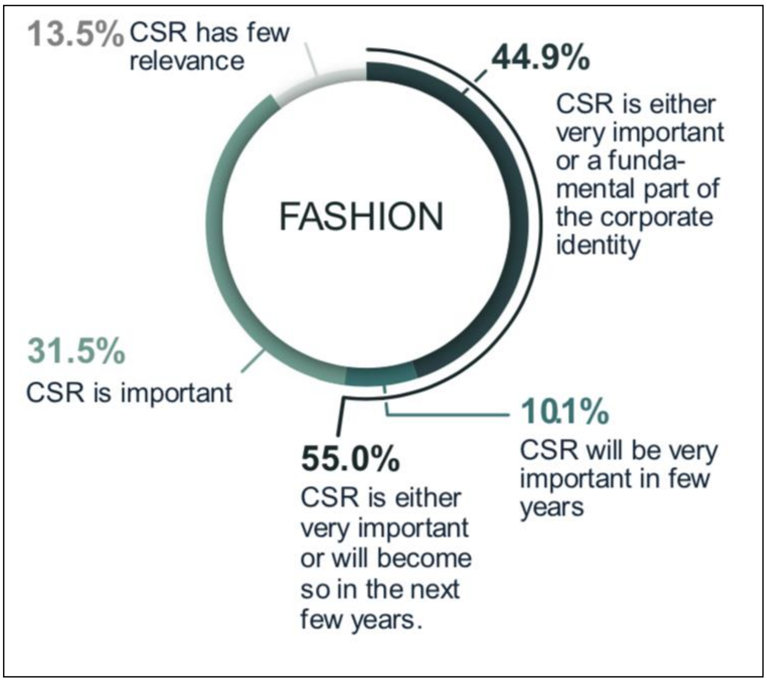
. Peer recommendation:	50%
. Fairs participation:	45%
. Sourcing agencies:	22%
. Existing network:	22%
. Direct enquiries:	12%

Assuming the compliance criteria achieved (see below) and the price already discussed and considered acceptable, the other main criteria for selecting a new supplier can be summarised as follows and in descending order of importance:

. Communication: which covers principles of honesty and rigour (understand perfectly the buyers' requirements and tastes in terms of design, not hiding anything from the buyer about any problems that may arise, communicating clearly and consistently etc.) that are fundamental for German buyers.

. Flexibility: on MoQ and in general

. Compliance with delivery deadlines



. Quality: means strict compliance with all buyer's instructions

CSR (Corporate Social Responsibilities) and other certification issues

The table below shows the importance attached to CSR criteria by German textile and clothing buyers.

Other certifications or codes of conduct widely demanded by German fashion buyers are:

Figure 16. Importance of CSR in Germany textiles industry and consumers, sources: source: SIPPO market survey on Germany / 2019

- BSCI (Business Social Compliance Initiative
- GOTS (Global Organic Textile Standard) support an environmentally friendly and socially responsible textile production
- OEKO-TEX 100 (guarantees toxin-free textile products)
- FAIRTRADE FOUNDATION / cotton (it is about better prices, decent working conditions, local sustainability, and fair terms of trade for farmers and workers in the developing world)

In addition, a large percentage of German companies rely on an in-house code of conduct

Any supplier wishing to try its luck on the German market will have to seriously consider all these factors.

Table 13. A selection of 32 German fashion companies.

32 GERMAN ACTORS IN THE FASHION AND CLOTHING SECTOR		
TRIGEMA	https://www.trigema.de	Germany's largest manufacturer of sportswear and casual fashion
ERIMA	https://www.erima.eu/corporate/brand	One of oldest German sport brand
TAKKO HOLDING GmbH	https://company.takko.com/en-gb.html	Casual fashion for the whole family, about 1,900 stores in 17 countries. 18,000 employees worldwide
EWERS STRÜMPFE	https://www.ewers-struempfe.de	
FINKID	https://www.finkid.de	Women and kids
SEIDEN	https://www.seidel-moden.de	Women's collection
GEORG & OTTO FRIEDRICH	https://www.g-o-friedrich.com/en/news	Famous textile maker. world market leader in knitted polyester materials. Work on eco textiles projects.
GERRY WEBER	https://www.gerryweber.com/en-eu/	Women
BIERBAUM PROENEN BP	https://www.bp-online.com/en/family-business/	Workwear company since 1788
FS FASHION & STYLEGmbH	https://fs-fashionandstyle.com	Brands Kirsten & Apanage
A KIND OF GUISE	https://akindofguise.com	design is contemporary yet timeless, classy yet functional. They only use carefully selected high-quality fabrics and manufacture their pieces entirely in Germany.
CAMEL ACTIVE	https://en.camelactive.com	

ESCADA	https://www.escada.com	one of the world's leading luxury womenswear brands. The group operates in 24 countries, +/- 1,100 points of sale, present in 80 countries worldwide.
ORSAY	https://www.orsay.com/de-de/	Women
HUGO BOSS	https://www.hugoboss.com/uk/men/?select_rd=EN	
SNOCKS	https://snocks.com/pages/team	Socks & underwear
BETTY BARCLAY	https://bettybarclay.com/de/	Several brands, 1400 employees. 33 companies in the Betty Barclay Group GmbH & Co. KG corporate family
JIL SANDERS	https://www.jilsander.com/en-fr/	Own by Group Prada
MALOJA	https://www.maloja.de/collection/index.php	Activewear, Streetwear Women & Men
UCON ACROBATICS		Bags and Backpack since 2001 Sustainable approach; Minimalist design
KARLOWSKY FASHION GmbH	https://karlowsky.de/en/products/	Workwear and protection
HERMANN LANGE	http://www.hermannlange.de/en/welcome.html	one of the oldest German fashion companies. Festive clothing Women
HEMPAGE	https://hempage.com	Use only hemp fibre to make their apparels
FRISUR	https://frisurclothing.com	Berlin based designer, sustainable materials
VOR	https://vor.shoes/about	Very high-end contemporary sneakers
AKRO	https://www.hakro.com	
MARC CAIN	https://www.marc-cain.com/en/home/?lang=1	One of the few German clothing manufacturers that still has its own production facilities in Germany. Use sustainable materials
JOY SPORTSWEAR	https://www.joy-sportswear.de	
MADELEINE	https://www.madeleine.de	important women's brand sold online
BENVENUTO	https://benvenuto-shop.de/about-us/company	Medium-end for Men S. Leithäuser GmbH & Co. KG

GERKE MY PANTS	https://gerke-mypants.de/?lang=en	Gerke AG Family company, specialized in Ladies 'trousers, represented in over 25 countries
ADLER	https://www.adlermode-unternehmen.com/en/company/profile/ https://www.adlermode.com	Adler Modemärkte AG is one of the leading textile retail chains in Germany. The industry magazine TextilWirtschaft ranks the Company 22nd in its Top 100 Ranking for 2018. At the end of December 2019, the Group operated a total of 172 stores, 143 of which in Germany, 24 in Austria, three in Luxembourg and two in Switzerland + One online shop

2.3.2. Imports of silk products

Sub-headings of Cat. 50 silk	2017	2018	2019	2019/2017
				-98.6%
Cat. 5002 Raw Silk	8,241,473	4,192,914	3,609,990	-56.2%
Cat. 5003 Silk waste	8,292,523	10,016,503	7,034,153	-15.2%
Cat. 5004, 5005, 5006 Yarns	12,827,929	16,725,591	7,620,957	-40 %
Cat. 5007 Fabrics	24,732,724	23,135,056	16,013,198	-35.3%

Table 14. German silk imports category 50 from 2017 to 2019 / USD. Evolution over 3 years in % of imported value, source: https://santandertrade.com/en/portal/analyse-markets

CAT 50

Highlights

- The last 3 years German imports of silk category 50 drop drastically.

- Almost USD 20 million less in imported value for the whole Category 50, i.e. a drop of 36%

Table 15. Germany's main supplying countries for silk Cat. 50 – 2019, source: UN Comtrade Database.

Ranking	Country of origin	Imported amount USD
1	China	20 920 037
2	Italy	9 454 347
3	India	2 082 718
4	Switzerland	1 445 594
5	Turkey	427 034
6	France	400 323
7	Thailand	265 459
8	Tunisia	192 987
9	Japan	158 094
10	Austria	138 091
28	Philippines	1 662

Highlight

- The Philippines is an extremely marginal supplier of Cat. 50 silk to Germany with an insignificant volume exported to that country in 2019.

. CAT. 61

We'll focus only on HS number 6106 90 « Blouses, shirts and shirt-blouses; women's or girls', of textile materials (other than cotton or man-made fibres), knitted or crocheted » which may include silk. UN Comtrade Database do not permit to conduct a search based on 8 HS digits which could allow us to detect exclusively silk apparels.

Table 16.Germany's main supplying countries for Cat. 6106 90 – 2019, source: UN Comtrade database.

Ranking	Country of origin	Imported amount USD
	Total German's Imports	7 941 215
1	China	1 544 674
2	Cambodia	1 225 653
3	Italy	1 196 545
4	Turkey	1 054 695
5	France	565 269
6	United Kingdom	425 208
7	Ukraine	396 629
8	Portugal	317 479
9	Poland	232 963
10	India	122 969

Highlight

- The Philippines does not appear on Germany's list of 54 supplier' countries for these knitted apparels category. That means that Germany does not buy any silk knitted Blouses from this country.

. Cat. 62

In that category, we will consider 4 product lines corresponding to the following 4 sub-headings.

. Cat. 6206 10: Blouses, shirts and shirt-blouses; women's or girls', of silk or silk waste (not knitted or crocheted)

. Cat. 6204 49: « Women's or girls' dresses of textile materials (excl. of wool, fine animal hair, cotton or man-made fibres, knitted or crocheted and petticoats) ». So, may include silk dresses coming under sub-heading 6204 49 10: (« Women's dresses, not knitted or crocheted, of silk or silk waste ») unfortunately 8 digits code are inaccessible in UN Comtrade Database

Cat. 6214 10: Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted, of silk or of silk waste

. Cat. 6215 10: Ties, bow ties and cravats, not knitted or crocheted, of silk or of silk waste

Table 17. Germany's main supplying countries for 4 selected Cat. 62 items – imports 2019 in USD, Sources: UN Comtrade

Cat. 6206 10 women's blouses			Cat. 6204 49 dresses		
Rank	Origin	Import USD	Rank	Origin	Import USD
	Total imports	50 271 367		Total imports	100 184 193
1	China	25 780 633	1	China	24 759 984
2	Italy	11 064 481	2	Italy	16 891 177
3	Turkey	1 314 377	3	Poland	7 698 428
4	France	1 287 618	4	France	7 184 269
5	Romania	1 045 207	5	Bangladesh	5 381 550
6	Viet Nam	1 012 647	6	India	4 373 720
7	Bulgaria	902 679	7	Turkey	4 126 239
8	North Macedonia	870 628	8	United Kingdom	2 835 022
9	Switzerland	817 572	9	Myanmar	2 130 766
10	Netherlands	791 894	10	Viet Nam	2 123 907
46	Philippines	3 284	44	Philippines	36 375
Cat. 6214 10 silk shawls & scarves			Cat. 6215 10 silk ties		
	Total imports	29 313 638		Total imports	20 042 802
1	Italy	12 994 152	1	Italy	7 706 644
2	France	7 048 568	2	China	7 205 781
3	China	3 682 162	3	Viet Nam	1 762 285
4	India	2 470 167	4	France	1 673 580
5	Nepal	385 433	5	Netherlands	605 526
6	Belgium	383 139	6	Switzerland	282 279
7	Netherlands	372 344	7	Sweden	235 082
8	Turkey	320 515	8	Tunisia	216 985

9	Switzerland	266 363	9	UK	113 526
10	UK	263 991	10	Poland	96 410
39	Philippines	1 451	Philippines do not appear on the suppliers 'list		

Highlight

- For silk woven accessories (ties, scarves) and for some categories of apparels (blouses & dresses) that may include silk items, the Philippines is either in the last places in the ranking or absent from the list of supplier countries. The country is therefore an extremely marginal supplier of silk woven apparels to Germany.

2.3.3. German market for fashion items made of abaca, banana and pineapple fibres

We find ourselves in the same situation as in the case of Switzerland, the lack of statistics. We will therefore use the other sources of information already presented (cf. above par. 2.2.2.3).

i - Online search

None of the 32 German fashion companies listed above, nor any of the 9 companies in the same country considered to be sustainable (see par. 2.4 below) are using fabrics made from abaca, banana or pineapple fibres.

Still "Piñatex®" fabric performs slightly better. By broadening the research, we can see that the online sales site https://www.ilse-marie.com/english/about-us/ offers handbags and accessories made of pineapple fibre and that internationally renowned brands have also recently started to use pineapple fibres. "Hugo Boss" offers (in limited edition) 100% vegan trainers in Piñatex ®. https://www.hugoboss.com/limited-edition-100-vegan-trainers-in-pinatex®/hbeu50398723_001.html (below picture).

In 2016, the famous German sportswear brand "Puma" developed and sold a line of sport shoes made in Piñatex®.

Today, surprisingly, not only are these products no longer in Puma's catalogue, but Piñatex ® does not appear on the list of sustainable materials presented on the company's official website https://about.puma.com/en/sustainability/product , even though organic cotton (in collaboration with BCI), leather (validated by the "Leather working group » https://www.leatherworkinggroup.com) and Bluesign® certified polyester etc. are available.

Similarly, the Swede "H&M" included a pair of Piñatex ® cowboy boots in its « Conscious Collection » in the summer of 2019, but in 2020 no more products are offered in this material and Piñatex ® is no longer mentioned in the list of fabrics used by the firm. idem with the famous French brand "Sézane" https://www.sezane.com/en

It would be interesting to know why both « Puma », « H&M » and « Sézane » stopped selling these products in Piñatex®, I have no explanation to date, but the fact that "Ananas Anam", the company that produces and distributes Piñatex, states on its website (and has done so since at least August 2020) that their stock is depleted in most of their colours and will probably not be replenished until the spring of 2021, could be a partial explanation.

ii - Questionnaire

The answers to the questionnaire indicated a still limited knowledge of the possible uses of the three fibres within the German fashion and textile community, and a 100% negative answer on the fact of having already used them.

iii - Contacts

According to my German contacts the market for abaca and banana fibres remains almost non-existent and that it is only at the very beginning for pineapple-based fibres.

It would be probably more accurate to write fibre in the singular, since only the registered trademark Piñatex® seems to offer a fabric made from pineapple fibres today.

So even in the case of Germany, the largest European market for textiles and clothing, it is not so easy to find fashion products made with the three fibres we are interested in.

A quick overview of the Scandinavian countries showed a high probability of obtaining the same results.

From then on I decided to go for a different approach: if the « traditional » companies had not yet adopted these three fibres, then, perhaps, the companies claiming to be "sustainable" had done so?

2.4. A new approach for abaca, banana and pineapple fibres

Considering:

- That 100% of the professionals from the 7 European countries who replied to the questionnaire indicated that their companies did not work with these 3 fibres.

- That the presence of these three fibres was, as we have just seen, still extremely weak on the Swiss markets and German markets.

- That my contacts, working for relatively well-known, long-established brands which could therefore be described as « traditional », confirmed the very low presence of these fibres on their fashion market.

It seemed to me indispensable to carry out a final analysis to evaluate the penetration rate of these fibres in the segment of fashion companies labelled as « sustainable ».

If the presence rate of these particularly sustainable fibres in this segment was low, it would be even lower in the more « traditional » (i.e. not openly sustainable) market segments.

I have therefore analysed the textile materials used by the 77 sustainable companies.

Table 18. 77 European brands selling some sustainable fashion products

77 EUROPEAN BRANDS OFFERING DURABLE CLOTHING AND ACCESSORIES	
DENMARK	
CARCEL	https://carcel.co (use Thai silk)
KNOWLEDGECOTTON	https://knowledgecottonapparel.com
FRANCE	
AATISE	https://www.aatise.com/fr/
BALZAC PARIS	https://www.balzac-paris.fr
CAMILLE	https://www.camilleveganbags.com (Use Pinatex®)
COCO FRIO	https://cocofrio.fr
CORALIE MARABELLE	https://www.coraliemarabelle.com
EKYOG	https://www.ekyog.com
L'ENVERS	https://www.lenversfashion.com (French in Spain)
LES SUBLIMES	https://www.les-sublimes.com
MUSE & MARLOWE	https://museandmarlowe.com
SKFK (Skunkfunk)	https://www.skfk-ethical-fashion.com/fr/
VALENTINE GAUTHIER	https://www.valentinegauthier.com
GERMANY	
ARMEDANGELS	https://www.armedangels.com/de-en
CLOSED (Denim & +)	https://www.closed.com (very transparent / their suppliers & partners)
GOODSOCIETY	https://www.goodsociety.org
JAN N JUNE	https://jannjune.com
LANIUS	https://www.lanius.com
PLANT FACED	https://plantfacedclothing.com/collections/unisex
STUDIO JUX	https://studiojux.com/collections/mens
THOKK THOKK	https://www.thokkthokkmarket.com/en

VATTER	https://www.vatter-fashion.com/mann
ITALY	
WUULS	https://www.wuuls.org

THE NETHERLANDS	
A-DAM	https://a-dam.com
KINGS OF INDIGO (Denim)	https://www.kingsofindigo.com
KUYICHI (Denim)	https://kuyichi.com
MUD JEANS (Denim)	https://mudjeans.eu/about/
NOUMENON	https://nou-menon.com
RHUMAA	https://www.rhumaa.com
POLAND	
ALEXANDRA	https://www.alexandrak.co (Use Pinatex®)
SPAIN	
ALL SISTERS	https://www.allsisters.com
ECOALF	https://ecoalf.com/es/p/materiales-80
LIFEGIST	https://www.lifegist.es
THINKING MU	https://thinkingmu.com/en/
TWOTHIRDS	https://twothirds.com
SWEDEN	
ASKET	https://www.asket.com
BITE	https://bitestudios.com
DEDICATED	https://www.dedicatedbrand.com/en
FILIPPA K	https://www.filippa-k.com/en
HOUSE OF DAGMAR	https://www.houseofdagmar.com
LINDEX	https://about.lindex.com/about/
MASKA	https://maska.se/en/

NUDIE JEANS CO.	https://www.nudiejeans.com
STUDIO HEJNE	https://www.studioheijne.com (Use Pinatex®)
WEEKDAY (Part of H&M)	https://www.weekday.com
SWITZERLAND	
CARPASUS	https://carpasus.com
PURA CLOTHING	https://www.puraclothing.com/?v=11aedd0e4327

UNITED KINGDOM	
ALTIIR	https://www.altiir.com (Use Pinatex®)
A PERFECT NOMAD	https://www.aperfectnomad.com
ARKITAIP	https://arkitaip.com (100% EU linen)
B BOHEME (shoes)	https://bboheme.com (Use Pinatex®)
BEAUMONT ORGANIC	https://www.beaumontorganic.com
BIBICO	https://www.bibico.co.uk
BOWER SWIMWEAR	https://www.bowerswimwear.com
BROTHERS WE STAND	https://www.brotherswestand.com
CLEMMIE ROSE	https://www.clemmierose.com
COSSAC	https://cossac.co
KOMODO	https://www.komodo.co.uk
KTO KNOW THE ORIGIN	https://knowtheorigin.com
LUCY & YAK	https://lucyandyak.com
MANDKHAI (cashmere)	https://www.mandkhai.com/shop
MASHU (Bags)	https://mashu.co.uk/shop (Use Pinatex®)
MOTHER OF PEARL	https://motherofpearl.co.uk
NAVY GREY	https://navygrey.co
NINETY PERCENT	https://ninetypercent.com

NOCTU	https://noctu.co.uk
PEOPLE TREE	https://www.peopletree.co.uk
RAEBURN	https://www.raeburndesign.co.uk
PO ZU sustainable footwear	https://po-zu.com (Use Pinatex®)
RAKHA	https://rakha.co.uk
RILEY STUDIO	https://riley.studio
RIZ BOARD SHORTS	https://www.rizboardshorts.com
SABINA	https://www.sabinna.com
SSONE	https://ssone.com
TALA	https://www.wearetala.com
THOUGHT	https://www.wearethought.com
VANESSA VINHAS	https://www.vanesavinhas.com

The analysis of the textile materials used by these 77 sustainable companies to make their clothes and accessories shows:

- That only 7 brands are using Piñatex®. (They can be identified in the table by the mention « Use Pinatex® »)
- That not a single one of the 75 brands uses abaca or banana fibers. The most commonly used sustainable materials are listed in Annex 9)

This result forcefully confirms three points that are absolutely fundamental to this study:

a) Abaca and banana fibers are not, to date, used by the European fashion industry. Pineapple fibers are used very timidly and only through Pinatex® fabric.

b) The market for sustainable fashion clothing and accessories is growing, with more brands and initiatives across Europe.

c) The demand for organic silk, which is still relatively low but growing, remains unsatisfied (e.g. Nudies Jeans). On the one hand because of the low production, but above all because of the lack of clear and internationally accepted norms and standards to define precisely the criteria that make a silk organic.

This state of affairs generates a very important demand for new sustainable and/or organic materials.

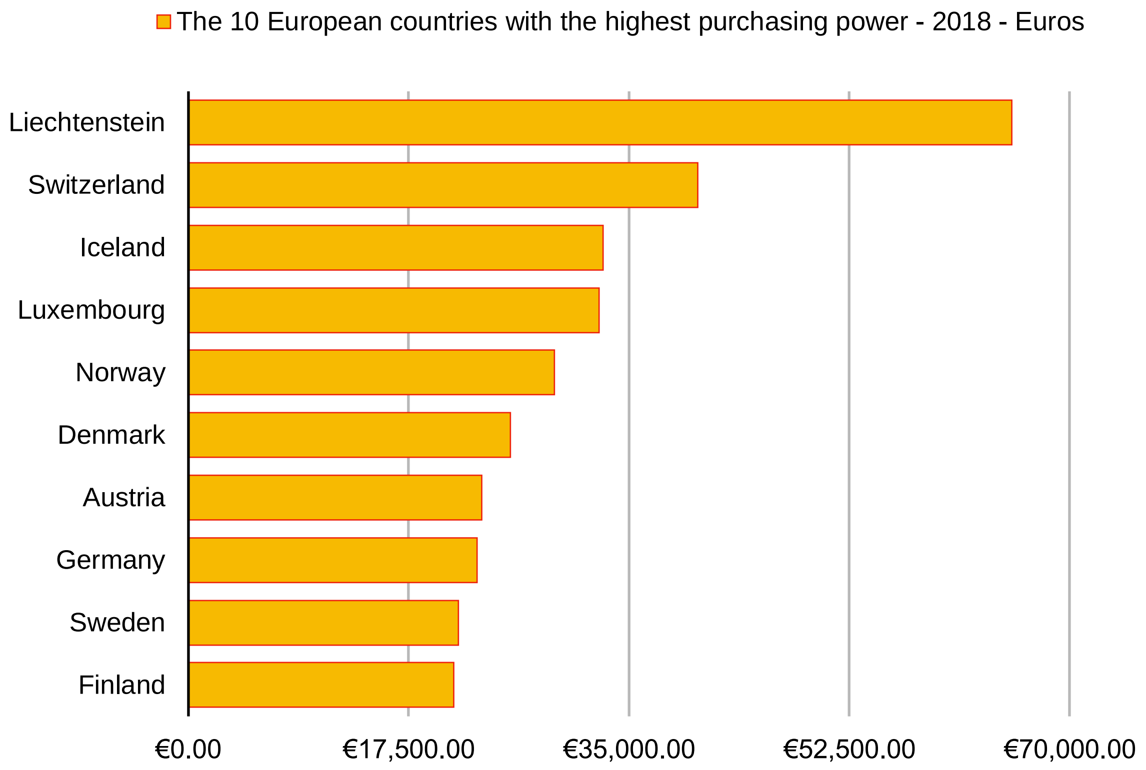
If yarns and fabrics, perfectly meeting the aesthetic and technical expectations of designers and buyers - and this is where the real challenge lies - are developed from abaca, banana and pineapple fibres, then they will have every chance of gaining access to the EU market, the world's largest clothing import market (520 million consumers, 84 billion Euros of imports in 2018).

2.5. Scandinavian markets

Although there are cultural differences between the Scandinavian countries, they share many common values and behaviours, especially in the business field. We have therefore opted for a general introduction to the main characteristics of the Scandinavian markets.

Denmark, Iceland, Norway and Sweden are among the 10 European countries whose consumers have the highest purchasing power.

Figure 17. The 10 European countries with the highest purchasing power, 2018 in Euro.



Three fundamental values for Scandinavian buyers

i - CSR and sustainability is highly incorporated in the sourcing process

The companies inspect the supplier's commitment to eventual initiatives and held certifications, but also conduct visits to fully ensure a great engagement in the CSR work. Some countries have come further and have higher requirements regarding CSR and sustainability, with Swedish and Norwegian companies in a leading position.

The increased focus on CSR and sustainability have forced all companies to reduce their number of suppliers.

ii - Honesty and transparency is of greatest importance together with producing good quality.

All Scandinavian companies prefer to solve problems and develop both the relationship, the brand and the factories together with their suppliers.

Producing good quality is never compromised with and besides the fit and feeling of the garments, durability (i.e. long wear life of the garment) is a great part of the definition of quality.

It is appreciated to work with suppliers skilled in design and handling materials in a cooperation built as a partnership.

iii - « Success is all about networking »

The most effective business approach with Scandinavian companies is networking.

For local brands the most common way to find new suppliers is through recommendations as well as bringing contacts and experiences from earlier workplaces.

All companies constantly receive emails with request about cooperation, but most do not find it worth the time and effort required to sort out the reliable and relevant suppliers.

It is highly valued to meet the suppliers in person with a chance to examine their produced product. Organized well planned networking events could be recommendable.

Other key Characteristics of the Scandinavian markets

Sourcing responsibility and process for selecting new suppliers

The sourcing process is demanding, and the companies prefer to go through recommendations to avoid risks.

Approximately 50% of the Scandinavian companies have a production office located in their supplier's countries. These local branches are responsible for regularly visiting the factories to carry out CSR audits and quality control operations and for sourcing and assessing potential new suppliers.

So, going to the company's headquarters in Europe to try to approach a Scandinavian buyer can be completely counterproductive. It is often necessary to look for liaison offices in the countries or geographical areas (Asia, Africa etc.) where the company is already working.

Working with agents in the country of production is an alternative to local production offices. Contact goes in those cases solely through the agents and not directly with the factories.

The final choice of suppliers, or the decision to continue or discontinue collaboration with an existing supplier, is made by the head office.

The most common way to find new suppliers is by peer recommendations. When searching for new suppliers, Scandinavian companies tend to pay a particular attention to manufacturer's client's portfolio. It will be even more appreciated if the factory already has some Nordic clients.

The process of selecting a new partner can be long, more or less one year. This is why, rather than embarking on a campaign to find new suppliers, the Scandinavian buyer will always prefer to try to resolve any difficulties he may have encountered with the existing supplier. The customer will then evaluate the quality and reliability (adherence to delivery dates, export documentation etc.) of the supplier for one or two more seasons before placing larger orders.

The precondition for launching any selection process is that the candidate supplier genuinely brings something special, even unique, to the Scandinavian customer. The quality and creativity of the offer (USP) is a fundamental criterion.

The reduction in the number of suppliers

The priority given to sustainability and respect for social and environmental standards has led most Nordic companies to reduce the number of their suppliers by about 25% over the last 10 years.

In a not-so-distant past, it was quite easy to change suppliers in order to obtain better prices or lower minimum orders.

Today, the requirement to meet increasingly demanding standards often requires the buyer and supplier to work very closely together on programmes to change production and supply chain management processes, programs which can be complex and time-consuming to implement.

As a result, changing suppliers becomes much more complicated, costly and risky. Buyers will prefer to invest these efforts in strengthening and improving an already existing collaboration.

As a result, the entry ticket to access the market is much more difficult to obtain for new applicants.

CSR, sustainability, certifications, codes of conduct

Scandinavian's companies have high requirements on CSR and sustainability and there is a strong will to constantly improve the suppliers' level in that field.

CSR and sustainability are highly prioritized and a significant part of the sourcing process.

Social compliance is for most companies a basic requirement. Equally important is the desire to reduce water consumption, to drastically curb polluting discharges and to promote the use of renewable materials in production processes.

The transparency of the supply chain in order to obtain a better traceability of the product is another crucial requirement for Nordic clients, this is a requirement that is not always easy for the producer to manage.

Most companies are engaged in improving the CSR and sustainability's levels for their current suppliers, in this case the mutual and truly pro-active commitment of both parties is fundamental.

It is common for Scandinavian companies to use the BSCI (see par. 3.3) recommendations as a basis for developing in-house codes of conduct.

Many of the Norwegian companies are members of the EHN « Ethical Trade Norway » (cf. below).

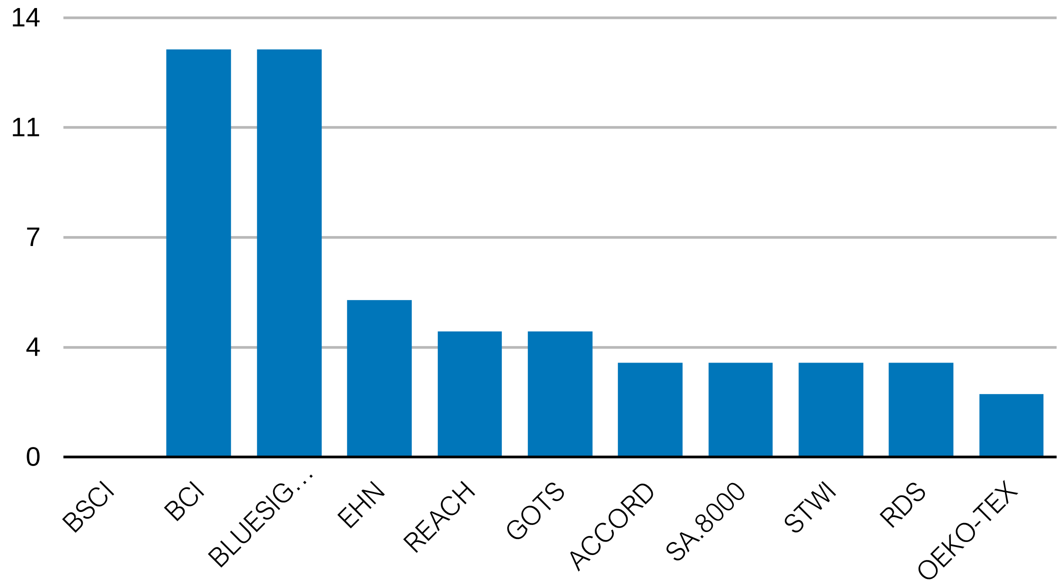
Sportswear brands, of which there are many in Scandinavia where they enjoy a generally non-usurped reputation for quality (e.g. « Helly Hansen »), quite regularly call on the services of « Bluesign technologies ag » https://www.bluesign.com/en , a company based in St. Gallen, Switzerland, to optimise the sustainability of their production processes (see par. 3.3)

A large proportion of local fashion companies focus on BCI certification and compliance with REACH regulations (see par. 3.3). Finally, some brands, in particular the ones belonging to the « Varner group » (see below par. 2.8.1 table 47), refer to the Nordic Ecolabel (see below) which has some of the strictest requirements worldwide.

The below table is illustrating the certification bodies, standards, regulations etc. most commonly used and/or required by the Scandinavian's buyers. (Results of interviews conducted in 2018 with 49 Scandinavian companies by a Swedish consultancy firm commissioned by SIPPO).

Figure 18. Main certification bodies, standards, regulations etc. used by Nordic buyers.

N.B. For organisations whose acronyms are not specified below, please refer to par. 3.3 « Certifications »



BCI	Better cotton Initiative - https://bettercotton.org/about-bci/
EHN	Etisk Handel Norge / Ethical Trade Norway - https://etiskhandel.no/en/
STWI	Sweden Textile Water Initiative - https://stwi.se/about/
ACCORD	Accord on Fire and Building safety in Bangladesh - https://bangladeshaccord.org
RDS	Responsible Down Standard - https://responsibledown.org
NORDIC ECOLABEL	http://www.nordic-ecolabel.org

2.5.1. Scandinavian's imports of abaca, banana and pineapple fibres and derivatives

i - The analysis of the textile materials used by the 45 Danish companies, the 12 Icelandic companies, the 26 Norwegian companies, the 46 Swedish companies and the 5 Dutch companies (which are also part of Northern Europe and can therefore be taken into account) presented in this study shows that not one of these actors in the sector uses abaca, banana or pineapple fibres to make its clothing or fashion accessories.

ii - The answers to the questionnaire point in exactly the same direction.

None of the Danes, Norwegians and Swedes interviewed responded by saying that their companies use these textile fibres.

Their answers also show that the Nordic fashion industry still has a relatively limited knowledge of these materials: 20% and 45% of them had heard about the possible textile applications of abaca and banana fibres respectively. More than 50% knew about Piñatex® (but only Piñatex®).

iii - Furthermore, it can be seen that the results of this analysis totally coincide with the findings presented in paragraph 2.4 above, where it was shown that none of the 77 European fashion companies distributing sustainable clothing and accessories used abaca or banana fibres and that only 5 of them, i.e. 9%, used Piñatex®.

iv - Finally, online research confirms this result.

We can therefore state with a fairly high degree of certainty that the Scandinavian countries considered in this study, and the northern European nations in general, do not currently import any fashion fabrics or garments made of abaca or banana fibre.

As far as pineapple fibre is concerned, only the registered fabric brand Piñatex ®, made from pineapple pseudo-stems, is known by part of the fashion industry. However, clothing and fashion accessories made from this material still only account for a very limited part of the overall textile and clothing market in Europe and are often distributed in niche markets through brands reaching a very limited number of customers.

N.B. Consequently, in the presentations of the Scandinavian countries that we will develop below, we will not return to the question concerning the market share of these three fibres.

2.6. Iceland

N.B., we have considered that 1 ISK (Icelandic Kröne) = 0.00732 USD (exchange rate of August 2020). So, all the amounts concerning Iceland imports are always given in USD.

All statistics come from https://www.statice.is (Statistics Iceland)

2.6.1. Consumption, market introduction and key players

It is surprising to see how such a small country (365,000 inhabitants) and market can have so many designers and fashion companies. Icelanders are very fashionable and creative.

Perhaps because they are neither weighed down nor rigidified by a powerful and somewhat intimidating fashion past (as in Italy or France), perhaps also because it is important, in such a small society where everyone, more or less, knows each other, to stand out rather as much as to fit in.

Finally, the high level of culture, education and openness to the world of Icelanders (it is common for a local to speak 2 or 3 foreign languages, in particular Nordic, Danish, Norwegian, Swedish and even German), the fact that this is the country with the highest gender equality in the world, that homosexual communities and other sexualities are totally accepted, all this encourages and promotes creativity without taboos, hence the sometimes-surprising creations that can be found there.

Table 19. Icelandic fashion actors, a selection.

12 ICELANDIC ACTORS IN THE FASHION AND CLOTHING SECTOR		
ASTA CREATIVE CLOTHES	http://www.astaclothes.is/new-gallery-3	Artist and designer, do kind of experimental clothes using natural fibres (silk, bamboo, horsehairs etc.)
EYGLO	https://www.eyglocollection.com	Won the fashion design of the year 2016. Uses a large variety of fabrics and many prints
FARMERS and FRIENDS	https://www.farmersmarket.is	Kind of traditional, old style apparels, island (tweed) touch. Their choice of fabrics is « old school », with a focus on sustainability.
GEYSIE	https://geysir.com/collections	Traditional, medium to high-end apparels, good in knitwear
HILDUR YEOMAN	https://hilduryeoman.com	Use Icelandic handcraft technics Only Women's collection Sustainability very important for the Cie. Work with small factories in Estonia. Make sure that social standards are respected by its suppliers. Use a lot of printed fabric and some rich, fancy fabrics adorned with sequins and printed sequins Mostly work polyester, viscose but sometime silk (cf. The Galaxy Bohemian dress)
KIRSUBERJATRÉO (The Cherry Tree)	https://www.kirs.is	An Icelandic Design store run by 11 female artists. The house is full of local art and handicrafts which is designed and created locally by the artists. Products include bags and purses from fish skin, magical music boxes, lamps and baskets, cushions

KIOSK	https://kioskreykjavik.com	Multi designer’s shop. Kiosk, voted the best place to stock up on local Icelandic fashion by Grapevine Magazine consecutively for 7 years. Kiosk is a co-op shop owned by 4 Icelandic designers.
KRON KRON	https://kronkron.com	Line of shoes, especially espadrille, using sometime natural fibres (rafia, silk). Shoes are handcrafted in Portugal and Spain Use a lot silk (plain, printed) for their dresses, skirts, trousers, scarves Their moto: « Our wish is to be fresh, fun but at the same time we take our work seriously »
MILA SNORRASON	http://millasnorrason.com/about	Only one collection annually, it is essentially a European brand with all production within the continent and knitwear made in Iceland using Icelandic free-range wool. Is concerned with using natural materials and supporting local and ethical production in a slow fashion manner.
MORA	https://morra.is	Founded in 2018. Printed silk scarves and a few apparels` Inspired by Icelandic nature
MYRKA	https://myrkaiceland.com	Sustainable hand dyed dresses (fabric is TENCEL®, a branded lyocell fiber that comes from the pulp of trees). Designer, Harpa Einarsdóttir Use craftsmanship, base their work on socially and environmentally conscious clothing.
STEINUNN	https://shop.steinunn.com	Is as much an artist as a designer of knitwear, for this reason has a studio/shop. Offers a large range of knitted accessories (hats, mittens, scarves, leg warmers, etc. mostly made of super fine merino wool or felted wool. A lot of work on designs

2.6.2. Iceland's imports of silk products from the Philippines

i - The last 5 years (2015 - 2019) Iceland imported nothing of Cat. 50 (silk cocoons, raw silk, silk waste & silk yarns) from the Philippines.

The last 2 years (2018, 2019) out of our selected population of 14 commodity groups from Cat. 61 (knitted or crocheted apparels) susceptible to include silk items, only 5 have been imported by Iceland in quantities that are insignificant (USD 3,506 of imports in 2 years[41])

For Cat. 62 (Woven apparels) the situation is similar. Out of 13 selected commodities only 3 have been imported for very low amounts (in 2 years USD 2,400 of dresses, USD 13,500 of trousers) but there is one exception: USD 107,298.00 of cat. 6205 90 « Men's or boys' shirts, of other textile materials (Excl. cotton, man-made fibres) » have been imported by Iceland in 2019, 16 times more than the previous year (USD 6880 in 2018)

There is nothing to add, except may be a quick look at the trend of Icelandic imports for the entire category 61 and 62 over a five years period.

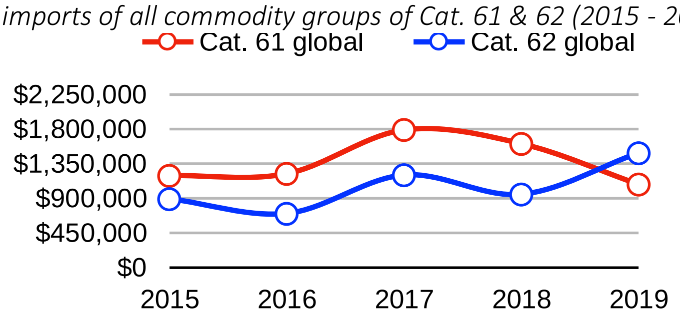
Figure 19. Evolution of Icelandic imports of Cat. 61&62 (global) from the Philippines

Highlights

- A strong downward trend is apparent for knitted items as well as a sharp up trend for woven items.

The issue is whether these trends are following a global Icelandic inclination to reduce drastically worldwide imports of all groups of commodities pertaining to Cat. 61 and to bring in more Cat. 62 products groups or, on the contrary, it has something to do with Philippines only. The following table is showing Icelandic imports of all Cat. 61 & 62 commodity groups over the past 5 years.

Figure 20. Icelandic imports of all commodity groups of Cat. 61 & 62 (2015 - 2019) - USD



[41] In 2018: 6104 69 Women's trousers - $ 252 / 6109 90 01 T.shirts of silk - $ 704 / 6110 90 Pull-overs - $ 51 / 6117 10 shawls - $ 215. In 2019: 6109 90 01 Ts - $ 1,873 / 6116 99 00 gloves - $ 411

Clearly Icelandic imports of Cat. 61 in its entirety shows a consistent and important growth rate over the last 5 years (+ 46 %), so the downward trend observed with the imports from the Philippines of Cat. 61 selected population is situational, involving decisions of local Icelandic buyers to reduce their purchases from Manila.

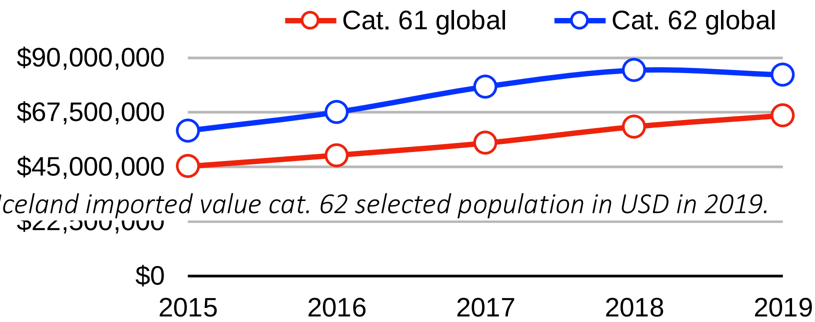
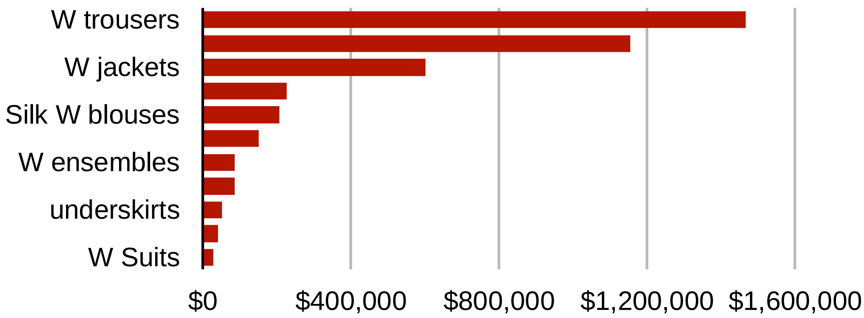


Figure 21. Iceland imported value cat. 62 selected population in USD in 2019.

In light of the above I would say that silk woven items are certainly offering a better prospect than knitted ones on the Icelandic market, even if quantities, due to the small population of the country, will always remain modest. In this regard, it would be interesting to know what the composition of the men's shirts (see above) imported in 2019, was, unfortunately that information could not be found.

2.6.3. Imports of silk products from the rest of the world.

. Cat. 50



Iceland imports of silk cocoons, raw silk, yarns and fabrics is very small (USD 41,507.00) in 2019), here are the supplying countries for this group of commodities.

Table 20. Icelandic Cat. 50 imports and main supplying countries - Year 2019 – USD.
In red the Asian countries.

	5001 Silk cocoons		5002 Raw silk		5004 - 5005 - 5006 Yarn		5007.10 - 5007.20 - 5007.90 Fabric	
1	UK	2141	Denmark	1 713	USA	11757	Germany	6 247
2	USA	1014	Italy	210	Thailand	1527	UK	4 812
3	Spain	123			Switzerland	1387	Denmark	2 111
4					India	884	India	1 430
5					Germany	732	China	1 255
6					Japan	140	Belgium	967
7					China	138	France	592
8					Denmark	90	USA	1 497
9					Poland	66	Italy	509
10							Netherlands	165
	USD 3,278 7.8 %		USD 1,923 4.6 %		USD 16,722 40.3 %		USD 19,584 47.3 %	

Highlights

- Icelandic companies are importing 88 % of their silk from the Western world (USA, EU) with Nordic European countries (Germany, UK, Denmark) playing an important role. Proximity seems important.
- Only 3.3 % of that category is imported from China.

This Icelandic Cat. 50 group is a much too small market with almost no potential for new entrants like the Philippines.

. Cat. 61

Among Icelandic statistical tables we have identified 8 items from Cat. 61 explicitly made of silk, the analysis of Cat. 61 silk imports is based on these 8 commodities.

- 61059001 – Mens’ or boys’ shirts, knitted or crocheted, of silk
- 61069001 - Women's or girls' blouses and shirts, knitted or crocheted, of silk
- 61071901 – Mens’ or boys’ underpants, knitted or crocheted, of silk
- 61072901 – Mens’ or boys’ nightshirts and pyjamas, knitted or crocheted, of silk
- 61081901 - Skirts and divided skirts, knitted or crocheted of silk
- 61082901 - Women's or girls' underpants, knitted or crocheted, of silk
- 61083901 - Women's and girls' nightdresses and pyjamas, knitted or crocheted, of silk
- 61099001 - T-shirts, singlets and the like, knitted or crocheted of silk
-

Table 21 - Icelandic Cat. 61 selected population’s main supplying countries - Year 2019 – USD, total per category in USD, Red letters = Asian supplying countries

	61059001	61069001	61071901	61072901	61081901	61082901	61083901	61099001
1	Poland	Denmark	Norway	China	Italy	Latvia	Denmark	Germany
2	Lithuania	UK	Lithuania		UK	Viet Nam	Poland	Bangla-desh
3	Russia	Bulgaria	Bangla-desh		Denmark	Bangla-desh	China	Italy
4	Latvia	China	China		China	China		UK
5	Sweden	USA	Sweden		France	Finland		China
6	Viet Nam	Switzer-land	Viet Nam			Lithuania		Turkey
7	UK	India	Bulgaria			UK		Sweden
8	USA	Bangla-desh	Sri Lanka			Sri Lanka		Lithuania
9		Sweden	Turkey			USA		Cambodia
10			Germany			Turkey		USA
$	23 483	11 393	40 900	149	20 899	13 308	26 402	293 442

- Out of a total of USD 429,976 imported for these 8 commodity groups 70% is coming from Europe and only 27 % is from Asia (on average)

- Interestingly enough, even in the T. shirts' group (the most important in value) Asian suppliers accounts for only 30% of the imports. Ts' market being highly competitive buyers are usually searching for the lowest possible prices, this is not really the case here, the silk Ts are mostly bought from German, Italian and British suppliers, so prices cannot be cheap.

An important proportion of these imports certainly comes from Icelandic retailers buying silk T-shirts from famous Italian, German or Danish brands but it could also be Icelandic designers and local fashion companies placing production orders to Italian T-shirts factories, attracted by Italian's suppliers creativity, flexibility (e.g. example small series productions of digitally printed silk T-shirts in various designs and colourways), commitment and quality but also the proximity which allows to reduce the product's carbon footprint and makes it more sustainable.

Again, if some suppliers located in Europe, relatively close to Iceland, are offering a genuine added value, Icelandic's buyers will be ready to pay the price and will only go to Bangladesh or Vietnam for larger orders, simpler styles and of course very competitive prices.

This brings us back to a classical alternative: cheap prices vs. added value. If a potential supplying country cannot (because its monthly wage for garments workers is too high, or its productivity insufficient etc.) offer competitive prices to international buyers it will have to offer added value in design, quality, flexibility or an attractive combination of these different factors.

Silk Cat. 61 Icelandic market is of limited interest, the only item that may offer some opportunities is T-shirts. Now the question is to know if Philippines can offer prices or added value?

. Cat. 62

In that category type 1 data (sub-headings explicitly mentioning silk) is rare (only 3: silk women's blouses, silk scarves and silk ties), so, to assess Icelandic import's pattern in Cat. 62, we will rely mostly on generic groups, i.e. « apparels of other textile materials » which means « excluding wool or fine animal hair, cotton and synthetic fibres » if not otherwise indicated.

- 6204 69 00 - Women's and girls' trousers, of other textile materials
- 6204 49 00 - Dresses of other textile materials
- 6204 39 00 - Women's and girls' jackets, of other textile materials
- 6215 10 00 - Ties, bow ties and cravats of silk
- 6206 10 00 - Women's or girls' blouses and shirts, of silk
- 6204 59 00 - Skirts and divided skirts of other textile materials
- 6204 29 00 - Women's and girls' ensembles, of other textile materials
- 6214 10 00 - Shawls, scarves, mufflers, mantillas, veils and the like, of silk
- 6208 19 00 - Underskirts and divided underskirts of other textile materials
- 6208 29 00 - Nightdresses and pyjamas of other textile materials
- 6204 19 00 - Women's suits and pantsuits, of other textile materials (excl. man-made fibers)
- 6207 19 00 – Men's or boys' underpants, of other textile materials (excl. cotton).
- 6207 29 00 – Men's nightshirts & pyjamas, of other textile materials (excl. cotton and man-made fibers).

Let us see which are the main supplying countries for the top 8 commodity's groups of that cat. 62.

Table 22. Icelandic cat. 62 selected population's main supplying countries, 2019, in USD, red = Asian countries, W= women

	62046900 W trouser	62044900 Dresses	62043900 W jackets	62151000 Silk ties	62061000silk blouse	62045900 Skirts	62042900 ensemble	62141000Silk shawl
1	China	China	China	Italy	China	China	China	China
2	France	France	France	China	Denmark	India	France	Portugal
3	Latvia	UK	UK	UK	Italy	France	UK	Italy
4	Turkey	Italy	Turkey	Poland	UK	Turkey	Taiwan	UK
5	UK	India	Netherlands	Sweden	Morocco	Sweden	Denmark	India
6	Italy	USA	Denmark	USA	Romania	Lithuania	USA	USA
7	Denmark	Netherlands	Romania	Germany	Hong Kong	Denmark	Estonia	Denmark
8	India	Romania	Viet Nam	Viet Nam	Portugal	USA	Germany	France
9	Bulgaria	Denmark	USA	France	Serbia	UK	Spain	Ukraine
10	Poland	Sweden	Portugal	Denmark	Germany	Romania	Italy	Germany
$	1 467 056	1 156 212	602 769	227 326	207 685	151 719	85 905	85 894

Highlights

- Trousers and dresses are by far the most demanded items
- Silk ties and blouses, with respectively USD 227,326 and USD 207,685 of imported value are doing well in such a sparsely populated country.
- The woven items category, contrary to the knitted one, is overwhelmingly dominated by Chinese imports. China is the number one supplier for 7 commodity groups out of 8.
- Other Asian suppliers only play a minor role.
- In Europe, it comes as no surprise that key players are France, UK and Italy mostly because of the strength of their local fashion brands but also, in the case of silk, for their expertise in the area (see below par. 4.2.4.2 & 4.2.4.3)
- Icelandic Cat. 62, even if more attractive than the previous Cat. 61, remains a rather limited market. Women's trousers and dresses may offer some opportunities with good fabrics (may be silk blends), silk ties, blouses and shawls are small but may offer very on time opportunities for very innovative or special products.

2.7. Denmark

Denmark is a major hub of Northern European fashion, and is also a pioneer and one of the most demanding countries in the world in the field of sustainable production of fabrics and clothing, as the article below from "Vogue Business" makes clear (https://www.voguebusiness.com/fashion/copenhagen-fashion-brands-withstand-instagram-test-of-time)

Copenhagen-based fashion brands were first movers on sustainability and can authentically communicate an eco-friendly message that customers are paying attention to. The country's reputation for eco-friendliness means that homegrown labels have long had access to resources and guidance.

"[Sustainability is] ingrained in the Danish culture," says DH-PR's Daisy Hoppen http://www.dh-pr.com/about . "It's most definitely not a trend but part of a lifestyle and ultimately, something that is rooted in their brand identity.

The Danes focus on creating financially and stylistically accessible clothing, fits in with the industry's growing egalitarianism".

As a small country, Denmark, like the Netherlands, has relied on foreign trade to create wealth and has been a major centre of international trade for centuries.

Fashion is no exception. European fashion players, especially those from Northern Europe (Scandinavians, Germans etc.) meet regularly at the famous « Copenhagen Fashion Week » https://copenhagenfashionweek.com (presently online).

Other events are regularly organised to boost the fashion scene, e.g. the next « Copenhagen Fashion Summit » will start in October 2020 https://www.copenhagenfashionsummit.com . This is of course an opportunity to make business contacts but also, and above all, to reflect on the textile and clothing industry and on ways to improve it, in its environmental and social aspects. (see the very interesting article published by "Fashion Revolution" after the 2019 summit https://www.fashionrevolution.org/a-view-from-the-copenhagen-fashion-summit-2019/)

Denmark is therefore an excellent gateway for commercial access to the Nordic markets.

Table 23. 43 selected Danish fashion companies (M=men, W=women, K=kids)

43 SELECTED DANISH'S TEXTILE AND FASHION COMPANIES			
AM COMPANY APS	https://www.norseprojects.com/page/men	M / W	
BAUM UND PFERDGARTEN A/S	https://www.baumundpferdgarten.com/se/	W	
BESTSELLER	https://shop.bestseller.com/se/sv/home	M / W / K	16 different brands

BY MALENE BIRGER A/S	http://www.bymalenebirger.com/gb/clothing/	W	
CARRINGTON RETAIL APS (Wood Wood)	https://www.woodwood.com/	M / W	
DESIGNERS REMIX A/S	https://designersremix.com	W	
GANNI A/S	http://www.ganni.com/sv-se/about-us.html	W	
HUMMEHUMMEL A/SL A/S	https://hummel.net/	M / W	
LIBERTINE-LIBERTINE APS	https://libertine-libertine.com	M / W	
MADS NØRGAARD - COPENHAGEN A/S	https://www.madsnorgaard.com/	M / W / K	
MUNTHE A/S	https://www.munthe.com/	W	
RAINBOW DOUGH APS (SOULLAND)	https://soulland.com/	M	
SAINT TROPEZ AF 1993 A/S	https://www.sainttropez.com/da-dk	W	
SAMSØE & SAMSØE WHOLE SALE APS	https://www.samsoe.com/se/home	M / W	
SECOND FEMALE APS	https://secondfemale.com/shop-online.html	W	
TONSURE APS	http://www.tonsure.eu/	M / W	
WON HUNDRED KLOSTERSTRÆDE APS	https://wonhundred.com/	M / W / Unisex	
DK COMPANY A/S	http://dkcompany.dk/	M / W	20 different brands(including InWear, Cream Clothing and Gestuz)
SPORTS GROUP DENMARK	https://sports-group-sgd.com	M / W / K	Consist of 15 different brands
MOS MOSH A/S	https://www.mosmosh.com		
MASAI CLOTHING COMPANY APS	https://www.masai.net	W	

I SAY A/S	https://isay.dk//	W	No online shop but lookbook
JUNGE A/S	http://junge.eu	W	Solely do jackets
ENVII APS	https://www.envii.com		
NOA NOA APS	http://www.noanoa.com/gb_en	W	
GESTUZ	https://www.gestuz.com/	W	DK Company
CREAM CLOTHING	https://www.cream-clothing.com/	W	DK Company
DENIM HUNTER	https://www.denim-hunter.com/	W	DK Company
KAFFE CLOTHING	https://www.kaffe-clothing.com/	W	DK Company
BONAPARTE	https://dk.bonaparteshop.com/	W	DK Company
KAREN BY SIMONSON	https://www.karenbysimonsen.com	W	DK Company
EDUCE	https://www.culture.dk/	W	DK Company
B.YOUNG	https://www.byoung.com/	W	DK Company
BLEND COMPANY	https://se.blendcompany.com/	M	DK Company
FRANSA	https://netbutik.fransa.com/	W	DK Company
CASUAL FRIDAY	https://www.casual-friday.eu/	M	DK Company
ICHI	https://webshop.ichi.biz/	W	DK Company
PULZ JEANS	https://se.pulzjeans.com/	W	DK Company
BLENDSHE	http://www.blendshe.com/index.php	W	DK Company
MATÍNÍQUE	https://www.matinique.com/	M	DK Company

INWEAR	https://www.inwear.com/	W	DK Company
SOAKED IN LUXURY	https://www.soakedinluxury.com/	W	DK Company
PART TWO	https://www.parttwo.com/	W	DK Company

2.7.1. Denmark's silk imports

. CAT. 50

Table 24. Danish' main supplying countries for silk Cat. 50 - Years 2017, 2018, 2019 – USD (UN Comtrade Database)

	2017		2018		2019	
Rank	Country of origin	Imports USD	Country of origin	Imports USD	Country of origin	Imports USD
	Total imports	694 908	Total imports	873 049	Total imports	1 213 708
1	China	483 748	China	488 811	China	317 786
2	Germany	83 476	Germany	196 540	Germany	267 747
3	India	36 339	Italy	49 834	UK	191 941
4	USA	27 762	India	19 891	Italy	83 536
5	Japan	25 800	Greece	18 490	India	71 867
6	Switzerland	15 136	Japan	17 958	Netherlands	57 162
7	Italy	13 163	UK	14 488	Japan	28 844
8	Turkey	2 682	Lithuania	13 319	Belgium	24 769
9	Netherlands	2 447	France	11 052	Poland	21 065
10	Belgium	1 728	Switzerland	9 819	Latvia	20 711

Highlights

- Danish imports of silk Cat. 50 are increasing steadily + 75% in 3 years. Denmark is a hub for the silk trade in the Scandinavian area.
- China is dominant, followed by Germany and Italy
- Filipino companies are totally absent from the market

. Cat. 61

As for Germany, we'll focus only on HS number 6106 90 « Blouses, shirts and shirt-blouses; women's or girls', of textile materials (other than cotton or man-made fibres), knitted or crocheted » which may include silk.

Table 25. Denmark's main supplying countries for Cat. 6106 90 - 2019 (Source: UN Comtrade Database)

Ranking	Country of origin	Imported amount USD
	Total Danish 'Imports	9 694 945
1	France	3 371 558
2	China	2 613 919
3	Portugal	689 109
4	Poland	658 475
5	Italy	655 729
6	Bulgaria	468 618
7	Netherlands	236 850
8	Turkey	138 741
9	India	122 802
10	Germany	103 902
40	Philippines does not	appear in the list

Highlights
- European suppliers are dominant in this category, followed by China
- The Philippines are totally absent from the market

. Cat. 62

As for Germany, we will consider, in that category, 4 product lines corresponding to the following 4 sub-headings.

. Cat. 6206 10: « Blouses, shirts and shirt-blouses; women's or girls', of silk or silk waste (not knitted or crocheted) »

. Cat. 6204 49: « Women's or girls' dresses of textile materials (excl. of wool, fine animal hair, cotton or man-made fibres, knitted or crocheted and petticoats) ». May include silk dresses coming under sub-heading 6204 49 10: (« Women's dresses, not knitted or crocheted, of silk or silk waste ») unfortunately 8 digits code are inaccessible in UN Comtrade Database.

. Cat. 6214 10: « Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted, of silk or of silk waste »

. Cat. 6215 10: « Ties, bow ties and cravats, not knitted or crocheted, of silk or of silk waste »

Table 26. Denmark's main supplying countries for 4 selected Cat. 62 items - Imports - 2019 / USD

Cat. 6206 10 women's blouses			Cat. 6204 49 dresses		
Ranking	Country of origin	Imported amount USD	Ranking	Country of origin	Imported amount USD
	Total imports	8 898 287		Total imports	13 828 704
1	China	4 934 450	1	China	6 137 610
2	Sweden	1 854 687	2	France	3 192 384
3	Netherlands	534 616	3	Italy	1 039 153
4	Italy	316 266	4	Germany	562 851
5	UK	210 978	5	UK	561 031
6	Germany	195 620	6	Sweden	462 188
7	France	170 042	7	India	382 455
8	Poland	131 021	8	Netherlands	305 867
9	Indonesia	111 441	9	Poland	234 856
10	India	91 151	10	Myanmar	150 150
	Phillipines do	not appear		Phillipines do	not appear

Cat. 6214 10 silk shawls & scarves			Cat. 6215 10 silk ties		
Ranking	Country of origin	Imported amount USD	Ranking	Country of origin	Imported amount USD
	Total imports	2 541 873		Total imports	1 569 725
1	France	861 682	1	Italy	578 726
2	China	858 482	2	China	310 778
3	India	225 070	3	UK	152 141
4	UK	164 698	4	Romania	115 179
5	Italy	126 264	5	Sweden	108 374
6	Germany	89 121	6	France	107 145
7	Switzerland	65 431	7	Germany	82 364
8	Sweden	40 061	8	Poland	45 636
9	Netherlands	19 567	9	Netherlands	18 141
10	Belgium	19 121	10	Spain	13 031
	Phillipines do	not appear	Philippines do not appear on the suppliers 'list		

Highlights

- China dominant for apparels, France and Italy dominant for accessories (probably mostly printed)
- Nordic countries such Sweden and Netherlands are good suppliers of Denmark (importance of inter-regional exchanges), the latter appreciating the brands and also the quality of manufacture of its Nordic neighbours.
- The Philippines are totally absent from the market in this country.

2.8. Norway

N.B. to simplify we have considered that 1 NOK (Norwegian Crown) = 0.10 USD. The present exchange rate (June 2020) being 1 NOK = 0.103422 USD. So, all the amounts concerning Norway's imports are always given in USD.

All statistics come from https://www.ssb.no/en (Statistics Norway)

2.8.1. Consumption, market introduction and key players

Fundamental values

Norway shares the same fundamental values as Denmark and its Scandinavian neighbours. Unsurprisingly, and as confirmed in an interview[42] with Ms Ditte Kristensen, CEO of "Oslo Runway[43]", the major value today is sustainability.

"Sustainability has long been at the top of the agenda for many in the Norwegian fashion industry, but it has become even more important in recent years" says Ditte Kristensen.

According to Kristensen, more and more individuals and organisations – such as the "Copenhagen Fashion Summit" (see above par. 2.7.1) are working to promote sustainability in fashion internationally, stressing the need for change.

Norwegian actors are particularly committed, says Kristensen, due in good part to fundamental Norwegian – and Nordic – values.

Egalitarianism, gender equality, tolerance and openness are firmly rooted in Norwegian society.

These are reflected in Norwegian fashion as well, making it attractive internationally. A number of actors in the Norwegian fashion industry integrate corporate social responsibility into every segment of their activities.

The industry cluster Norwegian Fashion Hub also gives priority to sustainability.

Market situation and leading players

Following a general worldwide trend the Apparel Sector in Norway has been under a great deal of price pressure for the last two decades experiencing declining or stagnating unit prices. This downward pressure has, amongst other things, been driven by the rising popularity of on-line retailing and frequent discounting. However, the situation has been changing slightly since 2016, 2017 which showed growth in the unit prices of Apparels.

The local market is dominated by leading players (H§M, Nike etc.) that have consolidated their presence when smaller companies struggle with shrinking margins and harsh competition from internet retailers that have experienced enormous double-digit growth, thanks to aggressive strategy and intelligent use of cross-channel, multi-channel, show rooming etc. marketing tools.

The line between sportswear and fashion's wear is becoming increasingly blurred. Sportswear and sports inspired apparels is an important and growing market in Norway.

In that field, key international sport giants are dominating (Nike, Adidas) but important local companies are also active ("Bergans Fritid" 10% share of value sales, "Helly Hansen" 8% - see below companies list). Obviously local fashion powerhouses such as "Bestseller" and "Varner group"

[42] Source: https://www.theexplorer.no/stories/creative-industries/norwegian-fashion-setting-a-sustainable-standard/

[43] https://www.oslorunway.no one of the flagship events in the Norwegian fashion scene, a kind of contemporary version of the former Oslo Fashion Week, digital version of course in these times of pandemic

https://varner.com/en/about-us/ (one of the largest fashion retailers in Scandinavia with 11,000 employees and 1,400 shops in 6 countries) etc. will increasingly enter that segment.

Norwegian design, designers and smaller brands

Smaller companies and designers have to focus on creativity, increased specialization.

Norwegian born supermodel Iselin Steiro describes the strength of Norwegian fashion design within the Scandinavian tradition as follows: "It's clean, simple, practical and yet elegant by using traditional materials of rich history. The design remains true to these materials without compromising on innovation."

The Norwegian nature, weather and way of life have also made their mark on the work of many designers. It's probably no coincidence that some of the most renowned clothing brands the last few years have produced rainwear, or warm garments made of wool. They make clothes for ordinary people with a sense of style, while luxury clothing made from Norwegian fashion designers is a rarity.

It is true that Copenhagen and Stockholm are cities that have paved the way for Scandinavian fashion for some time now, but, historically, less attention has been paid to Oslo.

That is about to change. Since 15 years, new talented designers and brands are emerging in Norway such as Kristian Aadnevik, http://www.kristianaadnevik.com (London based), Lisbeth Løvbak Berg https://llbfashion.com (focus on organic, recycled & up-cycled fabrics, crafts environmentally-friendly designs blending high quality tailoring and eco-ethics), Frank Remme https://www.frankremme.com , Veronica B. Vallenes http://www.veronicabvallenes.com/about , John Vinnem the "Johnylove" (see table 26 below) designer, Eva Emanuelsen and her brand "Epilogue" https://www.epiloguebyevaemanuelsen.com/journal/aw-2018 etc.

As elsewhere, famous brands can suddenly disappear, this was recently the case of the emblematic Norwegian brand "Moods of Norway AS", declared bankrupt in 2017. The brand was relaunched in 2019 under the name "Moods" https://moods.no/en/en .

Here is a selected list of Norway's key textile players; more can be found here https://www.norwegianfashionhub.com/members .

Table 27. 26 Norwegian companies – textiles and fashion

26 SELECTED NORWEGIAN'S TEXTILE AND FASHION COMPANIES			
ACTIVE BRANDS AS	http://www.activebrands.com	M / W	3 different brands
BERGANS FRITID AS	https://www.bergans.com/	M / W	
BIK BOK AS	https://bikbok.com/no/	W	Owned by Varner Retail
CARLINGS AS	http://carlings.com/no/	M / W	Owned by Varner Retail
CATHRINE HAMMEL AS	https://cathrinehammel.no/	W	

CUBUS AS	https://cubus.com/sv/	M / W	Owned by Varner Retail
DALE OF NORWAY AS	https://no.daleofnorway.com/?select_site	M / W	
DAYS LIKE THIS AS	https://dayslikethis.no https://www.facebook.com/dayslikethisofficial/	W	Owned by Varner Retail
DRESSMAN A/S	https://dressmann.com/no	M	Owned by Varner Retail
FALL WINTER SPRING SUMMER AS	http://fallwinterspringsummer.com/	W	
HELLY HANSEN AS	https://www.hellyhansen.com/	M / W	
HOLZWEILER ITEMS AS	https://www.holzweiler.no	M / W	
JOHNNYLOVE AS	http://www.johnnylove.com/	M / W	
LINE OF OSLO AS	http://lineofoslo.no/	W	
NORRØNA SPORT AS	https://www.norrona.com/	M / W	
RICCOVERO AS	https://www.riccovero.no/	M / W / K	
STORMBERG AS	https://www.stormberg.com/no/	M / W	
SWIX SPORT AS	http://www.swixsport.com/	M / W	
TI-MO AS	https://www.bytimo.no/	W	
VOLT FASHION AS	https://voltfashion.com/sv/	M	Owned by Varner Retail
LILLELAM AS	https://lillelam.com	K	
OLEANA AS	https://oleana.no/	W / K	
ONEPIECE JUMP IN AS	https://www.onepiece.com/en-no	M / W / K	
TYRIHANS AS	https://www.tyrihans.no/	W	
DEVOLD RETAIL AS	https://www.devold.com/nb-NO/	M / W / K	
RETAIL MANAGEMENT AS	http://risoe.net, http://www.zavanna.no	W	2 brands, no online shop, just a map of physical shops.

2.8.2. Imports of silk from the Philippines

In all its forms - raw fibre, yarns, fabrics and apparels - the imports of Filipino silk products by Norwegians are either nil or extremely low. Philippines are not considered by Norwegian buyers as a silk supplying country.

- Details per category

. Cat. 50: as far as raw silk, silk yarns and woven fabrics are concerned, the last 8 years (2012 to 2019) Norway imported virtually nothing[44] from the Philippines.

. Cat. 61: concerning « knitted or crocheted apparels » the largest imports in value from the Philippines are man-made and cotton[45] clothing. In 2019 in cat. 61 only 11 sub-groups of commodities have exceeded USD 50,000 in imports value, out of these 11 groups, 9 concern synthetic / man-made fibres or cotton[46] and only 2 indicate « other textile material » that could include silk items (type 2 data).

Indeed, a certain percentage of the « knitted T. shirts, singlets and other vests » imported under cat. 6109 90 10 & 90 90, representing an average of USD 680,000.00 per year of imports over the last 8 years (cf. Annex 10a), could be made of silk but there is no way of saying which proportion of that amount could actually concern silk apparels.

Actually, we believe that share to be rather small. Indeed, knitted silk T-shirts are not so common on the market, much less common than silk Ladies blouses, and in that latter category, be it knitted (cf. Annex 10b) or woven (see below cat 62) the imported values are very low and we expect silk T-shirts' imported value to also be very limited.

. Cat 62 (« not knitted or crocheted apparels ») The only clearly identified import of woven silk apparels (data type 1) concerns Women's blouses. The figures are especially low: over a period of 8 years (2012 - 2019) Norway has imported 46 pieces of woven silk blouses from the Philippines, that represents less than USD 10,000 (USD 9,693.00 exactly - cf. Annex 11a)

Finally, of the 7 commodity groups of Cat. 62 most imported from the Philippines by Norway in 2019 (see Annex 11b) only the group CN 6212 10 "Brassières, whether or not knitted or crocheted" could eventually include some silk items, but considering the relatively limited global imported value of that item (USD 148 000 in 2019) silk will, in any case, not represent a large turnover.

So, from which country are the Norwegians importing their silk products and which kinds of products?

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[44] USD 136.00 of fabric cat. 5007 imported in 2012 and USD 207.00 in 2018…

[45] In 2019 Norway imported USD 613,540.00 of knitted Men's shirts of man-made fibres (cat. 6105 20 00), USD 610,945.00 of Women's or girls' trousers, bib and brace overalls, breeches § shorts of synthetic fibres, knitted or crocheted (cat. 6104 63 00) and USD 389,867 of Jerseys, pullovers, cardigans, waistcoats and similar articles, of cotton, knitted or crocheted (cat. 6110 20 00)

[46] Cat. 6102-20, 6103-23, 6103-43, 6104-43, 6104-63, 6105-20, 6109-10, 6110-20, 6110-30

2.8.3. Imports of silk products from the rest of the world

i – Summary

Norway's imports of silk fabrics have declined by 20% over the last 5 years, when yarns imports increased by 74%, for these 2 items main suppliers are India, Italy and China.

For the knitted apparels group (Cat. 61) type 1 data is unfortunately not available. In any case Norway's imports have remained stable in the last 5 years, with China, Lithuania and Turkey being the main supplier countries and T-shirts representing 55% of imported value. We believe that the bulk of silk-based products is not part of that category, but rather belongs to Cat. 62 (woven apparels and accessories).

In Cat. 62 the Norwegian imports of the 3 identified silk products (type 1 data) have decreased by 17% over the last 5 years, but that drop has hit Asian suppliers the hardest, whilst the European providers have resisted better. Against common belief, China does not occupy a dominant supplier position for all silk commodities, for accessories such as scarves and ties, Italy even does better than China, whilst France has also positioned itself as a key player on the printed silk scarves and ties market.

As a matter of fact, many little signs seem to indicate that for Norwegian brands, the proximity of the production places is becoming an increasingly salient parameter of their import strategy, revealing a marked trend towards re-shoring, this explains why:

. They amplify their purchases of yarns in order to weave more in EU i.o. importing finished fabrics from Asia

. They intensify their collaboration with countries located very close to Norway (Lithuania, Latvia, Estonia, Poland) and with leading EU suppliers (Turkey in particular)

. They favour Italy and France rather than Asia for luxury and high-end silk items, requiring high levels of creativity and state of the art digital printing technology.

ii - Details per category

. Cat. 50 (silk - raw, yarn, fabrics)

In 2019 Norway imported USD 913,325.00 of silk from cat. 50. Woven fabrics[47] representing 75% of that total. Since 2016 silk fabric imports have dropped by 20%, but silk yarn imports have almost increased by a factor 4 (+74 %).

That might indicate that Norwegian buyers are relocating part of their weaving and even spinning's operations either in European countries closer to Norway or even locally, a movement known as re-shoring[48].

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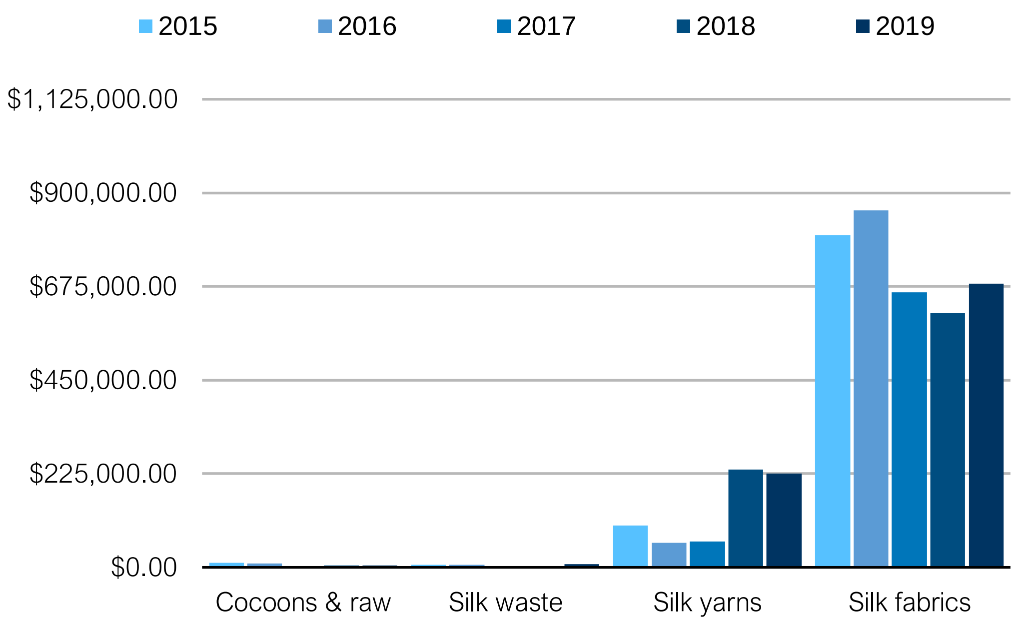
[47] Cat. 5007-10, 5007-20 & 5007-90

[48] Re-shoring is the process of returning the production and manufacturing of goods back to the company's original country or to neighboring countries. Re-shoring is also known as on-shoring, in-shoring, or back-shoring. It is the opposite of offshoring, which is the process of manufacturing goods overseas to try to reduce the cost of labor and manufacturing. (source: https://www.investopedia.com/terms/r/reshoring.asp)

Norway, in spite of decades of acute outsourcing, has kept a small number of national, highly professional upstream textile players at home, that are now very keen to explore new opportunities that the changes in consumers expectations, the technological progress in textile industry and supply chain management, the increasing requirements guaranteeing the sustainability, transparency and compliance of all stakeholders along the supply chain, etc. have created.

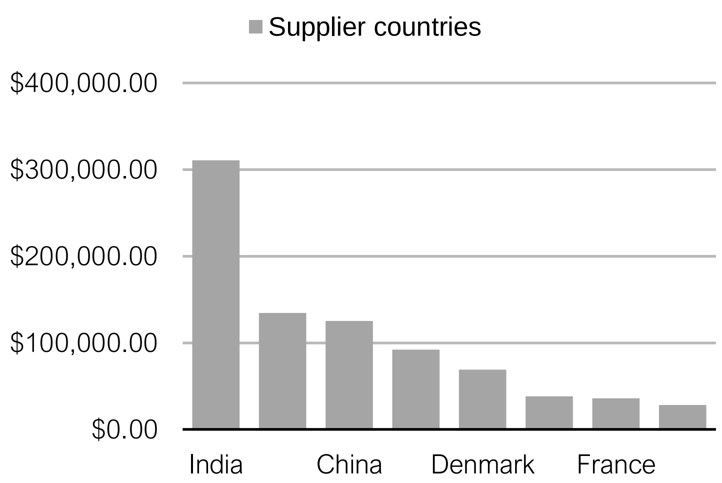
To cite but a few: the small (20 employees) spinning mill « Hillesvåg Ullvarefabrikk AS » (https://www.ull.no/produktkategori/garn/), the natural fibres weaver (21 employees) « Krivi Vev AS » (www.krivi.no).

Figure 22. Norway cat. 50, total imports in USD



Cocoons & raw silk	: cat. 5001 & 5002	Silk yarns	: cat. 5004, 5005, 5006
Silk waste	: cat. 5003	Silk fabrics	: cat. 5007

Figure 23. Norway's main supplier countries from Cat. 50, 2019 in USD

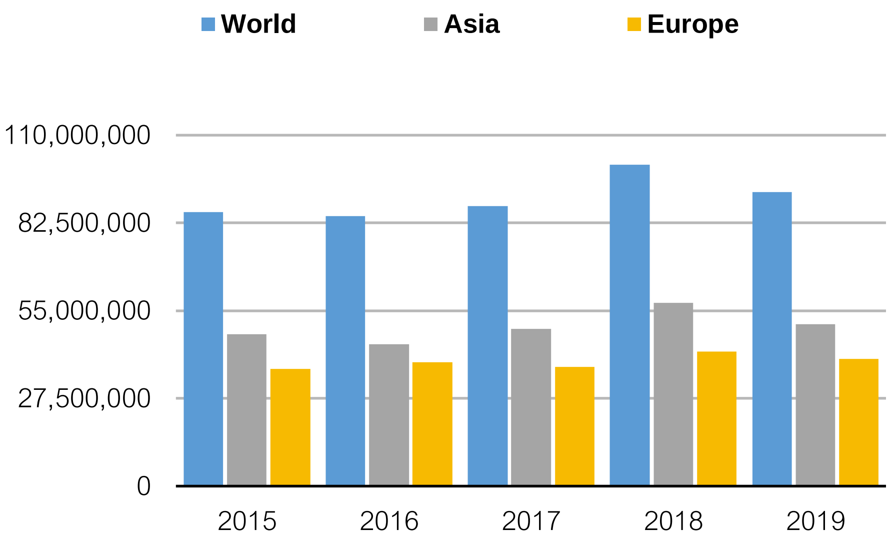


Highlights

- Surprisingly enough it is, by far, India and not China which is Norway's main supplier for that Cat. 50. Even Italy is placed before China.

. **Cat. 61** (knitted apparels & accessories) - Analysis based on our Cat. 61 statistical population (cf. above par. 2.1.2.1). Unfortunately, no data type 1 is available in that category, so we will consider general trends only.

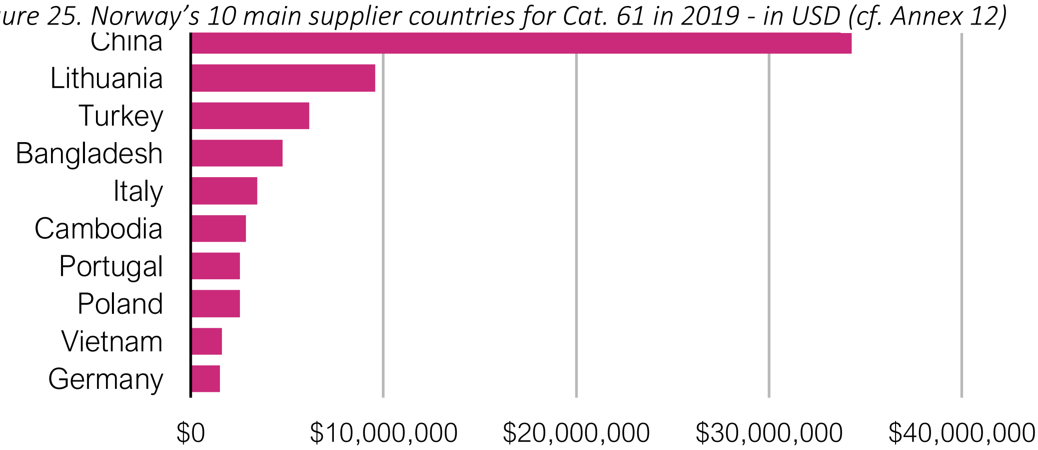
Figure 24. Norway's import of cat. 61, selected population, in USD



Highlights

- The last 5 years Norwegian average imports of Cat. 61 selected items have been USD 90 millions / year
- Trend: stable to slight increase (average on 5 years)
- 98 % of Cat. 61 products are imported from only 2 areas: Asia and Europe
- 55 % imported from Asia, 43 % from Europe (average over the 5 years period)

Figure 25. Norway's 10 main supplier countries for Cat. 61 in 2019 - in USD (cf. Annex 12)



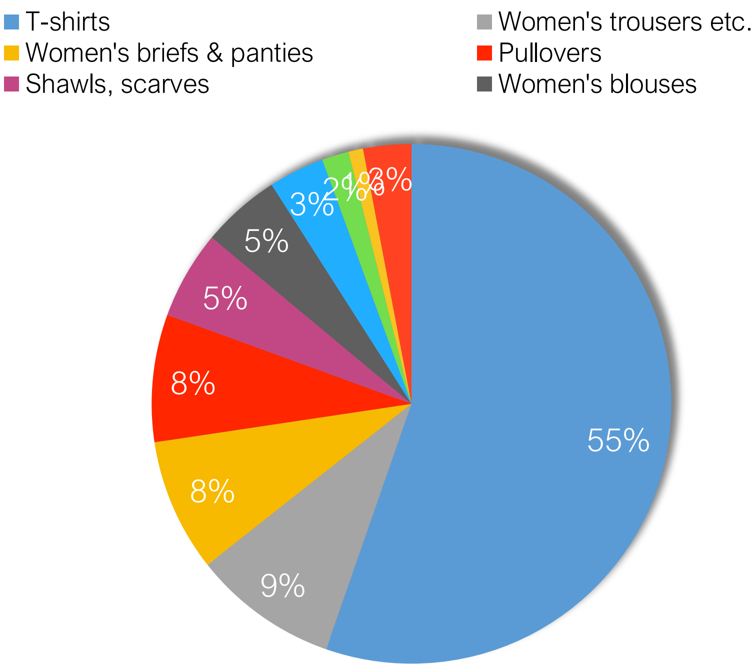
It is interesting to see how Lithuania, a small Baltic country with only 2.8 million people, is handling almost USD 10 millions of orders from Norway.

If we were expressing imported value in per capita terms, then Lithuania's score would be 142 times higher than the Chinese score.

Lithuania, but also Estonia and Poland, clearly benefit from their proximity with Norwegian fashion companies keen to drastically reduce the carbon footprint related to transport. Transport of end products in the first instance, but also staff sent on the manufacturing sites to develop collections, supervise, control the quality etc.

We should be aware that Norway, Sweden and Nordic countries in general, spearheaded the fight for ethical trade, environmentally and socially.

Figure 26. Norway's main imported items from Cat. 61 selected population in 2019 - in USD, see also annex 13.



All of the 14 t groups of products forming part of our statistical population for Cat. 61, including the 9 most imported by Norway, presented in the above chart, could contain a certain percentage of silk items, but unfortunately the proportion of silk apparels remains statistically invisible.

In other words, we know that Norway has imported more than 50 million USD of T-shirts in 2019, which are not made of cotton, nor made of wool or fine hair animal, neither of man-made fibres, so some could obviously be made of silk, but this information is not provided by the Norwegian central statistical agency (SSB / Statistisk Sentralbyra).

However, the above graphic is very informative as it clearly shows the types of knitted clothing most demanded by Norwegians buyers.

Of course, not all imported apparels are sold in Norway, a good number of local fashion companies have an extensive network of distribution points worldwide to which they re-export part of the imported clothing. « Helly Hansen » is present in 40 countries, the 11 brands managed by « Varner retail AS » are represented in 1,400 shops across 6 countries and even a small size, high-end knitting company such as « Oleana » has retailers in all the countries of Northern Europe, in USA, Australia and Japan. Still, these quantities, even sold abroad, are part of Norway's global apparel demand.

- Cat. 62 (woven apparels & accessories)

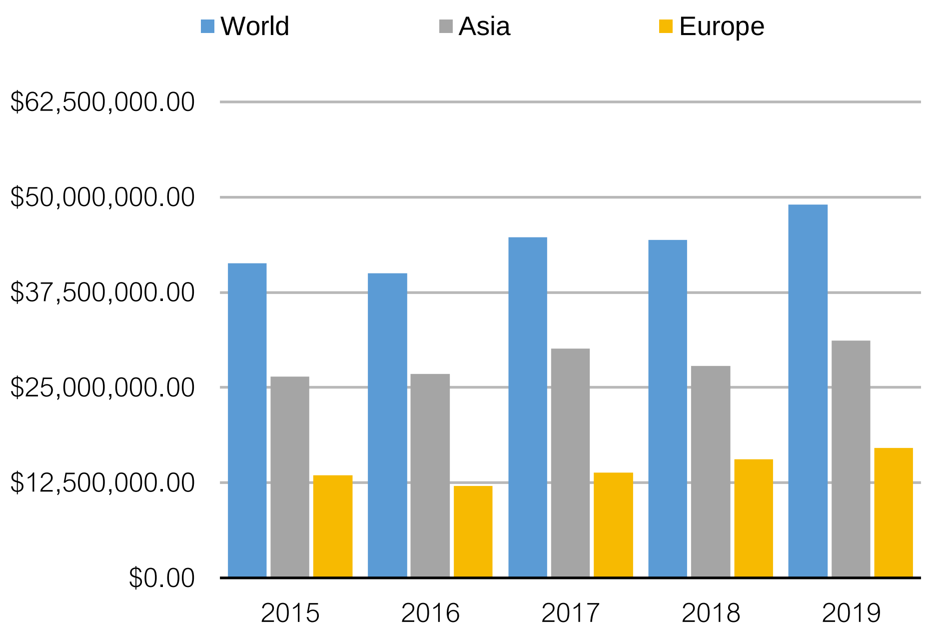
N.B. analysis based on our Cat. 62 statistical population

In the category 62 we do have 3 sub-headings which concern exclusively silk products:

. CN 6206 10: « Women's or girls' blouses and shirts, not knitted or crocheted, of silk or of silk waste ».
. CN 6214 10: « Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted, of silk or of silk waste ».
. CN 6215 10: « Ties, bow ties and cravats, not knitted or crocheted, of silk or of silk waste ».

Part of our statistical search relies on that type 1 data.

Figure 27. Norway's imports of Cat. 62 (concerns the 13 categories of the selected population)



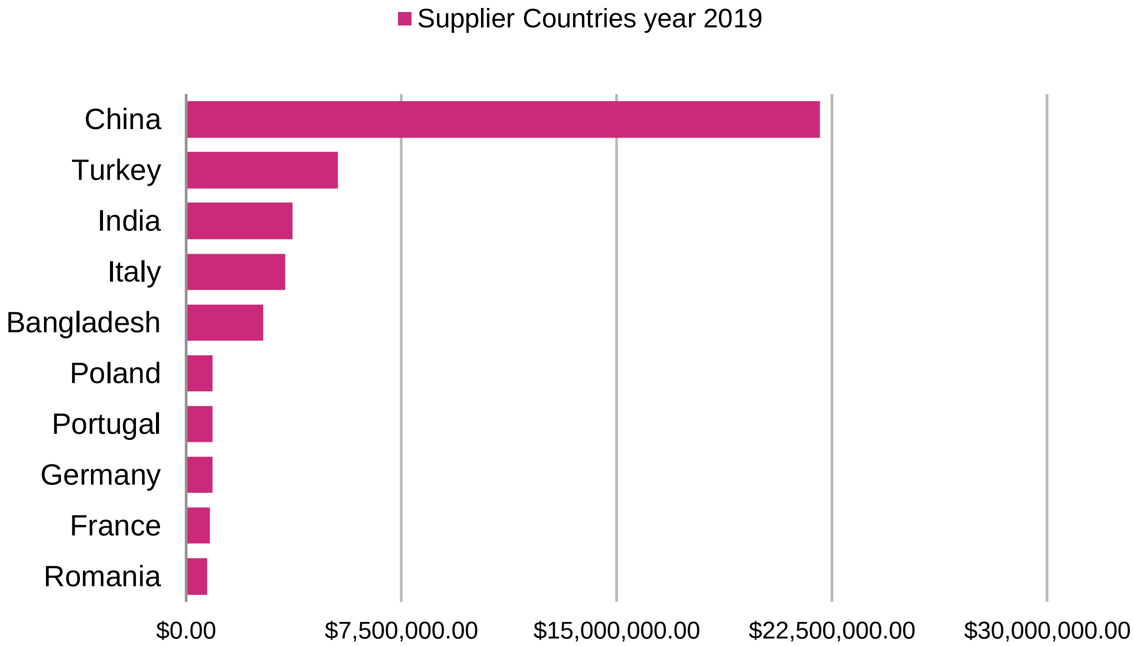
Highlights

- In 5 years, Norwegian imports of Cat. 62 have increased by + 18.6 %[49]

[49] From USD 41.3 millions in 2015 to USD 49 millions in 2019

- In proportion, European manufacturers have benefited most from that increase: + 26.4 % increase in sales in 5 years for Europe. Only + 17.6 % for Asia[50]
- 98 % of Cat. 62 products are imported from only 2 areas: Asia and Europe
- 63 % imported from Asia, 35 % from Europe. Europe gained 5% since 2016. This may be a sign of the re-shoring trend.

Figure 28. Norway's 10 main supplier countries for Cat. 62 in 2019 - in USD (cf. Annex 14)



Highlights

- Contrary to Cat. 61 the Asian production of Cat. 62 items is heavily concentrated on 3 Asian countries only (China, India and Bangladesh) with a heavy Chinese domination.

- In Europe, Turkey, known for its competitiveness and efficiency, and Italy, offering quality and flexibility for high end products (e.g. silk garments), largely predominate.

[50] + USD 3.5 millions for Europe, + USD 4.7 millions for Asia.

Figure 29.: Norway's main imported items from Cat. 62 selected population 2019 USD, see complete figures in Annex 15

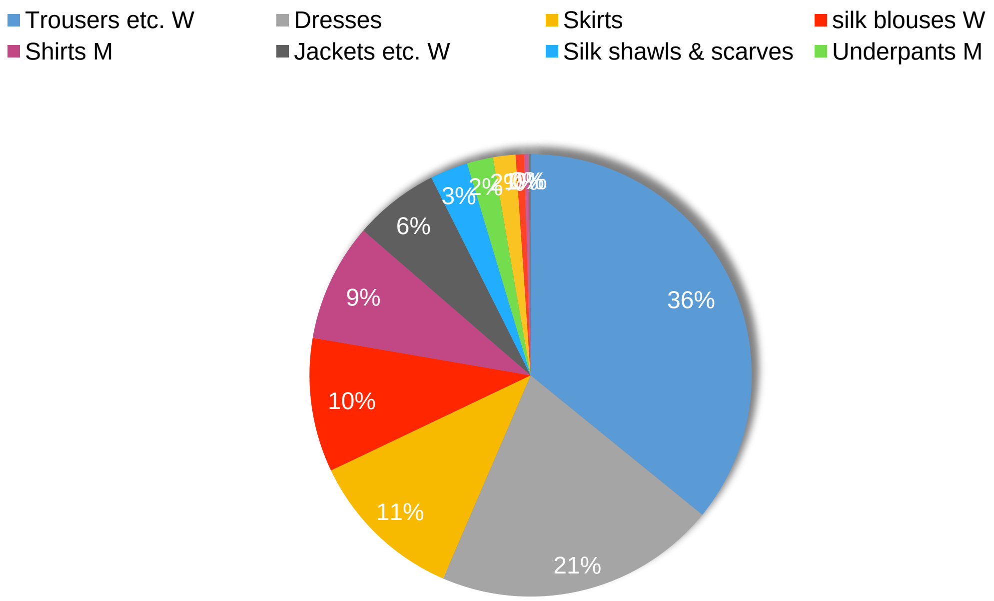
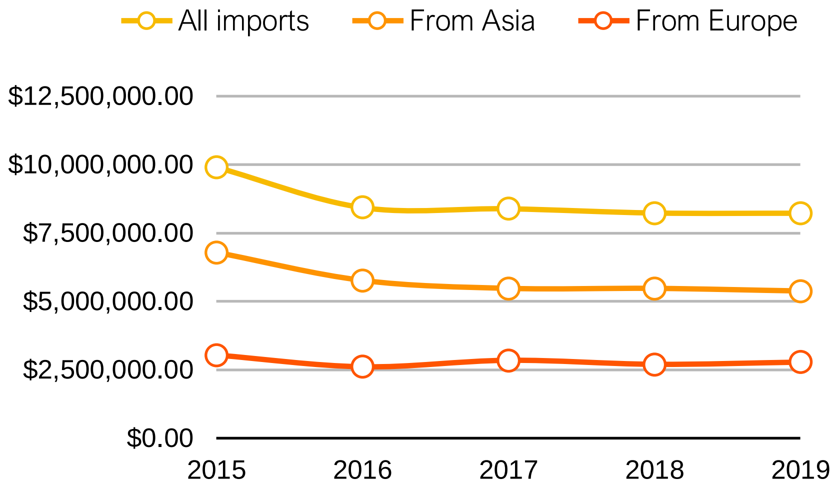


Figure 30. Norway's imports of the 3 silk sub-headings of Cat. 62 (see above)



Highlights

- In the last 5 years Norwegian imports of these 3 silk commodities have decreased by 17%[51] . During the same period the total import of Cat. 62 (selected population) increased by 18.6% (see above table 53). So, proportionally, silk imports from Cat. 62 by Norway are seriously losing ground.

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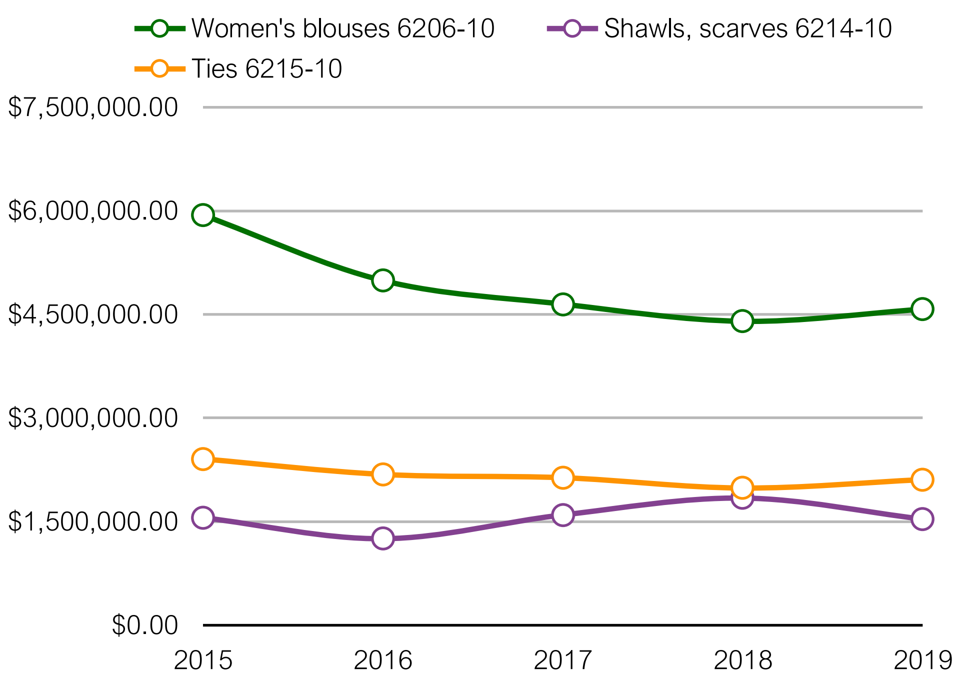
[51] From USD 9,9 millions in 2015 to USD 8.2 millions in 2019

- For Asia, the drop has been especially sharp between 2015 and 2016[52] and in the last 4 years the curve has always followed the downward trend, but more smoothly.

- In the 5-year period, European suppliers have resisted better than their Asian counterparts, the drop in sales has been smoother and the situation even improved slightly in 2017 and 2019. Again, that could be a sign that Norwegian buyers are increasingly favoring production facilities located closer to their country.

Figure 31. Norway's imports of cat. 6206-10, 6214-10 & 6215-10 - USD / 2015 - 2019



Highlights

- This graph shows us that the drop in silk Women's blouses imports (minus USD 1.36 millions in 5 years) is the major cause of the decline in Norways silk imports of Cat. 62. It represents 81% of the total decrease.
- 2019 shows a slight improvement, at least for the blouses and scarves, but unfortunately it is likely that results for 2020 will not be good, due to Covid 19 crisis effects (see below par. 2.8.3)

[52] A drop of USD 1.47 million between 2015 and 2016

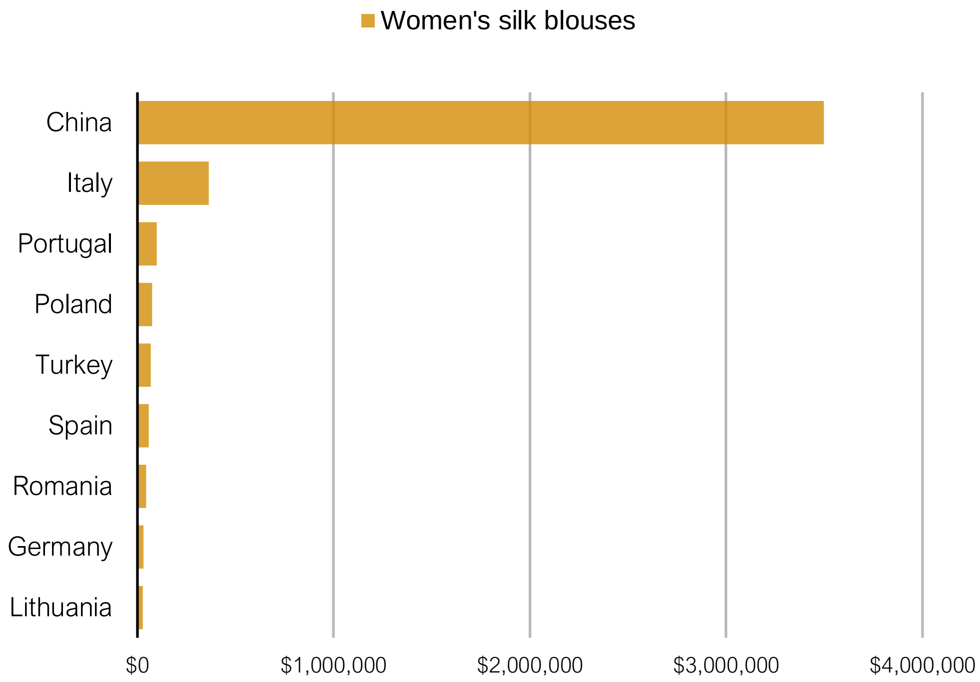


Figure 32. Main supplier countries of Norway for Women's silk blouses (Cat. 6206-10)

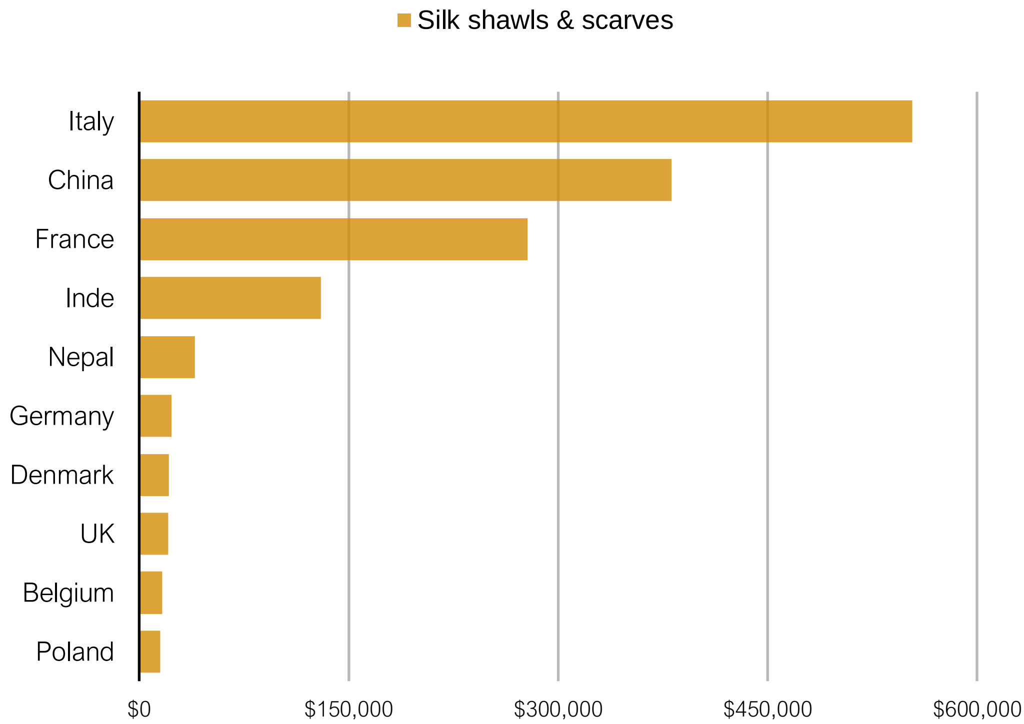
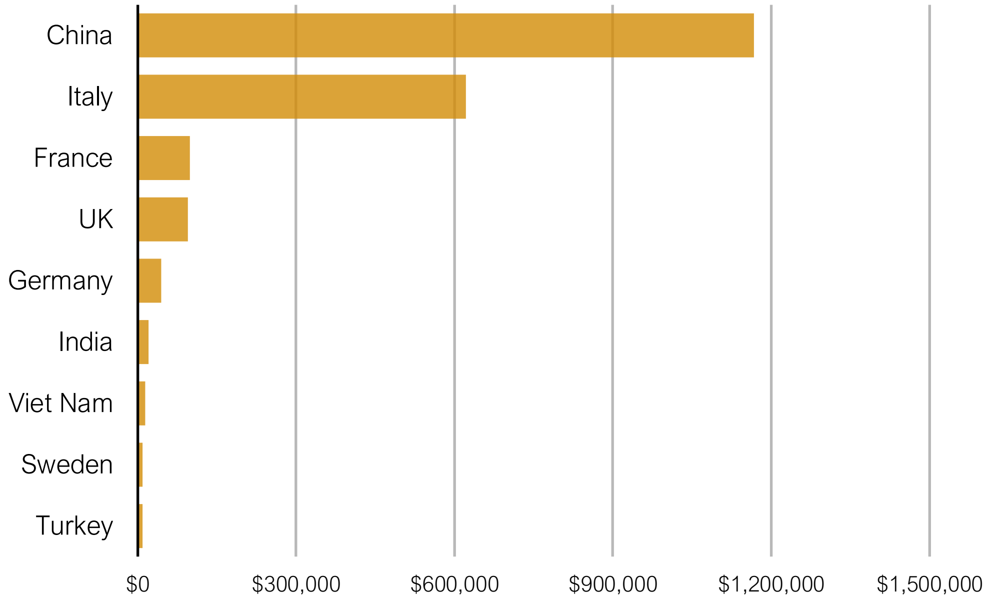


Figure 33. Main supplier countries of Norway for silk shawls & scarves (Cat. 6214-10)

Figure 34. Main supplier countries of Norway for silk ties (Cat. 6214-10)



Highlights

- Unlike Cat. 61 (knitted products) where one single item, the T-shirts, accounts for more than half of the chapter trade value, the Cat. 62 (woven items) is not heavily dominated by one particular type of garment. Trousers, dresses, skirts, Women's blouses, Men's shirts, jackets and even shawls and scarves may offer some business opportunities.
- If, globally, China remains a very strong supplier country for all woven silk items, there are nevertheless significant differences according to the lines of product considered.

Even if local clothing companies are increasingly relying on their foreign branches or on the services of overseas sub-contractors to carry out sewing operations, China still keeps a firm grip on apparels' production requiring substantial sewing expertise and time (SAM - Standard Allowed Minutes).

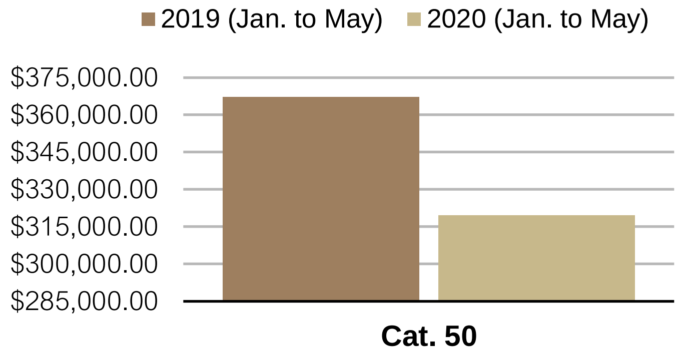
But when it comes to silk accessories, many of them printed and intended for high-end luxury industry, things are changing drastically, Chinese dominance is affected in favor of Italy and France.

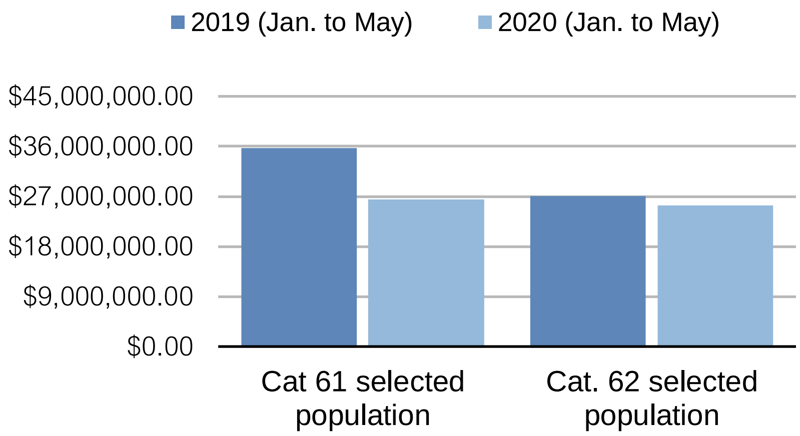
This dual situation is one of the stimulating features of today's silk market situation and offers us some guidelines for reflection in which silk market segments the Philippines could eventually try to gain a foothold. This matter will be discussed below.

2.8.4. Impact of Covid-19 crisis on Norwegian silk imports

At the time of writing these lines, the Norwegian Statistical Agency's had made available the import figures for the first 5 months of 2020, so we can compare them with the same period in 2019[53].

Figure 35. Difference between the Norwegian imports for the first 5 months of 2019 and the first 5 months of 2020 for Cat. 50 (all chapters), Cat. 61 & Cat 62 (selected population)





The fall in imports is significant in all 3 categories:

Cat. 50: - 23.5 %
Cat. 61: - 26 %
Cat. 62: - 6.2 %

It would be inconsistent to ascribe the serious fall in imports value exclusively to the pandemic crisis, but there is no doubt that it has played an important role.

[53] The statistic populations remain the same: the 7 chapters of Cat. 50, the 14 selected commodity groups of Cat. 61, and the 13 of Cat. 62

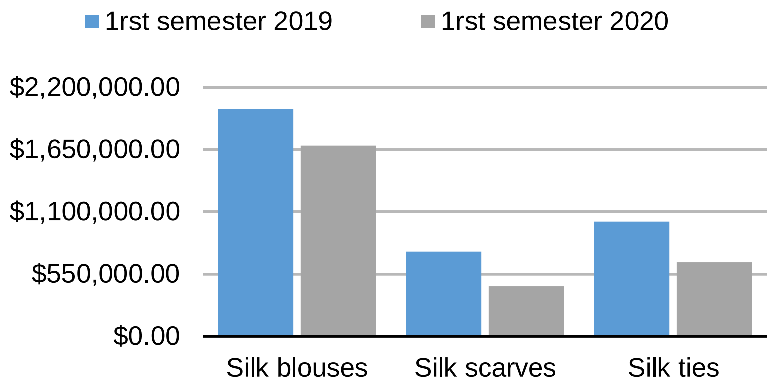


Figure 36. Difference between the Norwegian imports for the first semester 2019 and the first semester 2020 for the 3 silk commodity groups of Cat. 62

2.9. Sweden

2.9.1. Brief market introduction and selection of key players

Sweden has a population of 10,3 million people (2020 figures), the large majority living in the southern part of the country where the largest cities – Stockholm, Gothenburg and Malmö – are situated. Consequently, the Swedish Apparels market is actually almost entirely concentrated in that southern perimeter.

Despite the relatively small population, Sweden consistently ranks as one of the most competitive, productive and globalised countries in the world. The country is a global leader in innovation, a home to many large multinationals such as IKEA, H&M, Ericsson etc., but also the new, innovative start-ups earning global success, such as Skype, Spotify and Klarna.

The country enjoys a highly skilled labour force, sophisticated consumers, smooth business procedures, openness to international ownership and a stable economy.

In Sweden, the fashion industry represents around 37 billion dollars, of which +/- 70% is exported. This figure shows an ever-increasing attraction for Scandinavian design with brands such as « Filippa K », « ACNE », the H&M empire and « Our Legacy », which are now known internationally.

In 2020 the Swedish market remains dominated by the fast-fashion retailer « Hennes & Mauritz[54] » (H&M) https://hmgroup.com/about-us/history.html , it is followed by « Lindex Sverige[55] », https://about.lindex.com/about/ originally a Swedish retailer, it is now owned by the Finnish Department store Stockmann[56] . They are followed by « KappAhl Sverige » https://www.kappahl.com/en-US/about-kappahl/ and the leading footwear company « Nilson Group[57] ». These companies succeed due to their nationwide distribution, competitive prices in the low and mid-priced segment and also because they closely follow the demand and have created a loyal consumer base.

[54] Brands H&M, COS, Weekday, Monki, H&M Home, & Other Stories, ARKET, Afound

[55] Lindex is one of Europe's leading fashion companies, with approximately 460 stores in 18 markets and sales online.

[56] https://info.stockmann.com/info/department-stores/stockmann-in-brief/?lang=en

[57] Founded in 1955. With approx. 200 shops in Sweden, Norway, and Finland, NilsonGroup had sales of USD 285 million in 2019

Beside traditional players, a lot of brands, active on various market segments, have gained momentum in the last ten years in Sweden. We will introduce two examples of important Swedish market segments in the next chapter. Prior to this we would like to quickly underline the dynamism of the Swedish community to promote fashionable products. The "Stockholm Fashion district" www.stockholmfashiondistrict.com epitomizes that dynamic.

« Stockholm Fashion District is a creative, vibrant and innovative district for the Swedish fashion industry. Located in Nacka strand, Stockholm Fashion District is the destination for Swedish and international brands. Stockholm Fashion District is a hub for both business and creativity with showrooms, trade fairs, production, buying days and pop up-events » This quote has been found in the « Trade Partners Sweden » web site, a potentially good contact for Filipinos players eventually interested in the Swedish market.[58]

The Stockholm Fashion District includes:

. Stockholm showroom: 5 floors, 10 000 sqm permanent showrooms for the fashion industry

. Preview Fabrics § Accessories: This is something as unique as an international, yet graspable, creative textile fair in Sweden. For many designers, the new season begins as much here as at the drawing board. Organized twice a year with occasional invitations to additional "pack up"-days.

. « Textile Day » was established in 2015 and has become the natural meeting place for the fashion industry in Sweden. Both new and well-established brands, along with the best buyers, come together in the premises of an old car factory in Stockholm Fashion District twice a year (Next venue Dec. 2020). This is a real "incubator of talents" and relatively new designers and new brands (???) could become potential buyers as long as one comes with a flexible enough offer.

We should also mention, of course, the « Stockholm Fashion Week », now in its digital version https://stockholmfashionweek.se

What happened in 2019 just before the Swedish Fashion Week says a lot about the commitment and seriousness of the Scandinavian fashion and textile industry when it comes to achieving ecological goals and establishing new models of sustainable development within the fashion industry.

In July 2019, less than two months before the event was due to take place, the Swedish Fashion Council https://www.swedishfashioncouncil.se decided to cancel its Fashion Week until more eco-friendly approaches were put in place. « Moving away from the traditional model was a difficult but very well-thought-out decision. ...] The Swedish fashion industry is booming, so it is crucial to encourage the development of brands that will respectfully shape tomorrow's world » the council representatives said.

[58] https://www.tradepartnerssweden.se/en/find-trade-partner/ International business network. Their members include agents, distributors, importers or suppliers that operate in a number of industries, e.g. fashion, furniture, interior design etc...

The Swedish Fashion Council wants to be part of a new, more virtuous circle that encourages more alternative consumption models such as the circular economy. The SFC wants to promote and be inspired by less wasteful and more sustainable approaches such as renting, recycling or upcycling (or revalorisation), barter etc.

A minimalist approach and the Swedes' obsession with function are key to the country's success.

What makes Swedish fashion so successful is the business model — it's long-lasting, which gives it a commercial appeal. Swedish fashion does not shout, it can go directly from the show to the store.

« This is part of our Scandinavian design heritage — it's clean and timeless. We don't add too many extras to make the garments last longer in your closet » says Jockum Hallin co-founder of « Our Legacy » https://www.ourlegacy.se one of Sweden's rising brands

What connects all Swedish designers and brands is an elevated sense of sustainability that has led to much innovation. Sustainability and an ethical approach are central issues in the Swedish fashion industry.

Sweden at the forefront of promoting sustainable approaches:

Just like the Norwegians and most Scandinavian people, Swedish Textile and Garments companies, wholesalers, retailers, brands, designers etc. are extremely sensitive to the ethical dimension of the international fashion trade. Local media, especially online media - very effective and developed in Sweden – are strongly relaying that trend.

When asked in 2017 what was the most important issue for designers today, Kikki Boman CEO of « Boman Trading AB [59] » answered:

« The environmental aspect and requests of fiber from animals. To work hard with durability and reuse of everything from polyester to wool and bring it forward. What types of chemicals are used for dyeing today and how to use products that are less dangerous to the environment with the same results, etc. The same applies to coating, put on outer garments, such as water repellent coatings that today must be non-toxic. Our weavers work hard with these questions and to meet the demands of our customers. Sweden is at the forefront of environmental issues ».

Question: How has the interest in quality textiles evolved over time?

Answer: *"This development has gone hand in hand with the environmental aspects we previously discussed, and for our brands this is extremely important. Today's competition is hard and requires that*

[59] Boman Trading supplies textile to Sweden's leading designers. Their principals are primarily in Italy and Portugal, but they also represent factories in South Korea and Turkey

each product in a collection bears those qualities. It requires both high quality and the use of a product that meets the requirements expected of it. Today's customers are much more demanding and want information about what they are buying and how a brand manages the demands that are being made today."

The trend toward sustainability was so strong that in March 2017 the "Association of Swedish Fashion brands" launched the « Swedish Fashion Ethical Charter » https://swedishfashionassociation.se/sustainability-4/swedish-fashion-ethical-charter .

In 2017 this initiative was truly unique and placed Sweden at the forefront of the international scene in making the textile and clothing industry more environmentally friendly and sustainable.

Any commercial initiative to enter this Nordic market will have to take these fundamental criteria into account and develop offers accordingly. Herewith, below a selection of 40 key Swedish players in the Textile and Clothing industry

Table 28. (W = Women, M = Men, K = Kids)

40 SELECTED SWEDISH'S TEXTILE AND FASHION COMPANIES		
Haglöfs AB	http://www.haglofs.com/se/sv-se	M / W
Nly Scandinavia AB	https://nelly.com/se/	W
Gina Tricot AB	www.ginatricot.com/se	W
Cellbes AB	https://www.cellbes.se	M / W
CRAFT Scandinavia AB	https://www.craftsportswear.com/	M / W / K
Oscar Jacobson AB	https://www.oscarjacobson.com/sv/	M
J M Alsén Design AB	https://www.morrisstockholm.com/	M / W /
Svea Simplicity Improved AB	https://www.sveasvea.com/se/	W
Lager 157 AB	https://www.lager157.com	M / W / K
Kappahl AB	https://www.kappahl.com/sv/	W
Lindex Sverige AB	https://about.lindex.com/about/	W
Nudie Jeans Marketing AB	https://www.nudiejeans.com/	M / W
Dr Denim AB	https://eu.drdenim.com//	M / W
Elvine Aktiebolag	https://shop.elvine.se/	W

Eliasson & Lundgren AB	http://twisttango.com/	W
Aktiebolaget Stenströms Skjortfabrik	https://www.stenstromsstore.se/	M
Röhnisch Sportswear AB	http://www.rohnisch.com/rohnisch_blog/	W
Fjällräven Sverige AB	https://www.fjallraven.se/	M / W / K
H&M Hennes & Mauritz AB	https://hmgroup.com/about-us/history.html	M / W / K
Gant Company AB	http://www.gant.se/	M / W / K
Acne Studios AB	https://www.acnestudios.com/	M / W
Eton AB	https://www.etonshirts.com/se/	M
J. Lindeberg AB	https://www.jlindeberg.com/se/sv/	M / W
Filippa K Group AB	https://www.filippa-k.com/se	M / W
Björn Borg AB	https://www.bjornborg.com/se/	M / W / K
Indiska Magasinet AB	https://indiska.com/se	W
Peak Performance Production AB	www.peakperformance.com	M / W
Polarn. O Pyret Aktiebolag	https://www.polarnopyret.se/	K
Tiger of Sweden AB	http://tigerofsweden.com/se	M / W
Odd Molly International AB	https://www.oddmolly.se/	W
Whyred AB	http://www.whyred.com/	M / W
Hunky Dory Holding AB	https://www.hunkydory.com/en/	W
House of Dagmar AB	https://www.houseofdagmar.com	W
T-shirt Store AB	https://www.tshirtstoreonline.com/sv/	M / W
Cross Sportswear International AB	https://cross-sportswear.com/	M / W
Dennis M AB	https://www.dennismaglic.se/	W
Weekday (Weekday Brands AB / H&M)	https://www.weekday.com/	M / W
Jascha Stockholm AB	https://jascha.se	W

Toteme AB	https://toteme-studio.com	W
Our Legacy	https://www.ourlegacy.se	M / W

2.9.2. Sweden's imports of silk products

. CAT 50

Table 29: Sweden main supplying countries for silk Cat. 50 - Years 2017, 2018, 2019 - USD (Source : UN Comtrade Database)

	2017		2018		2019	
Rank	Country of origin	Imports USD	Country of origin	Imports USD	Country of origin	Imports USD
	Total imports	287 637	Total imports	332 829	Total imports	257 234
1	China	45 829	Belgium	116 237	China	49 480
2	USA	36 804	China	50 407	USA	39 647
3	UK	32 350	India	30 843	India	35 207
4	India	31 647	USA	25 549	Germany	27 277
5	Thailand	21 566	Switzerland	25 203	Denmark	26 748
6	Hong Kong	18 519	Denmark	21 406	UK	19 770
7	Germany	18 050	Germany	17 493	UAE	13 850
8	Denmark	17 112	Hong Kong	13 349	Switzerland	11 735
9	Switzerland	16 995	UK	12 199	Norway	11 629
10	Norway	13 362	Japan	3 912	Italy	7 189
	Phillipines do not appear		Philippines do not appear		Philippines do not appear	

Highlights

- China and India are the major suppliers followed by the USA and some key EU traders in the silk sector (Germany, Switzerland, Denmark)

- The Philippines is not a supplier of Sweden for silk Cat. 50

- Swedish imports of silk Cat. 50 in 2019 are 10% lower than in 2017, and 23% lower than in 2018.

. Cat. 61

As in the case of Germany, we will focus only on HS number 6106 90 « Blouses, shirts and shirt-blouses; women's or girls', of textile materials (other than cotton or man-made fibres), knitted or crocheted » which may include silk.

Table 30: Sweden's main supplying countries for Cat. 6106 90 - 2019 (Source: UN Comtrade Database)

Ranking	Country of origin	Imported amount USD
	Total Swedish Imports	2 473 697
1	Denmark	617 023
2	Lithuania	585 622
3	China	247 507
4	Turkey	144 846
5	Cambodia	119 788
6	Bangladesh	111 965
7	Norway	101 920
8	Germany	78 766
9	Portugal	61 956
10	Italy	61 427
40	Philippines	105

Highlight

- Main suppliers are Europeans
- The Philippines is a totally marginal supplier (0.004 %)

. Cat. 62

We will consider in that category 4 product lines corresponding to the following 4 sub-headings.

. Cat. 6206 10: « Blouses, shirts and shirt-blouses; women's or girls', of silk or silk waste (not knitted or crocheted) ».

. Cat. 6204 49: « Women's or girls' dresses of textile materials (excl. of wool, fine animal hair, cotton or man-made fibres, knitted or crocheted and petticoats) ». So, this may include silk dresses coming under sub-heading 6204 49 10: (« Women’s dresses, not knitted or crocheted, of silk or silk waste ») unfortunately 8 digits code are unaccessible in UN Comtrade Database

. Cat. 6214 10: « Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted, of silk or of silk waste ».

. Cat. 6215 10: « Ties, bow ties and cravats, not knitted or crocheted, of silk or of silk waste »

Table 31: Sweden’s main supplying countries for 4 selected Cat. 62 items - Imports - 2019 / USD (Source: UN Comtrade Database)

Cat. 6214 10 silk shawls & scarves			Cat. 6215 10 silk ties		
Ranking	**Country of origin**	**Imported amount USD**	**Ranking**	**Country of origin**	**Imported amount USD**
	Total imports	2 585 345		Total imports	4 750 108
1	China	735 860	1	China	1 832 991
2	France	391 613	2	Italy	1 421 289
3	Belgium	284 300	3	UK	730 574
4	India	209 022	4	Germany	239 577
5	Italy	200 035	5	Denmark	195 489
6	Denmark	172 969	6	Belgium	95 260
7	Germany	111 753	7	Netherlands	58 784
8	Hong Kong	104 246	8	Poland	43 242
9	USA	65 022	9	France	31 295
10	Turkey	58 678	10	Norway	23 471
	The Phillipines not appear does do		Philippines do not appear on the suppliers ’ list		

Cat. 6206 10 women's blouses			Cat. 6204 49 dresses		
Ranking	Country of origin	Imported amount USD	Ranking	Country of origin	Imported amount USD
	Total imports	7 468 142		Total imports	10 961 57 8
1	China	2 597 821	1	China	2 081 133
2	Denmark	1 067 632	2	Denmark	1 667 528
3	Netherlands	932 407	3	India	1 313 553
4	Hong Kong	646 415	4	Norway	1 196 936
5	Germany	584 882	5	Germany	875 632
6	Italy	555 913	6	Netherlands	575 155
7	Norway	323 207	7	Turkey	513 622
8	Finland	166 203	8	Poland	330 925
9	Poland	153 304	9	USA	295 190
10	USA	117 251	10	Bangladesh	288 952
	Phillipines does not appear		61	Philippines	317

Highlights

- China dominates in all 4 categories
- Then come the traditional high-end European's suppliers. Good printers and producers of luxury apparels and accessories such Italy and France, good weavers such as Belgium, good silk traders such as Germany and Denmark which also benefits from its proximity to Sweden.
- The Philippines is completely absent in this segment of the Swedish market.

3. Trade regulations and market access requirements

3.1. Present trade regulations and Rules of Origin

For imports from the Philippines and destined for either the 4 EFTA countries or the 27 members of the European Union, of apparel and fashion accessories made of abaca, banana, pineapple or silk fibre, the general rule is as follows:

As long as the fabrics are of local origin, which will be very easily the case for the first three fibres, but much less obvious for silk, often imported from China by Filipino manufacturers, these products will be eligible for preferential or zero rates.

Similarly, if non-originating materials imported to make apparels or accessories locally are « sufficiently transformed » in the Philippines (this refers to any product which was produced with materials of other countries or was partially processed abroad) the preferential rates will apply.

From there on:

a - By virtue of the Free Trade Treaty signed between EFTA and the Philippines in 2016 and currently in force, import duties on categories 50, 61 and 62 of the Combined Nomenclature, which are specifically relevant to this study, are abolished.

b - Under trade preferences enjoyed, since December 2014, by the Philippines under the EU's Generalised Scheme of Preferences « plus » GSP^{+} (a special incentive arrangement which grants full removal of tariffs on two thirds of all product categories, aiming to support sustainable development and good governance), textile articles from Cat. 50, 61 and 62 enter the European territory free of customs duties.

. The rules of Origin

Origin is the « economic nationality » of goods traded in commerce.

The EU / EFTA preferential rules of origin distinguish between goods wholly obtained in a non-European country and goods sufficiently transformed in a non-European country.

In practice situations where only a single country is involved in the manufacture of a product are relatively rare (e.g. even a shirt made of 100% abaca fabric of Filipino origin can incorporate imported buttons, metal accessories, interlining etc.).

Indeed, the globalisation of manufacturing processes has resulted in many products being made from parts, materials etc. coming from all over the world.

Such products, apparels or garments, are not of course, « wholly obtained » (i.e. goods that are exclusively produced/processed only in the beneficiary/partner country and without incorporating materials of any other country), but they can nevertheless obtain « originating status ».

The condition is that the non-originating materials used (in practice: the materials imported into the beneficiary country, the fabric sometime, the buttons, the metallic parts, the sewing thread etc.) have undergone « sufficient working or processing » in the Philippines.

It must be stressed that only the non-originating materials need to be worked or processed sufficiently. If the other materials used are by themselves already originating (either by virtue of being wholly obtained, or by having been worked or processed sufficiently), they do not have to satisfy the conditions set out.

What can be considered as « sufficient working or processing », depends on the product in question.

Annex 22-03 DA published by the Official Journal of the EU https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/customs/customs_duties/rules_origin/preferential/annex_22-03_en.pdf contains a list of products in which the conditions to be fulfilled are set out, product-by- product. Part I of Annex 22-03 DA explains how to use the list.

The structure of this list has to be understood in order to be able to apply the origin criteria. The list consists of 3 columns (see illustration below)

. Column 1 states the HS heading or sub-heading,

. Column 2 contains the description of the goods which come under the HS heading / subheading

. Column 3 contains the applicable criteria allowing to consider that the non-originating materials used have undergone « sufficient working or processing » in the Philippines.

Here are, for example, the qualification criteria that can be applied to a woven garment (cat. 62)

Table 32: example of qualification criteria / « sufficient working of processing »

Harmonised System heading	Description of product	Qualifying operation (Working or processing, carried out on non-originating materials, which confers originating status)	
(1)	(2)	(3)	
Ex Chapter 62	Articles of apparel and clothing accessories, not knitted or crocheted; except for:	(a) LDCs Manufacture from fabric	(b) Other beneficiary countries Weaving accompanied by making-up (including cutting) *or* Making-up preceded by printing accompanied by at least two preparatory or finishing operations (such as scouring, bleaching, mercerising, heat setting, raising, calendering, shrink resistance processing, permanent finishing, decatising, impregnating, mending and burling), provided that the value of the unprinted fabric used does not exceed 47,5 % of the ex-works price of the product (7) (9)

What the rule says:

If the fabric has been woven locally (with imported yarns) and the garment has also been made locally (this includes the cutting operation) then it fulfils the requirements.

If the fabric has not been woven locally but has been printed locally, with at least two preparatory operations (a list of these operation is given), then it is also eligible for the classification "sufficiently worked or processed".

The understanding and practical application of these rules of origin can be tricky.

As mentioned above this varies from product to product.

Individually, each manufacturer, exporter, entrepreneur or project manager involved in exporting garments or accessories to Europe will have to look seriously at this issue, depending on the product lines, operating procedures, materials used in the articles manufactured, country of origin of that material etc. the rules of origin can be difficult to understand and to apply in practice.

Various documents[60] have been provided by the EU to clarify this difficult subject, but it is highly recommended for the companies to be assisted by experts, freight forwarders, customs specialists etc.

3.2. Market Access Requirements

Firstly, it is important to remember that the most important requirement to access the market is to have an offer that is likely to interest buyers in the target area.

That being said, we can move on to the other requirements.

3.2.1. Packaging, size marking and labelling

All this information will be provided by the buyers, it may vary slightly from one country to another but to summarize:

- The labelling must precisely indicate the composition of the product with details of the percentage of each material used, instructions and care codes, country of origin, and this in all the languages required by the customer.

- Packaging of textile and clothing articles marketed within the EU and EFTA must comply with the general requirements, which aim at protecting the environment, as well as with the specific provisions designed to prevent any risk to the health of consumers (especially babies and children)

Detailed information on these 2 topics can be found here:
https://trade.ec.europa.eu/tradehelp/labelling-and-packaging.

60 https://ec.europa.eu/taxation_customs/business/calculation-customs-duties/rules-origin/general-aspects-preferential-origin/a-guide-users-gsp-rules-origin_en , https://ec.europa.eu/taxation_customs/sites/taxation/files/resources/documents/customs/customs_duties/rules_origin/preferential/guide-contents_annex_1_en.pdf

3.3. Regulations, standards and certifications

Taking into account the analyses developed in this study and what emerges from it, i.e. the recommendation to move towards an intrinsically sustainable offer, as organic as possible, for all the fibres concerned, we will cite below a few regulations, standards, bodies and institutions that can provide such a project with support and credibility.

. REACH regulation

REACH is a regulation of the European Union, adopted to improve the protection of human health and the environment from the risks that can be posed by chemicals. In our case chemicals that may be contained in the apparel or accessories products made by Filipino suppliers.

To comply with the regulation, companies must identify and manage the risks linked to the substances they manufacture and market in the EU.

N.B. If you are a company established outside the EU, e.g. in the Philippines, you are not directly bound by the obligations of REACH, even if you export your products into the customs territory of the European Union.

The responsibility for fulfilling the requirements of REACH, such as registration lies with the importers established in the European Union, or with the only representative of a non-EU manufacturer established in the European Union.

REACH only applies to legal entities established in the European Union and the other Member States of the European Economic Area, i.e. Norway, Iceland and Liechtenstein.

In other words, it is the European customer who will have to ensure, of course in close cooperation with the Filipino manufacturer, that the products he buys comply with the REACH legislation.

Indeed, importers in the EU will need to turn to their non-EU suppliers and request information that they need to fulfil their regulatory obligations.

it is therefore important to be informed on the subject.

All details can be found here: https://echa.europa.eu/regulations/reach/understanding-reach and https://echa.europa.eu/support/getting-started/enquiry-on-reach-and-clp . Some European companies, such as the Italian fabric manufacturer « s.c. Italtextil Sarata s.r.l » (see par. 4.2.6.3) provide very detailed information on their website about this issue (detox commitment, list of prohibited substances, results of analyses of their yarns and fabrics etc.),

SIPPO
Swiss Import Promotion Programme

. Standards and certifications

In essence, a standard is an agreed way of doing something (make a product, managing a process, deliver a service etc.) written down as a set of precise criteria so they can be used as rules, guidelines or definitions.

The formal definition of a standard is a « document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context ».

The point of a standard is to provide a reliable basis for people to share the same expectations about a product or service quality, safety and efficiency. This helps to:

- Facilitate international trade.

- Provide a framework for achieving economies, efficiencies and inter-operability

- Enhance consumer protection and confidence.

For manufacturers / exporters it is important to understand that Standards are knowledge.

They are powerful tools that can help drive innovation and increase productivity. They can make companies and exporters more successful.

The compliance with a particular code or standard will generally be requested by the EU buyer as a contractual precondition to import the supplier's goods. If the maker does not respect his client's requirements, then the order will not be confirmed to her/him.

Vocabulary in this area can be a source of confusion. The word « certification » is sometime associated with organizations which do not deliver any certifications (This is, as we will see, the case of Amfori / BSCI), many other words can be ambiguous or misused.

The access to the complete texts of the standards and/or code of conducts may appear rather complicated. In general terms:

- Technical standards are available to everyone who can buy them (e.g. ISO standards https://www.iso.org, European committee for standardisation https://www.cen.eu, https://www.din.de etc.)

- Ethical (social & environmental) codes of conduct, audit's topics and details etc. are sometime freely and directly available for the makers, sometimes not (it has to go through a third party).

The ways to access institutions proposing or issuing standards as well as organizations offering audit and certification, the road to achieve complete audits and/or certification procedures may seem complex and laborious. In some cases, the manufacturer can deal directly with the institution delivering the service (audit and/or certification etc.) but it may also request third parties' intervention.

. BSCI - an entry point https://www.amfori.org/content/vision-mission-and-values

Going through a BSCI (Business Social Compliance Initiative) audit with positive results will seriously improve the exporter's chances to get EU buyers' attention.

My experience, confirmed by recent surveys results, shows that compliance with BSCI code of conduct is requested by minimum 25% of EU buyers, this figure continues to climb as well as the EU buyers' interests for BSCI audits.

To be able to successfully pass an audit the supplier must work really hard to apply and enforce the recommendations and protocols prepared by Amfori BSCI.

Amfori BSCI, headquartered in Brussels, is a global private business association bringing together over 2,400 brands, importers and retailers from 40 countries, mostly Europeans (the list of all 2400 members is available on the institution web site).

A quick look at this list shows us that out of the 2400 members 827 (34%) are German, 395 (16%) are Dutch, 188 (8%) French, 144 (6%) Danish, 114 (5%) Swedish and 107 (4.5%) Swiss, which illustrates the importance of this standard for the Nordic countries and for Switzerland.

The main purpose of BSCI is to improve the social performance of members supply chains.

In order to achieve this goal Anfori BSCI have designed an 11 principles code of conduct (ranging from fair remuneration to no child labour) intended for suppliers. Based on the code of conduct, audits can be conducted, but:

a) The audit must be requested exclusively by the client which should be an Anfori BSCI's member. Consequently, if you are a Filipino supplier and wish to be audited you should contact one linked Amfori member (ideally one of your clients) who can invite you to get involved and request the audit procedure.

b) Audits should be carried out only by accredited audit organizations. (Amori BSCI provides a list of auditing and training companies)

. OEKO TEX ® https://www.oeko-tex.com/en/

Zürich based OEKO-TEX® is a union of 18 independent research institutes in the field of textile ecology in the EU & Japan

The organization proposes various standards that can be combined together to offer clients & consumers optimal guarantee on product harmlessness and sustainability.

The well-known OEKO-TEX standard 100 certifies that a product has been reliably tested for harmful substances (chemicals & heavy metals).

Th certification is modular, it can be applied at any stage of manufacturing process (fibre, yarn, fabric, garments, accessories & trims).

The various steps leading to certification: 1 + 2 - Application form + material sample, 3 - Definition of tests & measurement criteria, 4 - On-site visit, 5 - Report, 6 - Certificate.

The closer the garments are to the skin the stricter the tests for harmful substances are. OEKO-TEX considers 4 classes of products from class 1 (closest to the skin, e.g. babies wear) to class 4.

Useful services in inputs sourcing: the standard 100 certificate provides the apparels manufacturers with access to thousands of suppliers selling OEKO-TEX certified inputs worldwide, making it easier for the makers to select reliable components (e.g. fabrics etc.) upstream in the textile supply chain.

Average garment testing can cost +/- US$ 300

It is the tested product which is certified NOT the supplier (the factory)

The basic principle of the test is to detect the presence of chemicals and/or heavy metals within the products.

Oeko-Tex standards go further - i.e. are more stringent - than EU REACH regulations which ban the use of hazardous substances (mostly chemicals).

. GOTS https://www.global-standard.org

Germany based GOTS is comprised of 4 members organizations, namely OTA (USA), IVN (Germany), Soil Association (UK) & JOCA (Japan).

GOTS mission is the development, implementation, verification, protection and promotion of the Global Organic Textile Standard (GOTS). This standard stipulates requirements throughout the supply chain for both ecology and labour conditions in textile and apparel manufacturing using organically produced raw materials.

It ensures the organic status of textiles from harvesting of the raw materials through environmentally and socially responsible manufacturing all the way to labelling, in order to provide credible assurance to the consumer.

Collaboration with GOTS could be particularly fruitful in the context of a project aimed, for example, at developing an organic silk industry in the Philippines, or strengthening the organic character of abaca, banana and pineapple fibres.

. ICEA https://icea.bio/en/who-we-are/what-we-do/

Since we are talking about organic silk, organic plant fibres and potential partners in such projects, I would like to mention the ICEA (Italian Institute for Ethical and Environmental Certification).

ICEA is one of the most important certification bodies in Europe; it operates to support fair and socially sustainable development of organic farming into other sectors related to bio.

Based in Bologna, one of the most advanced Italian cities in the reflection and implementation of sustainable solutions in many sectors of activity (the slow food movement was born in Bologna), ICEA offers a certification service for organic and sustainable textile products.

In the heart of a country at the forefront of the textile industry, ICEA can provide real expertise.

. BLUESIGN https://www.bluesign.com/en

Thanks to its expertise and seriousness, the Swiss company « Bluesign » has earned a solid worldwide reputation.

It provides solutions in sustainable processing and manufacturing to industries and brands.

Based on strict criteria, auxiliary material and services are developed to support the company specifically in its sustainable development. As an independent authority, « Bluesign » checks the progress that a company has made in this effort, provides continual further development of solutions and continuously optimizes its criteria.

Each textile product is the result of a comprehensive manufacturing process. Fibres, raw materials and many other components are needed for this, such as dyes or chemical auxiliary materials etc. Step by step « Bluesign » assess both production process and composition of the components to make sure that there is no missing link in sustainable materials and work steps and that the global sustainability of the finished product is optimized.

4. Natural fibres and market access conditions

4.1. Natural fibres in the fashion industry

On this subject, we recommend consulting the excellent report published by the non-profit organization « TextileExchange ».

It « shows the latest trends in the fibre and materials market. It includes those with improved social and environmental impacts – known as « preferred ». This in-depth report not only provides the latest facts and figures, but also offers inspiring insights into the work of leading companies and organizations – including the people creating material change. »

The report is available here: https://textileexchange.org/2020-preferred-fiber-and-materials-market-report-pfmr-released/

Interestingly, neither abaca fibres nor banana and pineapple fibres are mentioned in this report. This is a further indication that the knowledge and diffusion of these particular fibres within the fashion and textile world is still low.

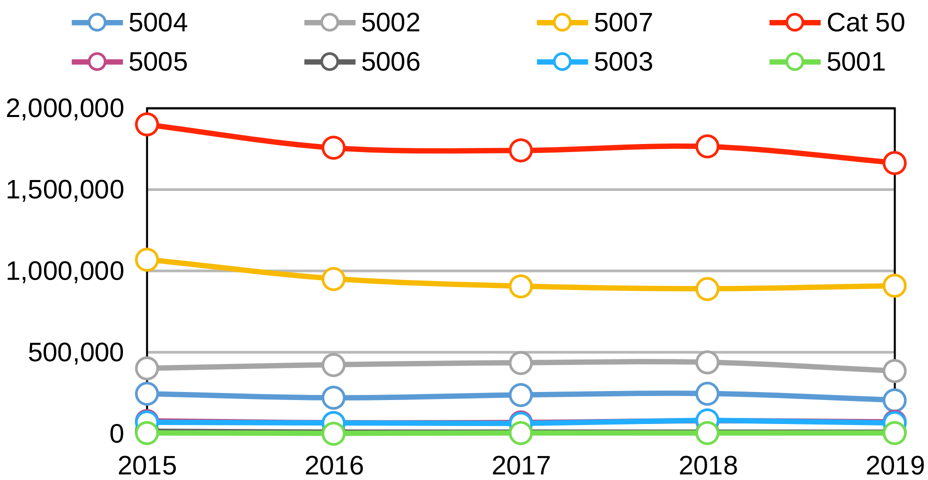
4.2. Silk fibre products: the Philippines and the main competitors

4.2.1. Worldwide demand, main importing and exporting countries of silk Cat. 50

i - Cat. 50 worldwide demand

As seen above, the chapter 50 of the CN (Combined Nomenclature) is entirely devoted to silk items. It contains 7 headings (5001 to 5007) and we will now assess their respective importance in world trade, as well as the main importing countries for each sub-category.

Table 33: evolution of the world import of the 7 silk commodities of CN chapter 50 the last 5 years



Cat. 50 global silk trade has been slowly but constantly decreasing for 5 years

Table 34 : % of each silk category in global world import of Cat. 50 for year 2019 - UN Comtrade

CN code	Description	% in total Cat.50 trade
5007	Woven fabrics of silk or of silk waste	54.7 %
5002	Raw silk (non-thrown)	23.3 %
5004	Silk yarn (excl. that spun from silk waste and that put up for retail sale)	12.5 %
5005	Yarn spun from silk waste (excl. that put up for retail sale)	4.5 %

5003	Silk waste, incl. cocoons unsuitable for reeling, yarn waste and garnetted stock	4 %
5006	Silk yarn and yarn spun from silk waste, put up for retail sale; silkworm gut	0.6 %
5001	Cocoons	0.4 %

Highlight

- Fabric is the most traded item, It offers the best added value in cat. 50. It could be a potentially interesting segment as long as the Filipino suppliers are able to meet international silk fabric buyers increasingly demanding requirements in terms of creativity, quality, social and environmental compliance and, of course, prices.

ii - Cat. 50 main importing countries

- Main importing countries for categories 5007, 5002, 5004 and 5005, in value and percentage of total world trade for each category and part played by the 4 EFTA countries.

Table 35: Countries's ranking & share in % of world imported value per sub-category 2019 - Cat. 50

	Cat. 5007 Silk woven fabrics			Cat. 5002 Raw silk		
	Country	USD	% total trade 5007	Country	USD	% total trade 5002
1	Italy	150 804 785	21,38 %	India	159 219 757	44,01 %
2	USA	63 405 218	8,99 %	Romania	72 299 013	19,98 %
3	France	57 561 697	8,16 %	Italy	39 632 519	10,95 %
4	Japan	39 665 961	5,62 %	Viet Nam	35 691 446	9,86 %
5	China, Hong Kong SAR	38 357 224	5,44 %	Japan	17 973 564	4,97 %
6	Rep. of Korea	32 468 361	4,60 %	France	9 909 573	2,74 %
7	Tunisia	31 916 499	4,52 %	Rep. of Korea	7 701 504	2,13 %

8	India	31 210 758	4,42 %	Germany	3 609 990	1,00 %
9	Madagascar	26 814 497	3,80 %	Pakistan	2 860 260	0,79 %
10	Turkey	25 278 829	3,58 %	Bulgaria	2 543 530	0,70 %
11	United Kingdom	24 723 007	3,50 %	Brazil	1 881 527	0,52 %
12	Romania	21 709 719	3,08 %	Tunisia	1 652 551	0,46 %
13	Germany	16 013 198	2,27 %	Turkey	1 362 232	0,38 %
14	Viet Nam	14 655 319	2,08 %	Poland	1 275 587	0,35 %
15	Bulgaria	12 481 864	1,77 %	Peru	1 173 221	0,32 %
EF-TA	19 - Switzerl.	6 725 673	0,95 %	20 - Switzerl.	213 717	0,06 %
	48 - Norway	775 669	0,11 %	38 - Norway	1 716	0,00 %

	Cat. 5004 Silk yarn			Cat. 5005 Yarn spun from silk waste		
	Country	USD	% total trade 5004	Country	USD	% total trade 5005
1	Italy	80 546 103	43,42 %	Italy	22 139 225	35,27 %
2	Japan	39 891 214	21,50 %	Japan	14 237 072	22,68 %
3	India	9 938 383	5,36 %	Germany	4 211 070	6,71 %
4	France	8 510 707	4,59 %	India	4 166 956	6,64 %
5	United Kingdom	8 467 819	4,56 %	Turkey	2 713 840	4,32 %
6	Romania	7 003 148	3,78 %	Pakistan	2 675 197	4,26 %
7	USA	4 703 780	2,54 %	Romania	2 171 025	3,46 %
8	Rep. of Korea	4 408 264	2,38 %	France	2 124 322	3,38 %
9	Pakistan	3 220 007	1,74 %	Indonesia	1 684 271	2,68 %
10	Thailand	3 190 150	1,72 %	USA	1 629 941	2,60 %

11	Germany	2 810 947	1,52 %	Viet Nam	772 890	1,23 %
12	China, Hong Kong SAR	2 348 265	1,27 %	United Kingdom	625 288	1,00 %
13	Austria	1 630 244	0,88 %	Rep. of Korea	422 540	0,67 %
14	Madagascar	1 184 876	0,64 %	Austria	414 564	0,66 %
15	Viet Nam	1 168 579	0,63 %	Thailand	405 884	0,65 %
EF-TA	27 - Norway	1450	0,04 %	26 - Norway	66493	0,11 %
	35 - Switzerl.	862	0,02 %	35 - Switzerl.	20000	0,03 %

Source: UN Comtrade database

Highlights

- 5007 fabric: In Europe, Italy and France are the top buyers of silk fabric.

It is intended primarily for their apparels & accessories' (scarves and ties mainly) industry.

Printing - increasingly digital - and fabric finishing are often made locally, the final fabric being used as input to produce the sophisticated, high-end silk items sold by French or Italian luxury groups and brands.

A substantial part of the imported fabric can also be sent to EU or North Africa based silk garments manufacturers (Balkans, Turkey, Lithuania etc.)

Japan uses a very large proportion of its imported silk fabrics and yarns to produce traditional Kimonos.

- Raw silk: India is by far the most important raw silk buyer worldwide as the local sericultural industry is not able to produce enough silk to meet the national demand and supply all small-scale Indian silk weavers.

Romania, Italy and Vietnam are also using the raw silk and yarns to feed their spinning mills to produce 100% silk yarns but also many blends.

- Silk yarns: Italians are the biggest importers, especially the Como area (see below par. 4.2.4.2) where many spinning mills are established. The Japanese weaving industry uses the yarns to produce both high-end fashionable fabrics sold to the international fashion companies and traditional Japanese fabrics used by Kimono makers.

Germany, France, UK, Turkey use the yarns for what is left of their spinning and weaving sector, focusing on high-end silk fabrics and sophisticated, innovative blends. They can also have the fabrics woven under their supervision in other EU countries' weaving mills.

- As seen previously EFTA countries import almost nothing in Cat. 50

iii - Cat. 50 main exporting countries

Table 36: Cat. 5002, 5004, 5005, 5007 main exporting countries in value (USD / 2019) and percentage of worldwide total export for the category. Source: UN Comtrade database

$ = total world export for the given category / USD / 2019.

	Cat. 5007 Silk woven fabrics			Cat. 5002 Raw silk		
	Country	USD	% total	Country	USD	% total
1	China	641 390 922	51 %	China	290 833 217	72,93 %
2	Italy	227 541 572	18 %	Viet Nam	39 141 476	9,81 %
3	France	66 698 805	5 %	Uzbekistan	24 488 718	6,14 %
4	India	60 210 093	5 %	Italy	23 150 436	5,80 %
5	Japan	45 610 358	4 %	Romania	10 119 618	2,54 %
6	Rep of Korea	43 945 831	3 %	Thailand	4 544 239	1,14 %
7	Hong Kong	30 105 234	2 %	Germany	3 388 530	0,85 %
8	UK	29 451 546	2 %	Bulgaria	527 718	0,13 %
9	Viet Nam	19 826 395	2 %	Singapore	512 077	0,13 %
10	Germany	19 333 670	2 %	Slovenia	343 542	0,09 %
11	Romania	16 868 241	1 %	Turkey	309 930	0,08 %
12	UAE	7 151 049	1 %	Azerbaijan	260 959	0,07 %
13	USA	6 520 755	1 %	USA	211 357	0,05 %
14	Uzbekistan	5 996 897	0 %	India	187 971	0,05 %
15	Spain	4 152 314	0 %	Kyrgyzstan	177 756	0,04 %
Phil	Philippines not listed in the 82 countries			Philippines not listed in the 37 countries		
$		1 259 640 858			398 808 649	

	Cat. 5004 Silk yarn			Cat. 5005 Yarn spun from silk waste		
	Country	USD	% total	Country	USD	% total
1	China	92 298 197	31,28 %	China	73 938 216	75,87 %
2	Romania	78 705 820	26,67 %	Italy	10 183 845	10,45 %
3	Viet Nam	41 234 681	13,98 %	Thailand	3 906 237	4,01 %
4	Brazil	32 650 732	11,07 %	Germany	2 836 473	2,91 %
5	Italy	24 564 288	8,33 %	Switzerland	2 121 835	2,18 %
6	Germany	11 275 265	3,82 %	India	1 981 697	2,03 %
7	Tunisia	3 404 535	1,15 %	Japan	1 217 416	1,25 %
8	Austria	2 156 599	0,73 %	Viet Nam	318 600	0,33 %
9	Bulgaria	2 005 947	0,68 %	Hong Kong	255 504	0,26 %
10	Japan	1 332 280	0,45 %	Uzbekistan	131 016	0,13 %
11	Hong Kong	1 217 855	0,41 %	France	127 924	0,13 %
12	Switzerland	879 101	0,30 %	Romania	85 830	0,09 %
13	USA	673 941	0,23 %	Czechia	66 743	0,07 %
14	India	465 322	0,16 %	Austria	65 318	0,07 %
15	France	335 128	0,11 %	Canada	46 939	0,05 %
Phil	Philippines not listed in the 45 countries			Philippines not listed in the 33 countries		
$		**293 199 691**			**97 283 593**	

Highlights

- In all segments China is an overwhelmingly dominant actor, over the 4 categories China controls on average 57.8 % of worldwide exports (without considering Hong Kong which is actually also part of China, even if as Special Administrative Region)
- In Europe Italy, France, Romania and Germany are doing well.
- The Philippines does not appear as an exporter in any of the categories.

Later in this paper we shall examine the reasons behind the success of China, Italy and France in that Cat. 50 trade.

4.2.2. Worldwide demand, main importing & exporting countries of Cat. 61 & 62 selected population

For these 2 categories, type 1 data (i.e. mentioning explicitly silk material as being an input into the final product) is rarely available. UN Comtrade Database provides only 6 digit sub-headings, it is insufficient for an in-depth analysis but enough to obtain very useful clues about the market's demand. We will consider in our assessment the 5 categories (3 are type 1 data & 2 are type 2)

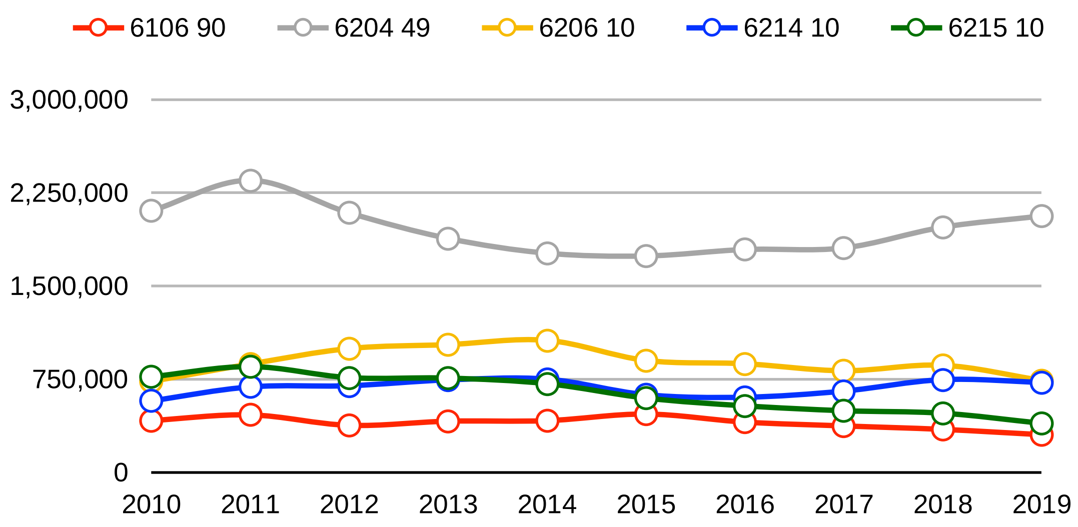
Table 37

Cat. 6106 90	Women's or girls' blouses, shirts & shirt-blouses, knitted or crocheted of other textile materials excl. cotton and man-made fibres.
Cat. 6204 49	Dresses, of other textile materials, with the exception of wool or fine animal hair, cotton, synthetic fibres and artificial fibres.
Cat. 6206 10	Women's or girls' blouses, shirts and shirt-blouses of silk or silk waste.
Cat. 6214 10	Shawls, scarves, mufflers, veils and the like of silk or silk waste
Cat. 6215 10	Ties, bow ties and cravats of silk or silk waste

i - Worldwide demand of Cat. 61 & 62 selected population

Table 38: evolution of the world import of the 5 selected categories over the past 10 years

Highlights



- Dresses (6204 49), silk shawls and scarves (6214 10) are the 2 groups showing a steady growth in sales for 5 years, the three other selected sectors are losing ground.

Let us now consider the main buyers for the 3 type 1' commodities (identified clearly as silk items) selected categories.

ii - Main importing countries for Cat. 61 & 62 selected population

Table 39: Countries' ranking & share in percentage of world imported value per sub-category

	Cat. 6206 10 Women's silk blouses			Cat. 6214 10 silk shawls & scarves		
	Country	USD	% total trade 6206	Country	USD	% total trade 6214
1	USA	162 217 815	23,57 %	France	106 568 358	17,51 %
2	France	78 516 641	11,41 %	USA	84 260 370	13,85 %
3	Italy	62 062 692	9,02 %	China, Hong Kong SAR	56 732 182	9,32 %
4	United Kingdom	51 643 375	7,50 %	Italy	48 908 096	8,04 %
5	Germany	50 271 367	7,31 %	Japan	41 172 382	6,77 %
6	China, Hong Kong SAR	44 335 206	6,44 %	United Kingdom	31 418 895	5,16 %
7	Switzerland	38 544 823	5,60 %	Germany	29 313 638	4,82 %
8	Japan	19 390 690	2,82 %	Singapore	25 444 723	4,18 %
9	Netherlands	18 091 324	2,63 %	Madagascar	20 173 694	3,32 %
10	Spain	16 640 633	2,42 %	Rep. of Korea	20 054 420	3,30 %
11	Russian Federation	15 367 627	2,23 %	Switzerland	17 627 039	2,90 %
12	Australia	14 410 818	2,09 %	Netherlands	14 121 066	2,32 %
13	Canada	12 857 609	1,87 %	Spain	12 392 261	2,04 %
14	Austria	11 950 529	1,74 %	Canada	11 328 352	1,86 %

15	Rep. of Korea	11 574 200	1,68 %	China, Macao SAR	11 088 516	1,82 %
EF-TA	20 - Norway	5 201 655	0,76 %	30 - Norway	1 746 990	0,29 %
	58 - Iceland	250 251	0,04 %	62 - Iceland	96 757	0,02 %

Cat. 6106 90 Knitted Women's blouses

	Country	USD	% total trade 6215		Country	USD	% total trade 6215
1	Singapore	24 172 986	10,39 %	**9**	Japan	7 201 262	3,10 %
2	United Kingdom	22 563 714	9,70 %	**10**	Israel	6 444 000	2,77 %
3	USA	19 447 326	8,36 %	**11**	Brazil	6 300 099	2,71 %
4	France	11 541 040	4,96 %	**12**	South Africa	6 237 812	2,68 %
5	Canada	10 651 077	4,58 %	**13**	Spain	5 610 758	2,41 %
6	Denmark	9 632 655	4,14 %	**14**	Greece	5 542 778	2,38 %
7	China, Hong Kong SAR	8 265 265	3,55 %	**15**	Malaysia	5 420 115	2,33 %
8	Germany	7 941 215	3,41 %	**EF-TA**	16 - Norway	5 136 133	2,21 %
					24 - Swizerland	3 267 196	1,40 %
					57 - Iceland	262 652	0,11 %

Source: UN Comtrade database

Cat. 6215 10 silk ties

	Country	USD	% total trade 6215		Country	USD	% total trade 6215
1	USA	92 384 252	24,94 %	**9**	Spain	11 052 956	2,98 %
2	Japan	68 251 603	18,43 %	**10**	Canada	10 325 055	2,79 %
3	United Kingdom	24 853 755	6,71 %	**11**	Rep. of Korea	9 650 391	2,61 %

	Cat. 6215 10 silk ties						
4	Germany	20 042 802	5,41 %	12	China, Hong Kong SAR	8 524 398	2,30 %
5	Italy	17 959 100	4,85 %	13	Singapore	7 053 145	1,90 %
6	France	16 895 127	4,56 %	14	Austria	5 854 055	1,58 %
7	Switzerland	12 851 629	3,47 %	15	Portugal	4 869 596	1,31 %
8	Netherlands	11 500 577	3,11 %	EF-TA	22 - Norway	2 397 170	0,65 %
					47 - Iceland	256 585	0,07 %

Source: UN Comtrade database

Highlights

- In Europe, for Cat. 62 silk items, key buyers are clearly British, French, Italian and German. For good silk providers they should be the priority target markets.

- For Cat. 61 the only item part of our selection is the « knitted Women's blouses of other textile materials with the exception of cotton and man-made fibres » that may include blouses made of silk but we cannot say in which proportion (type 2 data). There is no type 1 data available for Cat. 61 in the UN Comtrade data base.

In spite of this limitation it is important to have at least 1 type 2 data item in that category 61 to illustrate the market's peculiarities of each commodity group. This distinctiveness, sometimes subtle, shall be taken into account each time a demand analysis is done for a specific apparel or accessory.

The above table illustrates how relatively small countries like Singapore, Denmark and Israel turn to be, in spite of their size, very important buyers of Womens knitted blouses, in the same vein large countries such as Brazil and South Africa are not appearing in the ranking. On the contrary a country like Italy, always ranking in the top 5 for the 3 previous silk items of Cat. 62, appears only in 17th position for knitted women's blouses.

This shows how statistical studies can help to ensure the best possible matching between product(s) and targeted market(s), all the more so, when results may often be counter intuitive.

- As already stated, EFTA countries, with the notable exception of Switzerland, play an insignificant role in that trade.

- It should also be noted, the importance, in value, of the European silk scarves and silk ties market, respectively USD 300 millions and USD 151 millions (Europe including EFTA countries, UK, Turkey, Armenia, Bosnia Herzegovina, Macedonia)

Now that we have seen the main importing countries let us look at the competition, i.e. the main exporting countries for the same Cat. 61 and Cat. 62 items.

iii - Main exporting countries for Cat. 61 & 62 selected population

Table 40: World's leading exporting countries of selected sub-heading 61 & 62 - USD - 2019 (Source: UN Comtrade database

	6106 90 Women's or girls' blouses, shirts and shirt-blouses, knitted or crocheted of other textile materials with the exception of cotton and man-made fibres.		6206 10 Blouses, shirts and shirt-blouses; women's or girls', of silk or silk waste (not knitted or crocheted)		Average unit price per exported piece (USD)
1	Pakistan	61 691 103	Italy	182 390 727	114
2	Viet Nam	51 692 665	France	81 893 410	151
3	India	46 267 698	China, Hong Kong	64 745 713	51
4	Turkey	31 321 914	Germany	30 762 034	75
5	Myanmar	29 595 737	United Kingdom	30 030 525	64
6	Indonesia	28 997 822	Myanmar	18 309 742	4
7	France	28 000 924	Switzerland	15 065 932	184
8	Italy	22 781 522	USA	13 918 567	12
9	United Kingdom	13 615 155	Netherlands	13 858 661	47
10	Denmark	12 831 033	Viet Nam	11 519 824	132
11	Greece	9 739 510	Bulgaria	11 288 714	26
12	Singapore	8 372 626	India	11 204 417	11
13	Poland	8 050 372	Romania	10 909 109	31
14	Philippines	7 617 048	Spain	10 509 857	36
15	Portugal	6 940 275	Denmark	9 952 023	63
			46 out of 72 – Philippines	205666	

	6214 10 Shawls, scarves, mufflers, mantillas, veils and the like; of silk or silk waste (not knitted or crocheted)		6215 10 Ties, bow ties and cravats of silk or silk waste	
1	France	241 665 202	Italy	125 096 746
2	Italy	159 525 937	France	58 781 605
3	India	73 075 998	Germany	19 992 000
4	Tunisia	27 493 522	United Kingdom	14 360 734
5	China, Hong Kong SAR	26 598 745	Netherlands	10 700 059
6	Germany	9 314 667	Switzerland	8 300 926
7	United Kingdom	7 344 617	Singapore	6 679 345
8	Singapore	6 130 522	Spain	6 576 798
9	Netherlands	5 937 022	USA	5 137 808
10	Switzerland	5 213 172	China, Hong Kong SAR	4 439 501
11	USA	4 840 409	Sweden	4 289 047
12	Turkey	4 305 442	Denmark	1 232 485
13	Spain	4 279 409	Thailand	861 893
14	Austria	2 547 388	India	817 041
15	Madagascar	2 443 401	Viet Nam	814 007
	59 out of 72 – Philippines	11420	Philippines no part	Over 70 countries

Source: UN Comtrade database

Highlights

- One point merits comments: a proportion of silk shirts and scarves exported by the Italian, French, British or German fashion brands, may actually be produced in China. For example, amongst the 1.6 million silk shirts exported by Italy in 2019, at an average price of USD 114 per piece, can certainly be found some of the pieces imported by Italy from China (following orders placed by Italian fashion companies to Chinese silk blouses manufacturers) at an average price of USD 51 per piece, the difference being the margin taken by Italian brands when selling their collection to retailers around the world.

The high average prices of silk blouses exported by Italy, France and also Switzerland give a good indication of their positioning on luxury and high-end segments; as mentioned before (see par. 2.2.1.1.2) these countries have the highest worldwide concentration of top brands, obviously their expectations vis-à-vis their suppliers are proportional to the selling prices: extremely high.

On the other hand, Germany, UK, Denmark, the Netherlands and Spain are markets where many silk apparels and accessories are sold at much more competitive prices. Even if the luxury segment is also present in these areas, many local fashion companies are designing, importing and selling silk apparels and accessories intended for a medium / high-end segment where prices really matter. Buyers remain highly demanding but not as much as in the previous segment.

- Another salient fact illustrated by the above chart and already addressed briefly above (see par. 2.3.1.1.2 about Norway's Cat. 62 imports), is a typical feature of the international silk market: the respective leading position of China on one product group and of France and Italy on another.

Still dominant for products requiring relatively important manufacturing / sewing time, such as silk blouses and jackets (all the more so as silk, specially light weight and slippy satin for example, can be a very delicate and difficult fabric to work), the Chinese's offer is facing much stiffer competition when it comes to accessories such as shawls, scarves and ties where sewing operations are minimal (and can be automated ; e.g. machine fringing of silk scarves edges etc.) but requirements regarding quality of fabric and especially accuracy and creativity of printing, maximal.

In that latter case both Italy and France, extremely creative and offering high-end silk printing facilities on top quality fabric (satin, twill, georgette etc.), are doing very well and often better than China (cf. silk ties and silk scarves sectors) which nevertheless is closing that gap.

4.2.3. Silk apparels & accessories: any potential to explore for EFTA and EU markets?

N.B. This is the market for classic silk, i.e. non-organic silk.

On the basis of the information collected above on the 4 EFTA countries and the exchanges we had with some buyers we should seek to identify commodity's groups that could present a reasonable potential on the EU / EFTA markets.

The answers to the questionnaire set the tone. Indeed, none of the European silk-using companies that replied to the questionnaire (question Q4) ever imported silk from the Philippines. To the question Q5 « How would you characterize the position of the Philippines in the global trade of fashion clothing and accessories » all replied, « marginal or very marginal position ».

- For the Swiss market

Chances are extremely limited with fabrics and yarns; imports are constantly decreasing. Knitted apparels imports are growing, especially trousers and skirts that could offer some opportunities for Filipino makers, as long as other requirements are met (flexibility, quality, certification etc.).

Women's pants, overalls, shorts etc. cover a particularly large range of products (casual, beach, sports, high-end, « athleisure », formal etc.) which allow the use of many different types of fabrics. A creative offer combining locally available Filipino fibres to develop trendy and qualitative fabrics specifically designed for pants development could be a path to explore (pants request also perfect patterns making). This also applies to woven pants (see below)

As mentioned above, the knitted scarves and shawls group is interesting. Volumes are substantial and scarves are amongst the simplest products to knit, they can even be knitted quite quickly on flat knit hand looms or even by hand.

An accessory must be « spectacular » in one way or another, creativity is a top requirement here: innovative yarns blends combination, special colours (e.g. natural dye) and texture should be experimented. That could be an opportunity for Filipinos to use, to « recycle », into modern designs, some of their traditional knitting or crocheting technics, as well as to find some new ways to use local fibres (abaca, banana, pineapple) to combine them with silk in order to propose new blends, new textures, shawls with a new visual appearance, to the international buyers' community.

In this perspective, the role of designers becomes strategic.

In woven items (Cat. 62) skirts and trousers could be an option, but the level of requirements of Swiss buyers being what it is, only top-level suppliers will stand a chance. Finally, there is the woven shawls and scarves group, it has been on a downward trend, but volumes remain consequent and again it is a product segment very receptive to what is new and creative.

- For the Norwegian market

Like for Switzerland, chances to sell fabrics or yarns are very limited. For knitted items, the traded volume is stable, dominated by China, but trousers, as well as scarves and shawls groups may offer some opportunities, as long as new and attractive proposals are made to buyers.

The imports of silk woven items by Norway is decreasing regularly, in particular for blouses. Italian and French high-end silk scarves are imported in volume. This high-end segment proposing both creativity and luxury offers some opportunities for suppliers with new ideas (fabric blends, texture, techniques, finishing, visual appearance etc.) and irreproachable standard of quality.

If small countries such as Nepal and Belgium manage to sell scarves to Norway that means they offer something special, Belgium still counts with a few extremely good weaving mills and Nepal may offer special types of silk or finishing techniques giving the scarves a genuine added value.

- For the Icelandic market

Iceland, due to his size, is not a promising market. The country does not import Cat. 50 items and buys insignificant quantities of Cat. 61

The only opportunities, if any, could be in Cat. 62, particularly in Men's shirts, Women's trousers and dresses, even silk scarves and silk ties eventually, but in that category Icelandic buyers mostly import from China for prices, or from EU (France, Italy and UK) for branded products.

- For the German market

Germany having drastically reduced its purchases of yarns and fabrics (Cat. 50), the Philippines not being present at all on the market of categories 61 and 62, nor on the radar of German silk buyers for whom the Philippines is not a supplier country of this material, the chances of seriously entering this market seem to me, in the present state of affairs, very slim.

- For the Danish and Swedish markets

Filipino silk suppliers are totally absent from the Danish market for all categories concerned, 40th supplier to Sweden for category 61, absent in the other 2 categories, not listed by local buyers as producer and supplier of "classic" silk.

Therefore, given the current state of supply and the level of presence, real as well as perceived, of the Philippine silk industry on the international fashion market, the chances for Filipino silk producers to gain access to these two markets in particular and to the EU market in general, seem to me extremely limited.

4.2.4. Existing Competition¨

Like stated above, from a strictly business point of view, China, Italy and France are among the Philippines' direct competitors on the international fashion silk market. That is why we have decided to focus our analysis of the competition on these three countries with a particular emphasis on China.

Examining the respective strengths and the strategies implemented by these key players, sharing both a deep-rooted silk tradition and a long experience, to be competitive on today's international fashion silk market, should provide us with valuable insights on these multiple factors that make competitiveness possible.

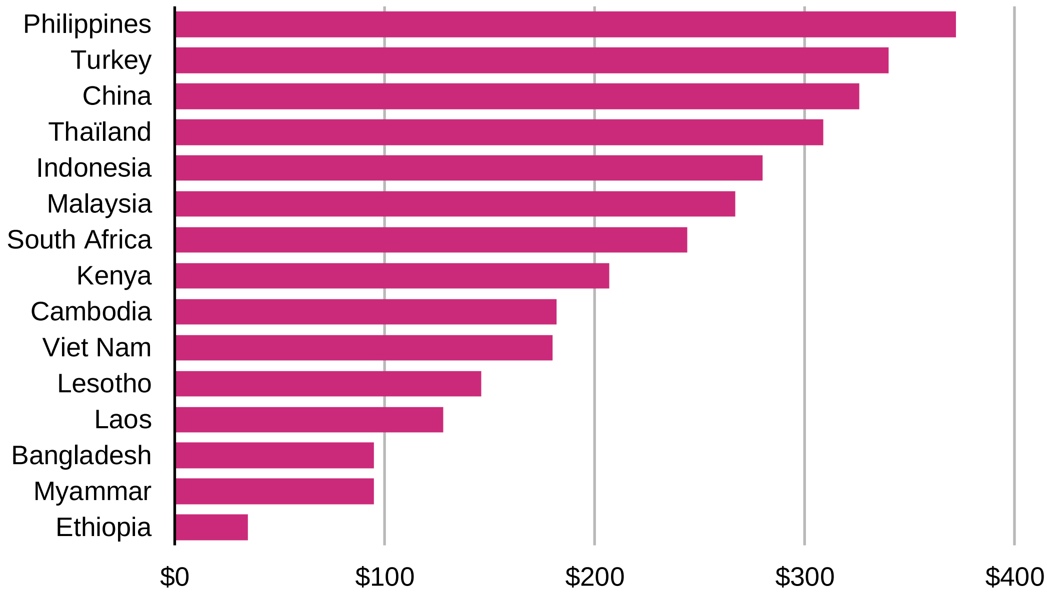
We believe these experiences and stories could be a source for reflection, exchange, dialogue, as well as a stimulus and an inspiration to help design tomorrow's silk industry in the Philippines.

But first we need to address a key issue: labour costs.

- Labour costs

The sericulture industry requires a lot of manpower, so the cost of labour is of particular importance and weighs heavily in the cost structure.

I have not found any comparative studies on agricultural labour costs in mulberry gardens, but figures



for the textile industry are readily available, and the comparison does not tilt in favour of the Philippines, as shown in the table below. (Source: Just-Style & NYU Stern Research Centre)

Table 41: Monthly wages for garment workers 2018 in USD

Philippines labour costs are not cheap.

Of course this is a simple indication that does not underestimate the value of other parameters critical to achieving competitiveness such as labour productivity, process time, working environment, capacity utilisation etc., but it still provides us with a clear indication of the positioning of the Philippine textile industry in the international competition.

4.2.4.1 China

It is general knowledge that China is, and always has been, the world leader in raw silk production with an annual output fluctuating (depending on the year) between 75 and 80% of the worldwide raw silk production. Even if rising costs are forcing many farmers to give up sericulture and in spite of some silk traditional regions having experienced a decline in their silk production activity in recent years, China has produced in 2017/2018 approximately 150,000 tons of raw silk, followed by India, Uzbekistan, Thailand and Brazil.

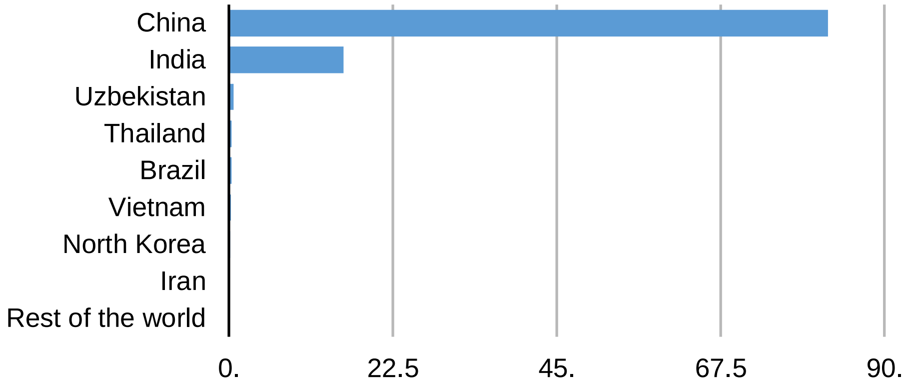


Table 42: top 8 silk producing countries (in % of world output of raw silk)

Highlights

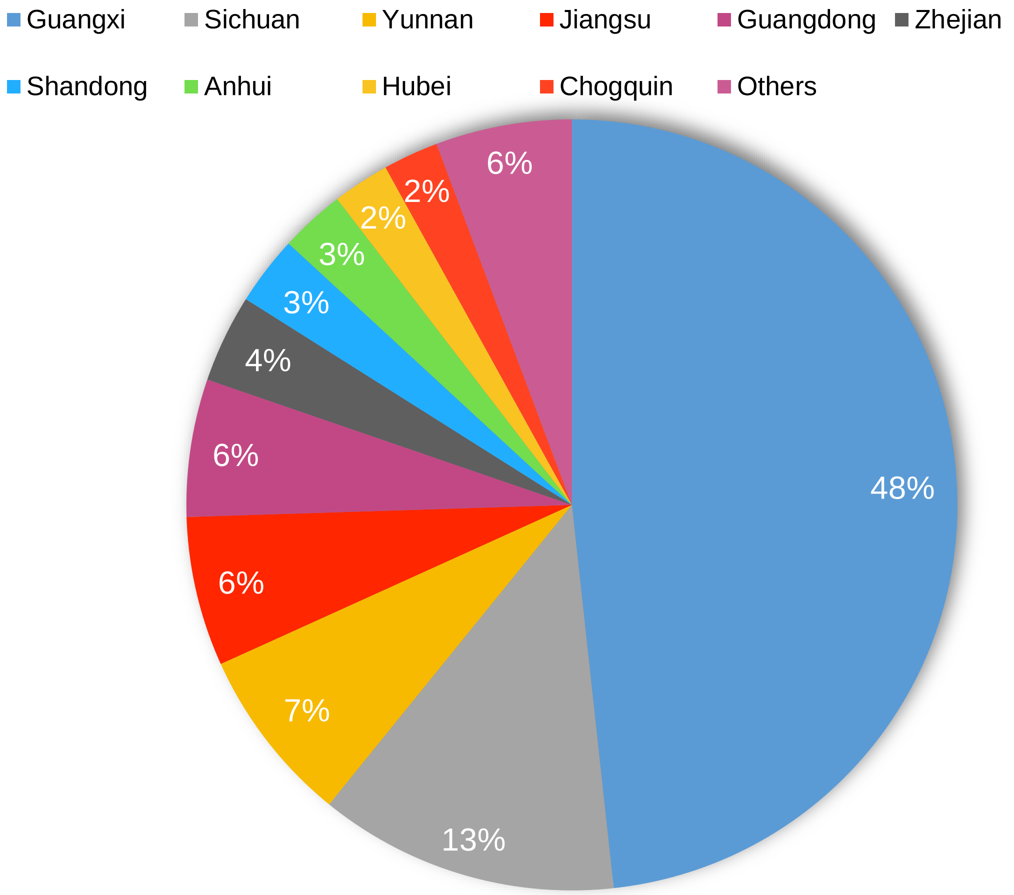
- Together China and India are producing 95 to 97% of world silk
- Comparatively Philippines silk production is extremely limited:

Table 43: Philippines silk production in m/tonnes and in % of world production

2013	2014	2015	2016	2017
1	1.1	1.2	1.82	1.5
0.00062 %	0.00061 %	0.00059 %	0.00094 %	0.00084 %

When it comes to sericulture, China, with that market share and 6000 years of silk history, silk transformation and trade, represents an enormous reservoir of experience, know-how and talent. It is for this reason that we have chosen to particularly develop the part concerning China's silk industry (from silkworms rearing to silk fabrics and apparel production and trade).

Of course, in view of the size of the country, an exhaustive approach is inconceivable in the context of the present survey, so we will focus on what we believe are a few Chinese silk industry's key players illustrating both some salient aspects of the sector, as well as some strategies adopted by local silk



companies to address today's fashion market challenges.

It is our hope and opinion that valuable lessons and inspirational ideas can be drawn from studying Chinese silk professionals' experiences and Chinese silk companies' strategies to deal with a constantly evolving international silk fashion market.

i - Main Chinese silk production areas

Table 44: top silk (cocoons) producing Chinese provinces (year 2016)

Highlights

- 80 % of Chinese silk is produced in 6 regions (Guangxi, Sichuan, Yunnan, Jiangsu, Guangdong and Zhejiang)

- The South / South West part of China (Guangxi, Southern part of Sichuan, Yunnan and Guandong) is, quantity wise, the main silk production area of the country. The second comprises the 3 provinces located along China East coast (Zhejiang, Jiangsu and Shandong) and Anhui

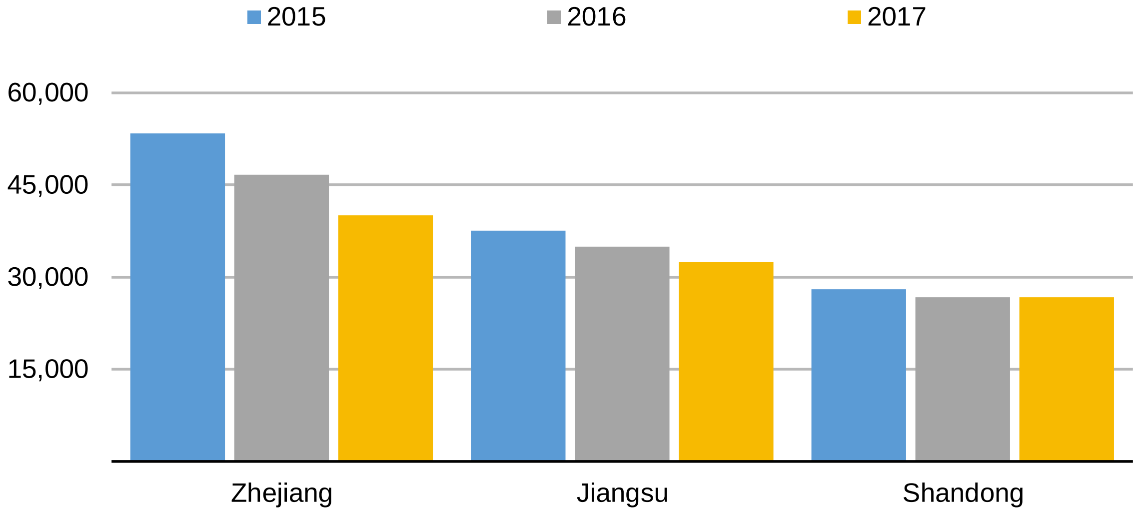
Figure 37: The 8 main Chinese silk production provinces on the map

ii – Situation of the Chinese silk cocoons' market

We just saw that China is roughly divided in 2 main silk regions: East and West. That division helps to understand the causes of one of today's Chinese silk sector's most serious problems, the shortage of high quality cocoons, i.e. cocoons allowing to weave 5A grade and above raw silk.

The demand for high quality cocoons increases both internationally and locally and most of the silk market's experts consider that this trend will continue in the coming years, but Chinese supply is not meeting that demand. Why?

- Because the production volumes coming from the Eastern region are constantly decreasing. The East is the cradle of the Chinese silk industry, traditionally it is the region producing the highest quality of cocoons but, over the last 20 years, the unprecedented growth rate of industrialization on the East



coast considerably sped up the process of rural migration towards urban and industrial areas and consequently the decline of interest for agricultural and sericultural activities, especially among the younger generation.

- According to Mr Jin Yao, chairman of the « Babei group » (see below) « Zhejiang could produce 80,000 tonnes of cocoons annually at its peak, but currently it has dropped to 20,000 tonnes[61] »

Table 45: Evolution of mulberry gardens surface in hectares (2015 to 2017)

- Operating costs, in particular payroll and land prices (industrialisation is consuming many farmlands pushing their price up) are increasing, making sericulture activity less attractive.

- High levels of pollution and excessive use of insecticides (in particular fenoxicarb, toxic for fishes) are affecting mulberry trees in many Chinese sericultural regions.

- Silkworm rearing used to be the main source of income for many Eastern rural households, it is not the case anymore. Local people do not pay the same attention to sericulture, do not make the necessary technological investment, do not innovate, which leads to a decline in the quality of silk cocoons harvested.

[61] Interview of Mr Yao in: http://www.xinhuanet.com/english/2019-01/22/c_137765585.htm

- The Chinese cocoon price-setting mechanism is complex and not very transparent which creates a certain confusion on the national cocoon market and does not encourage producers.

- The sericulture areas of Western China are vast (as we have seen Guanxi produce almost half of all Chinese cocoons), but the climate (tropical with many variations) is not suitable for producing high quality cocoons and many local silkworm breeders lack experience & technical knowledge[62], so that region only supplies approximately 20% of high quality total Chinese cocoons.

The difficulty experienced by the Chinese sericulture sector in meeting the local and international demand for quality cocoons is pushing Chinese prices upwards and thereby widening market access opportunities to new supplier countries, even Europeans. After 2015 in the northern Italian region of Veneto some companies have even tried to breed silkworms again as the demand for locally produced silk was growing, unfortunately, the experiment turned out to be short-lived because it was not economically viable.

The Philippines could also take advantage of this opportunity, provided that it offers silk products of a quality level perfectly adapted to the expectations of the European market (minimum 5A)

iii - Main silk commodities exported by China

A synthetic review of the main silk items exported by China will provide us with some useful clues regarding international silk demand.

Table 46: main silk commodities exported by China Jan. to Aug. 2019. China Cocoon & Silk Exchange

Commodities (groups and sub-groups)		Value USD millions	Units	Quantity	% of total	Average unit price USD
Silk made-up USD 499 millions 42 % of total exports	Woven apparels	339	set	12 971 564	28.6 %	26.12
	Knitted apparels	52	set	6 134 886	4.39 %	8.48
	Ties	71	piece	18 737 071	6 %	3.77
	Scarves	34	piece	11 792 054	2.87 %	2.87
	Carpets	3	piece	25 742	0.2 %	120.09
silk fabrics USD 314.7 millions 26.6% of total exports	Grey stage	216	meter	37 059 987	18.24 %	5.84
	Dyed or printed	97	meter	10 594 963	8.2 %	9.18
	Others	1.7	meter	2 899 572	0.14 %	0.6

[62] E.g. locals not always use the most appropriate varieties of worms and mulberry, use inappropriate drying and silk reeling procedures etc.

Commodities (groups and sub-groups)		Value USD millions	Units	Quantity	% of total	Average unit price USD
Long filament yarns $ 211 millions 17.8% of total export	Mulberry silk	137	kg	2 737 584	11.6 %	50.19
	Silk yarns	49	kg	1 005 526	4.1 %	48.75
	Tussah silk	25	kg	366 663	2.1 %	68.56
Short filament yarns $67.4 millions 5.6 % of total exports	Silk waste	23	kg	856 433	1.9 %	26.41
	Yarns spun from silk waste	44	kg	1 292 838	3.7 %	34.22
	Spun from noil	0,44	kg	8 593		51.31
Silkworm cocoon		0.31	kg	1 042		29.89
Others		91	piece	8 266 581	7.7 %	11.03
	TOTAL	1 184				

Highlights

- Woven apparels are largely dominant (in value & average unit price). It is where highest added value is. Knitted apparels exports are smaller than ties exports.

- Ties exports value is about twice that of scarves with higher average price

- Grey fabrics are bought by countries like Italy and France, they do the printing and finishing locally. Of course, added value is higher on dyed fabric and even more so on printed one. This explains why leading Chinese makers are investing in state-of-the-art printing equipment (see below par. v « a few Chinese key players »)

iv - Chinese silk commodities prices

Silk prices, like other commodities prices, fluctuate according to offer and demand and the rate of change in a relatively short period can be important, as illustrated in the chart below.

N.B. Raw silk (white steam filature) Grade 3A 20/22D is the usual benchmark used to study silk prices' evolution.

Table 47: fluctuation of raw silk Grade 3A (low) 20/22D prices on a 90 days period
Source: http://www.sunsirs.com/uk/prodetail-322.html Approx. Exchange rate RMB 1 = USD 0.14

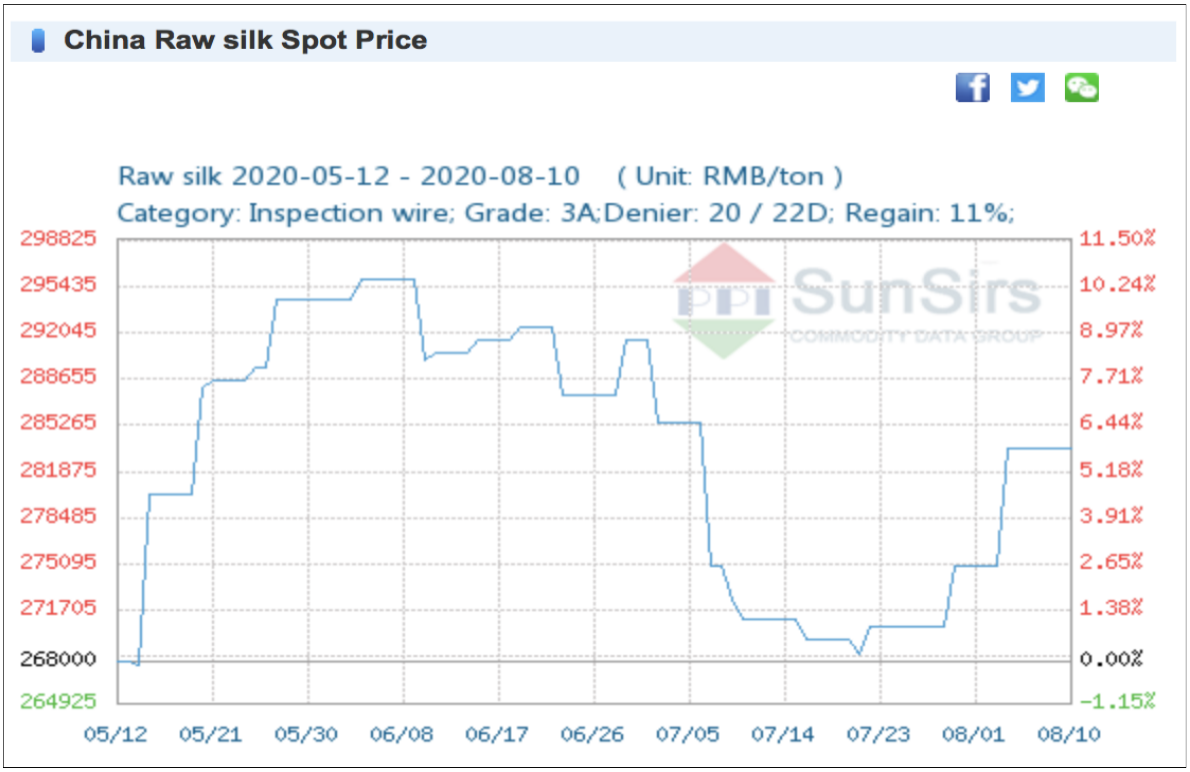


Table 48: Chinese silk commodities price list - Prices of week 30 / 2020

ID	Commodity	Specs.	Grade	Unit of Value	Price Range
	COCOONS, FLOSS, WASTE, RAW SILK				
1	Dried Cocoon		3A-4A	USD / Ton	12,243 - 13,778
2	Dried Cocoon		5A-6A	USD / Ton	14,782 - 17,652
3	Double Cocoon			USD / Ton	12,629 - 14064
4	削口茧 (cut cocoons)			USD / Ton	11,195 - 12,630
5	丝绵 (silk floss)		Pupa Wadding	USD / Ton	27,986 - 29278
6	丝绵		黄斑与次茧 (macula & sub cocoons)	USD / Ton	35,305 - 38,032

ID	Commodity	Specs.	Grade	Unit of Value	Price Range
7	丝绵		双宫与上茧 (double & upper cocoons)	USD / Ton	41,620 - 43773
8	Knub (waste)			USD / Ton	11,912 - 13,347
9	蚕蛹 (silkworm chrysalis)		B（鲜冻）Class B	USD / Ton	1,119 - 1,263
10	White Steam Filature = raw silk	20/22D	厂检(3A-4A) factory inspection	USD / Ton	39,109 - 40,687
11	White Steam Filature	20/22D	商检(3A-4A) commodity inspection	USD / Ton	40,687 - 42,123
12	White Steam Filature	20/22D	(5A)	USD / Ton	44,993 - 50,017
13	White Steam Filature	20/22D	(6A)	USD / Ton	50,017 - 54753
14	White Steam Filature	40/44D	厂检（大4A-5A) factory inspection	USD / Ton	39,970 - 42,840
15	Doupion Silk	100/120D		USD / Ton	41,118 - 44,275
	FABRICS				
16	Habotai	11206	门幅 (width) 140cm 8 姆米 (Momme)	USD / Metre	4.30 - 5.16
17	乔其 (Georgette)	10102	门幅114cm 10姆米	USD / Metre	4.09 - 5.09
18	Plain Satin	14654	门幅114cm 16姆米	USD / Metre	7.03 - 8.18
19	Crepe de chine	12102	门幅114cm 14姆米	USD / Metre	5.74 - 6.39
20	Crepe de chine	12101	门幅114cm 12姆米	USD / Metre	4.81 - 5.60
21	弹力段 stretch		门幅140cm 14姆米	USD / Metre	7.17 - 8.04
22	真丝雪纺 Chiffon	06mm	门幅140cm	USD / Metre	3.37 - 4.23
23	Crepe de chine	12101	门幅:114CM 姆米:12M/M 剑杆 = Rapier loom	USD / Metre	4.76 - 5.05

ID	Commodity	Specs.	Grade	Unit of Value	Price Range
24	Crepe de chine	12102	门幅:114CM 姆米:14M/M 剑杆	USD / Metre	5.80 - 6.08
25	Crepe de chine	12103	门幅:114CM 姆米:16M/M 剑杆	USD / Metre	6.31 - 6.60
26	Crepe de chine	12104	门幅:114CM 姆米:18M/M 剑杆	USD / Metre	7.21 - 7.50
27	Crepe de chine	12101-140	门幅:140CM 姆米:12M/M 剑杆	USD / Metre	5.67 - 5.96
28	Crepe de chine	12131	门幅:140CM 姆米:14M/M 剑杆	USD / Metre	6.83 - 7.12
29	Crepe de chine	12293	门幅:140CM 姆米:16M/M 剑杆	USD / Metre	7.73 - 8.02
30	Crepe de chine	12104-140	门幅:140CM 姆米:18M/M 剑杆	USD / Metre	8..38 - 8.67
31	重绉 = Heavy (CdC)	13	门幅:114CM 姆米:23M/M 剑杆	USD / Metre	10.06 - 10.35
32	重绉	13	门幅:140CM 姆米:23M/M 剑杆	USD / Metre	11.74 - 12.03
33	重绉	23	门幅:114CM 姆米:30M/M 剑杆	USD / Metre	13.03 - 13.32
34	重绉	23	门幅:140CM 姆米:30M/M 剑杆	USD / Metre	14.84 - 15.13
35	重绉	22	门幅:114CM 姆米:40M/M 剑杆	USD / Metre	16.13 - 16.42
36	重绉	22	门幅:140CM 姆米:40M/M Rapier	USD / Metre	19.36 - 19.65
37	Plain Satin	14360	门幅:95CM 姆米:12M/M 剑杆	USD / Metre	5.28 - 5.57

ID	Commodity	Specs.	Grade	Unit of Value	Price Range
38	Plain Satin	14656	门幅:114CM 姆米:12M/M 剑杆	USD / Metre	5.93 - 6.22
39	Plain Satin	14547	门幅:140CM 姆米:12M/M 剑杆	USD / Metre	6.96 - 7.25
40	Plain Satin	14548	门幅:140CM 姆米:14M/M 剑杆	USD / Metre	8.12 - 8.41
41	Plain Satin	14654	门幅:114CM 姆米:16M/M 剑杆	USD / Metre	51.2 - 53.2
42	Plain Satin	14394	门幅:140CM 姆米:16M/M 剑杆	USD / Metre	8.30 - 8.59
43	Plain Satin	14101	门幅:114CM 姆米:18.5M/M 剑杆	USD / Metre	8.25 - 8.54
44	Plain Satin	14658	门幅:140CM 姆米:18.5M/M 剑杆	USD / Metre	9.67 - 9.96
46	弹力缎 Stretch Satin	14-140	门幅:140CM 姆米:14M/M 剑杆	USD / Metre	7.47 - 7.76
47	弹力缎	16-108	门幅:108CM 姆米:16M/M 剑杆	USD / Metre	6.57 - 6.86
48	弹力缎	16-140	门幅:140CM 姆米:16M/M 剑杆	USD / Metre	8.25 - 8.54
49	弹力缎	19-108	门幅:108CM 姆米:19M/M 剑杆	USD / Metre	8.25 - 8.54
50	弹力缎	19-140	门幅:140CM 姆米:19M/M 剑杆	USD / Metre	9.80 - 10.09
51	双面缎 double side satin	22姆米-114	门幅:114CM 姆米:22M/M 剑杆	USD / Metre	10.31 - 10.60
52	双面缎	25姆米-114	门幅:114CM 姆米:25M/M 剑杆	USD / Metre	11.09 - 11.38

ID	Commodity	Specs.	Grade	Unit of Value	Price Range
53	双面缎	30姆米-114	门幅:114CM 姆米:30M/M 剑杆	USD / Metre	12.76 - 13.05
54	顺纡乔其 Shung Rong Georgette (light weight, similar crinkle GGT	52顺乔	门幅:114CM 姆米:5M/M 剑杆	USD / Metre	2.70 - 2.99
55	顺纡乔其	52顺乔	门幅:140CM 姆米:5M/M 剑杆	USD / Metre	2.88 - 3.17
56	顺纡绉 smooth crepe	52-140顺纡绉	门幅:140CM 姆米:10M/M 剑杆	USD / Metre	5.15 - 5.44
57	顺纡绉	12399	门幅:114CM 姆米:16M/M 剑杆	USD / Metre	7.34 - 7.63
58	顺纡绉	12399-140	门幅:140CM 姆米:16M/M 剑杆	USD / Metre	8.38 - 8.67
59	雪纺 Chiffon	6姆米雪纺	门幅:114CM 姆米:6M/M 剑杆	USD / Metre	3.34 - 3.63
60	雪纺	6姆米-140雪纺	门幅:140CM 姆米:6M/M 剑杆	USD / Metre	3.60 - 3.89
61	雪纺	8姆米雪纺	门幅:114CM 姆米:8M/M 剑杆	USD / Metre	3.99 - 4.28
62	雪纺	8姆米-140雪纺	门幅:140CM 姆米:8M/M 剑杆	USD / Metre	4.50 - 4.79
63	乔其 Georgette	10101	门幅:114CM 姆米:8M/M 剑杆	USD / Metre	3.86 - 4.15
64	乔其	10106	门幅:140CM 姆米:8M/M 剑杆	USD / Metre	4.50 - 4.79
65	乔其	10102	门幅:114CM 姆米:10M/M 剑杆	USD / Metre	4.50 - 4.79

ID	Commodity	Specs.	Grade	Unit of Value	Price Range
66	乔其	10168	门幅:140CM 姆米:10M/M 剑杆	USD / Metre	4.76 - 5.05
67	乔其	10103	门幅:140CM 姆米:12M/M 剑杆	USD / Metre	6.31 - 6.60
68	乔其	14姆米乔其	门幅:114CM 姆米:14M/M 剑杆	USD / Metre	6.31 - 6.60
69	乔其	58乔其	门幅:114CM 姆米:16M/M 剑杆	USD / Metre	7.47 - 7.76
70	乔其绥 Georgette	16-114乔其绥	门幅:114CM 姆米:16M/M 剑杆	USD / Metre	7.21 - 7.50
71	乔其绥	11姆米乔其绥	门幅:114CM 姆米:11M/M 剑杆	USD / Metre	6.31 - 6.60
72	乔其绥	9姆米乔其绥	门幅:140CM 姆米:9M/M 剑杆	USD / Metre	6.31 - 6.60
73	双乔绉 Double crepe	12776	门幅:114CM 姆米:15.5M/M 剑杆	USD / Metre	49.4 - 51.4
74	双乔绉	12776-140	门幅:140CM 姆米:15.5M/M 剑杆	USD / Metre	7.09 - 7.38
75	双乔绉	12777	门幅:114CM 姆米:18.5M/M 剑杆	USD / Metre	8.25 - 8.54
76	双乔绉	12777-140	门幅:140CM 姆米:18.5M/M 剑杆	USD / Metre	9.54 - 9.83
77	斜纹绸 Twill	13384	门幅:114CM 姆米:10M/M 剑杆	USD / Metre	4.37 - 4.66
78	斜纹绸	19006	门幅:94CM 姆米:12M/M 剑杆	USD / Metre	4.50 - 4.79
79	斜纹绸	19012	门幅:114CM 姆米:12M/M 剑杆	USD / Metre	5.15 - 5.44

ID	Commodity	Specs.	Grade	Unit of Value	Price Range
80	斜纹绸	15687	门幅:140CM 姆米:12M/M 剑杆	USD / Metre	6.31 - 6.60
81	斜纹绸	19001	门幅:94CM 姆米:14M/M 剑杆	USD / Metre	5.28 - 5.57
82	斜纹绸	19004	门幅:114CM 姆米:14M/M 剑杆	USD / Metre	5.66 - 5.95
83	斜纹绸	19015	门幅:114CM 姆米:16M/M 剑杆	USD / Metre	6.44 - 6.73
84	斜纹绸	13151	门幅:114CM 姆米:14M/M 剑杆	USD / Metre	6.05 - 6.34
85	四维呢 4 dimensional	18165	门幅:114CM 姆米:16M/M 剑杆	USD / Metre	6.96 - 7.25
86	四维呢	18167	门幅:114CM 姆米:19M/M 剑杆	USD / Metre	7.86 - 8.15
87	弹力罗纹 elastic rib	477-43023	门幅:140CM 姆米:23M/M 剑杆	USD / Metre	11.22 - 11.51
88	Habotai	11206	门幅:114CM 姆米:8M/M 剑杆	USD / Metre	4.12 - 4.41
89	Habotai	11206	门幅:140CM 姆米:8M/M 剑杆	USD / Metre	4.50 - 4.79
90	Habotai	11386-114	门幅:114CM 姆米:12M/M 剑杆	USD / Metre	5.54 - 5.83
91	欧根纱 Organza	7.3-140生丝绡	门幅:140CM 姆米:7.3M/M 剑杆	USD / Metre	4.63 - 4.92
92	Doupion Taffeta	13255双宫绸 raw silk	门幅:114CM 姆米:12.5M/M 剑杆	USD / Metre	5.54 - 5.83
93	珍珠缎 = Pearl satin		门幅:114CM 姆米:16M/M 剑杆	USD / Metre	7.34 - 7.63

Filipino silk producers, spinning mills, weavers, can, for each commodity, compare national prices with Chinese ones and get a rough idea of their competitive situation.

Having highlighted the overall context - main production areas, market situation, main exports, list of the main fabrics offered and their respective prices - we can now analyze how a few Chinese players, representative of the sector, are adjusting, each in their own way, their business strategies to better respond to the challenges of the international silk market.

v - A few key players from the Chinese silk sector

N.B. at first sight the number of companies presented below might seem too important but given the size of the country and the importance, diversity and complexity of the silk sector, a narrower choice would have been too simplistic.

a) Companies producing cocoons, raw silk & filaments

« Ningnan County South Silk Road Group Co., Ltd. » (Nan Si Lu Group)

http://www.nnnsljt.com/go.htm?url=pterji&c=ji_tuan_jie_shao&ac=1

« South Silk Road Group Co., Ltd. » is a provincial level[63] sericulture enterprise integrating silkworms rearing, silk reeling, silk made-up articles, comprehensive development and utilization of sericulture resources and production of sericulture resources. With a registered capital of 103.68 million yuan (USD 14.80 million), it has nine subsidiaries with a total of 1,420 employees.

The group has 25 sericulture production units distributed over 15,330 hectares of mulberry gardens, raising 288,200 silkworms and producing 262,300 cocoons per year. With an annual output of more than 5,000 tons of dry cocoons and more than 2,000 tons of raw silk, it has driven 25 townships, 25,000 households, and 102,000 agricultural populations in the county to engage in the cocoon silk industry.

The income obtained by farmers from sericulture reached 468 million yuan (USD 66.9 million), and the average income from sericulture per household was 18,000 (USD 2,572.50).

« Yinhong Silk Industry Co., Ltd. » http://yhsy.360ntc.com/

Is a subsidiary of the previous « South Silk Road group » in charge of cocoon processing and reeling. It has 605 employees and covers an area of 77.58 acres. It passed the ISO 9001 quality system certification

[63] Ningnan county is part of the Liangshan Yi autonomous prefecture located South of the Sichuan province, on the border with Yunnan

in 2005 and uses Feiyu 2008 automatic silk reeling machines (http://www.hzfj.com/index/e_feiyu.htm) with 18 groups & 7200 threads to produce 13/15D, 20/22D and 27/29D.

Baichang silk is the leading product, with an annual output of more than 650 tons of high-quality mulberry silk, including 100 tons of organic raw silk, and an annual sales income of 250 million yuan (USD 35.6 million). The comprehensive strength of the company ranks among the best in the silk reeling industry in the province.

I believe the « South Silk Road Group Co., Ltd. » is a good example of « sericultural excellence ».

For five key indicators (total cocoon production, per capita yield of sericulture, cocoon production per capita, cocoon quality, and income of silkworm farmers rank) the company ranks first in the province. For 3 of these indicators (per capita yield of sericulture, cocoon production per capita, and cocoon quality) it ranks first in the country.

With the group website being in Chinese we must recognize that it doesn't help the eventual readers, but it is worth the effort as the company site proposed, for at least 4 reasons, a priceless reservoir of data in connection with sericulture:

i - Both the Ningnan and Nanchong counties are located in Sichuan, one of China's silk strongholds, famous for the quality of its sericulture that has existed locally for thousands of years and reached a peak during the Han (206 B.C. to 220 A.D.) and Tang (618 to 907 A.D.) Dynasties (The famous Shu brocade[64] / 蜀锦)

ii - The « South Silk Road Group Co., Ltd. », as mentioned, is a leading, high standards sericultures company, both at regional and national level. Its professionalism and depth of experience in managing sericulture projects is beyond doubt.

iii - On many aspects the concerns of the Chinese sericulture community are quite similar with the ones of the Filipinos' sericulture community. The following excerpt (quote from one article of the group's web site) illustrates the similarities of the problems occurring in the silk sector of both countries:

« (…) In addition, most domestic sericulture is still operated by traditional manual methods, with extremely low level of mechanization, extensive and low efficiency, which has become a bottleneck restricting the development of sericulture.

Therefore, confronted with the rapid rise of the industry in China, the transfer of many from the rural labour force towards the industry, the rapid increase in urbanization and the rising labour cost we must, as soon as possible, study solutions in order to obtain better integrated sericulture, high-quality and high yield through the use of new technology, otherwise we will not solve the problem of labour-saving

[64] Details on https://www.gochengdu.cn/life/intangible-cultural-heritage/shu-brocade-the-art-of-stitching-a1608.html

sericulture. Traditional mulberry sericulture must be transformed into modern sericulture, and the labour intensive sericulture industry is bound to face decline etc. »

iv - Chinese are, before all, very pragmatic people and most of the topics covered in the group web site are dealt with in a practical, down-to-earth and efficient way.

For all these reasons, I'm convinced that anybody having a genuine interest in improving Filipino sericulture will, in spite of the linguistic challenge, find it very profitable to browse such Chinese websites as they contain much valuable information, particularly in the sericulture technological and management field[65].

The example presented in the long Annex 16 is a translation of an article[66] edited by the « South Silk Road Group Co., Ltd. » on it's web site's menu item **蚕业科技**: « sericulture technology[67] » (the menu includes the following sub-headings **桑蚕专题**: « silk worms issues », **养蚕专题** : « sericulture topics », **蚕丝气象** : silk weather, **桑树病虫** : mulberry pest). It illustrates the very practical approach of the Chinese.

Besides immediate access to useful information such web sites could eventually be an entry point to get in touch with the Chinese sericulture community (international cooperation, search for experts etc.) In that perspective, I would like to mention shortly the « Sichuan Silk Association ».

« Sichuan Silk Association » http://www.scsilk.com

Proposed also a lot of articles on sericulture technics in its menu item « **科技信息** / « Scientific and technological information » http://www.scsilk.com/technology/ . Topics include for example « Application of block-chain technology to silk cocoon marking », « The prevention of fruit mulberry sclerotium disease » (the disease causes wilting sprouted cuttings in mulberry nurseries), « Key points of control technology », « Introduction to mulberry grafted seedling cultivation technology » etc.

« Zhejiang Babei Textile Co., Ltd. » http://www.babeitex.com/en/about.asp

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65 Here a few examples of the topics presented on the web site: « Hongxing Township vigorously develops "6215" Daxing Mulberry » (a particular variety of mulberry silk), « The effect of mulberry special fertilizer is highlighted », « The establishment of high-quality sericulture base to promote farmers to increase production and income », « How to manage the seedling stage of seedlings », « Silkworm production work recommendations », « Main points of silkworm rearing technology » etc.

66 Chinese full text here: http://www.nnnsljt.com/go.htm?url=sjxq&id=4344&c=cai_sang_zhuan_ti&ac=5

67 The menu item **蚕业科技**: sericulture technology can be opened here: http://www.nnnsljt.com/go.htm?url=listerji&c=cai_sang_zhuan_ti&ac=5

« Babei » is a vertically integrated company with, as we will see below, a very innovative silkworms rearing division. But it is also a successful designer and producer of silk bedding products, high-end silk fabrics, hotel and decorative fabrics, household products, silk ties etc.

For 11 years in a row the group is rated among China's top 500 textile & garments companies. Since 2008 « Babei » is certified Oeko Tex standard 100 Polyester, ISO 9001, 14001 and OHSA 18001[68]. It's range of international clients is impressive (Armani Casa, Veneta Cuscini, Anversa, Fazzini, Nobilis, Rubelli, American Silk Mills, Loris Zanca, Max Mara, Coach, Diesel, Aigner, Mandarina Duck etc.)

At every stage of the added value chain the company invested in significant technology and human resources.

The textile design department relies on the renowned CAD/CAM software developed by « EAT GmbH » a German software house, as well as a service and consulting company for all applications from electronic textile patterning, all the way to textile production data.
Their « DesignScope Victor system » is one of the world market leaders when it comes to CAD/CAM software for the textile industry. (more details can be found on https://www.designscopecompany.com/history/).

« Babei group » also opened it's own fabric design office in the Italian silk capital, Como.

The weaving section is equipped with more than 130 computer weaving looms. Some from « Lindauer Dornier GmbH » (Germany / https://www.lindauerdornier.com/en/), their Rapier, air-jet, open reed etc. weaving machines enjoy an excellent reputation of quality and reliability, some from « Sulzer » (Switzerland) and « Somet » (Italy), two historical brands of textile machinery, now part of the Italian multinational group « Itema S.p.a » one of the world's leading suppliers of quality, high-performance weaving machinery and support services to the industry (http://www.itemagroup.com/en/company/profile/)

But it is the « Babei » silkworms rearing dpt. that today interests me, particularly as it has recently demonstrated a real innovative approach.

In early 2019 the group announced the first batch of mass-produced silkworm cocoons, the culminating point of 7 years of intense R&D on how to optimize silkworm production, a project, implemented in close collaboration with the Zhejiang Academy of Agricultural Sciences, in which the group invested more than USD 50 million.

[68] OHSAS 18001, Occupational Health and Safety Assessment Series, was a British Standard for occupational health and safety management systems. BSI cancelled BS OHSAS 18001 to adopt ISO 45001 as BS ISO 45001. ISO 45001 was published in March 2018 by the International Organization for Standardization. Organizations that are certified to BS OHSAS 18001 can migrate to ISO 45001 by March 2021 if they want to retain a recognized certification.

The system is based, on one hand, on a germ-free[69] 5,000 m^2 breeding plant offering an optimized environment for the silkworms to develop and thrive (controlled temperature, humidity, air flow etc) and, on the other hand, on a new way to feed the worms.

Instead of traditional mulberry leaves the animals are fed with a mixture of soybean, corn powder, sweet potatoes' starch, vitamins and some mulberry's leaves powder to boost worms' appetite.

That process has allowed the company to produce 10,000 tons of high-quality cocoons over a one-year period, a quantity approximately equivalent to the production of 100,000 farmer's households.

The organic feed product is easy and cheap to manufacture. Even if the project is still in his initial, observation phase, it is seen by some experts as a potentially crucial breakthrough in the sericulture industry.

« Xinyuan Cocoon silk group Ltd. » http://xinyuan-silk.com/profile/about-us/170020/0/

« Xinyuan » is another experienced player in the field. With a USD 15.8 million registered capital, the company, located in the Eastern Chinese province of Jiangsu, was built on solid foundations and is amongst the top 50 silk companies in China.

Managing more than 160,000 hectares of mulberry garden and collaborating with approximately 280,000 silkworm rearing's families the company strategy is to focus on science and technology to improve its overall efficiency and profitability.

They are the only silk company in China to have settled a « national silk technology research centre » as well as a research facility for post-doctorate researchers. They are constantly engaging in research programs and China's national standards for silk yarns, silk quilts and natural color cocoons were set by them.

They are now engaged in the construction of an eco-cycling economic system « the purpose is to make full use of sericultural resources. They are developing the organic mulberry leaf tea, silkworm pupa oil, food, and silk facial masks (launched their own brand on the Chinese market « Xin Yuan » facial masks). They aim to be a demonstration base for sericultural by-products processing »

b) Companies producing yarns, fabrics, apparels and accessories

« High Fashion International Ltd. » http://www.highfashion.com.hk
+ 2 subsidiaries « High Fashion (China) »

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[69] According to the company Chairman, Mr Jin Yao, the research team experienced many setbacks along the way and it is only after hundreds of trials and errors on disease preventions that they could finally come up with an efficient method.

« High Fashion silk (Zhejiang) Co., Ltd. »

« High Fashion » is a Hong Kong based investment holding company[70] with 2 core activities: Silk apparel's manufacturing and trading on the one hand (high-end woven silk, knitwear, sportswear, underwear, home furnishings and textiles), ODM and retailing of its eight silk centered brands (http://www.highfashion.com.hk/business/brand_retail.html) on the other hand.

The High Fashion's production set-up in China (group subsidiaries) is particularly interesting, not only because, with 6,000 employees, it covers all levels of the silk value chain - silkworms breeding farm, a textile production floor space of 250,000 m^2 with 2,330 workers, state of the art machines and technology[71] for printing (screen and digital) and weaving, strong focus on R&D etc. - but also due to the range of certifications the group's manufacturing branch has obtained.

All High Fashion's apparels products are certified ISO9001, ISO14001, and GB/T28001 but above all the Chinese subsidiary, « High Fashion Silk Co., Ltd. » is the only silk factory worldwide to hold, since 2018, both the STeP by OEKO-TEX® certificate (social responsibility) and MADE IN GREEN by OEKO-TEX® label[72] (environmental friendly production and no harmful substances).

Table 49

High Fashion International Ltd Sales per region	2019	
	USD millions	%
China	149.26	39.7 %
United State of America	128.15	34.1 %
European countries	46.56	12.4 %
Others	30.01	8 %
Hong Kong	11.80	3.1 %
Canada	10.13	2.7 %

[70] Listed on Hong Kong stock exchange under stock code 608

[71] In 2008 the Group introduced a system of advanced Italian industrial processes and finishings for printing and dyeing silk, together with a team of Italian technical experts (7 from « Ratti S.p.A. » / Italy led by Mr. Daniele Pachera) to process new textiles. This had greatly enhanced the company's printing and dyeing processing capabilities.

[72] Details can be found here: https://www.testex.com/en/medien/Ressources/2019/23-04-19-High-Fashion-the-only-silk-enterprise-worldwide-to-hold-both-STeP-and-MADE-IN-GREEN-by-OEKO-TEX_EN.pdf

Table 50

«High Fashion» Sales per type of business	2018		2019		Delta
	USD millions	%	USD millions	%	
Manufacture & Trading of Garments	368.32	92.9%	337.10	89.7%	-8.47%
Property Investment and Development	10.86	2.7%	27,57	7.3%	+153.88%
Brand	17,49	4.4%	11.20	3 %	-35.93%

« High Fashion (China) » is now a National State-level high-tech enterprise. It is the only « National base for silk product development » designated by the National Textile Centre, and one of the first-batch of enterprises using the mark of « high-grade silk » recognized by the China Silk Association, as well as one of the top 10 enterprises in China's silk industry.

« High Fashion International Ltd. » is without doubt one of the most successful silk companies in the world. Its business approach and strategy, its management and communication system, its creativity and innovation ability, its level of investment in R&D, its certification policy and its strong focus on state-of-the-art new technologies to boost productivity and facilitate daily management of every single department should be a source of inspiration and provoke reflexion in anyone interested in entering the international silk business.

« Zhejiang Cathaya International Co. Ltd. » http://www.cathaya.cn/en/cat-1-1.html

« Cathaya International » also known as Cathaya Group, whose predecessor was « China Cocoon Silk Corporation Zhejiang Branch » established in 1950, has been developing in this industry for over 60 years.

The current company majors in international trade of silk & textiles and is featured in combination of research, industry and trade. In 2015 the group, in collaboration with the Hangzhou Chinese textile museum http://www.chinasilkmuseum.com/bwggk/index_77.aspx launched the « Jing Lun Tang » brand.

At present, the annual amount of import & export turnover reaches 1 billion dollars. It ranks in the top 500 Chinese export enterprises, top 500 service-type enterprises and is one of the biggest real silk commodities export enterprise in China.

Through its wholly owned subsidiary **« Zhejiang Silk Seekers Biotechnology Co., Ltd. »** the group conducts comprehensive scientific research and development and applications around "sericulture and cocoon silk". The core product « Silknova », a silk fibroin protein, has excellent biological safety, structural protein properties and tissue repair activity, and is suitable for the fields of cosmetics and medical beauty.

That strategy of diversification allows the company, through waste-recycling, to use silk fibroin (SF) present in silk waste and low-grade cocoons rejected by the silk production sector, for other applications such as cosmetics. But SF also works for surgical sutures and has been applied as a potential biomaterial in a number of biomedical and biotechnological fields[73].

« Zhejiang Jiaxin Silk Co., Ltd. » http://www.chinesesilk.com/About_en.html

The company (listed on Shenzhen's stock exchange since 2010) is mainly engaged in upscale silk fabric and garments production (more than 13 million pcs. of clothing / year).

It is investing a lot in R&D and, through its export dpt. covering 23 sections, is collaborating with many world-famous brands (Zara, Massimo Dutti, Max & Co., Liu Jo, Guess, Michael Kors, 1-2-3, Choice, Trussardi Jeans, Marc Jacobs etc.) on silk garments developments. The company has launched its own brand « Jinsata » on the national market. The strategy includes working with Italian designers to speed up research on the brand concept, marketing support, development of new models and their promotion.

The enterprise is certified ISO 9001 quality management system as well as ISO 14001 environment management system and ecological textile.

« Wujiang First Textile Co., Ltd. (FST) » http://en.fstexsilk.com

« First Textile Ltd. » and its « virtual showroom » https://firstsilk.en.made-in-china.com/company-Wujiang-First-Textile-Co-Ltd-.html is a Oeko tex 100 certified, vertically integrated Cie. - spinning, weaving, dyeing, printing (traditional and digital with CAD & customized color development) garments manufacturing.

Located in Shengze Town, Wujiang City, Jiangsu Province, it offers a large range of silk yarns and fabrics (georgette, chiffon, charmeuse, CdC, satin, organza, tulle, habotai, duppion, crinkle, jacquard, silk jersey, stretch etc. from 5 to 40 mm (heavy satin), plain and printed.

« Anhui Silk Co., Ltd. » http://anhui-silk.com/aboutus.html

[73] See for example the article « Recent Advances in Fluorescent Silk Fibroin » here: https://www.frontiersin.org/articles/10.3389/fmats.2020.00050/full

Certified ISO-9001 since 2008, it is another key vertically integrated silk player in China covering spinning, weaving, knitting, dyeing, printing and finishing of a large range of silk fabrics.

Anhui Silk Co., Ltd. - has a reputation for delivering high quality fabrics, that is probably due to the QC system they have implemented following strictly the practical, impartial and worldwide recognized « 4 points system » issued by the « American Society for Testing and Materials » ASTM D5430[74]-13 (2017) « Standard Test Methods for Visually Inspecting and Grading Fabrics ». That standardized test method is widely used worldwide in the garment industry for fabric inspection, the final purpose is to find out the defects of the fabric in per 100 square yards.

For plain color minimum, are reasonable (300 m / color) but high for print (1500 m) because only screen printing is available, not digital)

« Wujiang Wanshiyi Silk Co. Ltd. »
https://www.globalsources.com/si/AS/Wujiang-Wanshiyi/6008822290295/Homepage.htm

Is another vertically integrated (spinning, twisting, dyeing, printing, finishing) company equipped with more than 500 water-jet[75] jacquard looms and a daily production capacity of 120,000 m.

Established in 1983 it is an important Chinese fabric exporter, mainly of man-made fibres (cupro, tencel, nylon taffeta, microfiber and imitation silk apparel fabrics) but also of silk and silk blends. Their products have been exported to the USA, the UK, Italy, Germany, Poland, Spain, Denmark, Netherland, France, Czech, Australia and Southeast-Asian countries etc. The current customers are: Max Mara, Feyem, Benetton, Saleva, Miroglio, Peuterey, Henry Cotton, Blauer, Hackett London etc.

« Jiangsu Susi Silk Joint-Stock Co., Ltd. » http://www.spcc-silk.com/en/index.php/about

« Susi » was originally a Shangai based spun silk factory founded in 1923. It shifted to Jiangsu in 1960 and was renamed « Jiangsu Siyang Spun Silk Manufacture ». Reorganized as « Co., Ltd. » in 1997 it changed from State owned enterprise to Private company in 2001. A shareholding system was implemented in 2011 and the company, renamed « Susi », listed successfully on the stock exchange in 2014.

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[74] That standard (dowload or hardcopy) can be bought on ASTM webstore here: https://www.astm.org/Standards/D5430.htm for USD 44.00 (price in July 2020)

[75] Water-jet looms are part of the shuttle-less loom's family (like air-jet looms). They use short and powerful bursts of pressurized water spray to propel and insert the pre-measured length of weft yarns across the warp chain on the pre-defined distance. One of the advantages of that technic is that very little tension is exerted on the filling (weft) yarn, allowing to obtain very high-quality fabrics with exceptional hand feel and appearance. The downside is that the warping process must be perfect and rely on top quality warp yarns. (water-jets looms can reach speeds of 2000 m of ppm - picks per minute - and are economical)

« Susi's » is certified ISO 9001 (quality management system), its business covers the whole silk production chain, from raw materials (mulberry etc.) production, to spun yarns (pure, blends, melange etc.), fabrics and garments. The company has total fixed assets of over USD 30 million, a sales network covering more than 90 cities in China (with franchise stores and agency shops), employs more than 1,500 workers and can supply annually more than 2 million units of garments, 1200 m/t of spun silk yarn and 2.8 million meters spun silk fabric.

« Susi » is amongst China's top 10 famous brands of the textile industry, among China's Top 500 Garments enterprises, China's top 10 enterprises of the silk industry etc. Many of the proposed products can fit OEKO-100 requests for the EU. Some products can be seen on https://susilk.en.alibaba.com/productgrouplist-802743514/SPUN_SILK_YARN.html?spm=a2700.icbuShop.88.25.12306534NMumMK

Before introducing the next two Chinese silk suppliers (« Sichuan Nanchong Liuhe Co., Ltd. » and the « Sichuan EW Textile Co., Ltd. ») a brief introduction on the the Nanchong (Sichuan) area[76] is necessary.

« The Nanchong city and region in the Sichuan province is one of the 3 most important silk areas in China, a place where sericulture has a long history[77]. In 2016, it was given the title of « The source point of silk » by the China Silk Association.

Since 2011 the silk and sericulture industry in Nanchong has spent 1.35 billion yuan (USD 192 million) on technological transformation and product development. Advanced machines and equipment have been introduced from Italy and France.

Nanchong is also advancing the construction of scientific and research institutions. The planned institutions include a provincial silk school, a national technology research office for silk spinning and clothing, and five municipal technology centres.

Official statistics show that the total area of mulberry fields in Nanchong is 41,333 hectares. In 2017, Nanchong's economic aggregate in silk ranked No 1 in central and western China. There were 72 silk and garment enterprises in the city, providing jobs for more than 30,000 people. »

« Sichuan Nanchong Liuhe (Group) Co., Ltd. » The « Liuhe Group » is a key player in the silk sector both in Western China and on a national level.

Unfortunately most of the online information concerning the company is in Chinese, the official web site http://www.liuhesilk.com doesn't work, but some data are available at http://10.ip138.com/zhensijiafang/liuhe/ and also at

[76] Source of that paragraph: https://www.chinadaily.com.cn/cndy/2019-09/17/content_37510350.htm

[77] It is said that 5,000 years ago the locals started to plant mulberry trees, raise worms and weave silk on the Jialing river's banks. During the Tang Dynasty, the Japanese imperial family received a special type of Nanchong silk (the Huahong) as a present. In the 1950s, during the early years of the People Republic of China, 80% of Nanchong labour force worked in the silk sector.

http://www.chinatexnet.com/ChinaSuppliers/776/Sichuan-Nanchong-Liuhe-Group-Corp-.html#contact_us (not very precise nor updated).

Figure 38: A worker is seen on a textile production line at Liuhe Group in Nanchong (Sept. 2017).
Source: http://www.xinhuanet.com//english/2017-09/12/c_136603208.htm

The origin of the Group dates back to 1912, making it one of the oldest silk companies in China. This pioneer is mostly specialized in home textiles products but also proposes silk scarves, quilts, clothing bags, accessories etc.

« Liuhe » has concluded many partnerships with national and foreign companies, produced hundreds of tons of high-quality mulberry silk yearly, millions of meters of clothing fabric and 2 to 3 million units of light pieces of garments (underwear etc.) and accessories (scarves, ties, etc.)

Products are exported to more than 30 countries. The company is the 1rst in the Sichuan province to have obtained the self-operated import & export right for mulberry silk products.

« Sichuan EW Textile Co., Ltd. » http://www.14646.tradebig.com/index.php

Also known as **« Nanchong Elegant Textile Co., Ltd. »** http://www.elegantex.com/en/index-e.html is another serious player in Sichuan offering a large variety of products: silk yarns, a wide range of fabrics from 3.5 mm to 36 mm (gauze crepe georgette, chiffon, ponge, habotai, CdC, Twill, spun silk, noil popeline, doupion, satin, crepe satin, jacquard, broad silk fabrics, etc.), garments, silk bedding and accessories).

« Hangzhou Silkworkshop Co., Ltd. » http://www.silkworkshop.com/newproduct/product_en.asp

We will quickly introduce this medium-size (USD 8 million turnover) export-oriented company, specialized in silk quilts, pillows, blankets, bed covers etc. just to say that, founded in 1996 by a team bringing together fabric designers, dyeing and printing experts, as well as local silk artisans, it succeeded nicely in combining traditional know-how with contemporary weaving, printing and dyeing technology and engineering.

They also ensure quality control on all levels, from raw material selection (finest spring cocoons of a special geographical area known for the quality of its cocoons production, picking of a maximum of double palace cocoons etc.)

Figure 39: Workers are seen on a textile production line at Sichuan EW Textile Co., Ltd. in Nanchong, Source:

http://www.xinhuanet.com//english/2017-09/12/c_136603208.htm)

« Shengkun Silk Manufacturing Co., Ltd. » https://www.shengkunsilk.ne

Based in Xuzhou (Jiangsu province, East coast of China) « Shengkun » is an OEKO Tex 100 Class 1 (safe for baby, free of harmful substances) certified producer of silk quilts (both hand & machine made), bed sheets, pillows and covers.

The company is relatively small (approximately 3000 m^2 of production floor, 110 employees) but is famous for the quality of its products exported to many countries under the brand name « Yun ».

This quality in every detail is largely due to the company's average worker's experience of 10 years in the silk industry and explains why the company is highly recommended by the Chinese Silk Association and why it is targeting the upper end market.

« Shengkun » has established a network of international distributors, such as « Gisba Slaapcomfort B.V. » in the Northern Netherlands' province of Friesland https://www.zijdendekbedden.nl/informatie-zijden-dekbedden/algemeen/over-shengkun/ which is selling (mostly on-line) the silk quilts manufactured by Shengkun.

« Wensli Group » (万事利集团) http://www.wensli.cn/en/index.aspx (see also https://silk01.en.alibaba.com)

The Hangzhou[78] based group founded in 1975 and its subsidiary « Wanshili Silk Science & Techniques Co., Ltd. » established in 2001, managed by Mrs Tu Hongyan (chairwoman) and her husband Mr Li Jianhua (CEO) is, with approximately 2,000 employees and USD 1 billion turnover, another key player on the Chinese silk market.

Tu Hongyan's mother, Mrs Shen Aiqin, set up the first silk factory in Jianqiao in 1975 and, in forty years, successfully built up the group. Her daughter was sent to Japan where she spent one year in a textile company after her college graduation in the early 1990s, by that time Japan was well known for its quality oriented approach « I learned the spirit of craftsmanship there, and I've applied it to everything in life, to my products and my company " said Tu.

After returning, Tu did every single job in her mother's company until she took over the business in 2012 to focus on one thing: brand building.

This is where the « Wensli Group » becomes interesting as it really epitomizes the change in management orientation that some Chinese factories decided to implement in the 90's and at the turn of the century, shifting from a competitive advantage mostly based on cost reduction, to one built on differentiation based on value creation.

Added value in the textile and fashion sector depends on creativity and innovation. Creative industries are the ones "in which the products or services contain a substantial element of artistic or creative endeavour[79] ".

[78] Hangzhou (population 10.4 million), the capital city of Zhejiang province, located South West of Shangai, is, with Como in Italy, one of the 2 most important cities for the worldwide silk industry. It produces approximately one third of all Chinese silk (Como producing +/- 80% of EU silk products) and silk sector accounts for 25% of city's GDP. It is a silk crucial business hub, which has hosted the « Chinese International Silk Expo » many times and is home to the largest Chinese silk museum, with laboratories and silk research centers equipped with state-of-the-art technology.

[79] Richard Caves, Creative Industries: Contracts between Art and Commerce, Cambridge, MA, and London, Harvard University Press, 2000.

Mrs Tu certainly understood that requirement perfectly. In an interview[80] given in 2016 to the « Chinadaily » she said « « We have paved our way in China's sericulture industry over the past ten years, but we need to keep one thing in mind - brand building ». By that time, under Mrs Tu's leadership, the group had already started to take a series of strategic decisions oriented towards the building or the acquisition of what Richard Caves calls « a substantial element of artistic to creative endeavour » (see above).

We will now see various key components underpinning that global strategy:

a - Build up strategic alliances

The ability to form strategic alliances was, and still is, an efficient way to « acquire added value » by collaborating with a company having any kind of expertise (design, marketing, technical etc.) which can benefit the partner.

In 2014, only two years after Mrs Tu took over the business from her mother, the group which, by that time, was generating a sales revenue of 800 million Euros from silk business out of an annual global turnover of approximately 1 billion Euros, acquired a 30% stake in the capital of the French famous silk company « Marc Rozier » (http://www.marcrozier.com/Histoire_lyon).

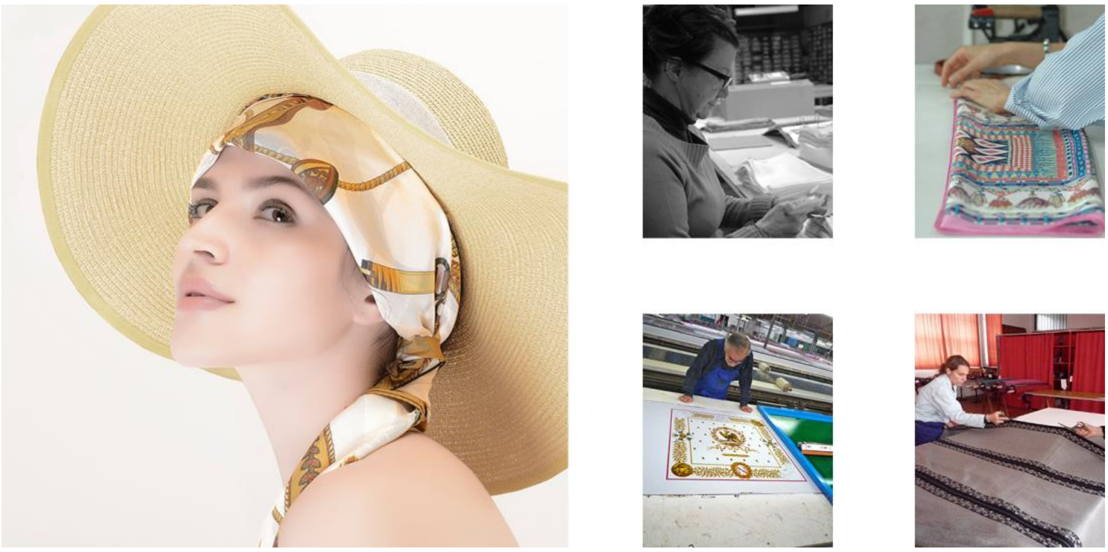
The company's website, for reasons discussed later in this section, remains frozen at the time, but still it gives an idea of what Rozier, founded in 1890 in Lyon (French silk capital), it was: one of the few silk manufacturers in France with « Hermès » to have full control of the production chain. Except for the yarns which were imported mostly from China or Brazil, everything was made in the Rhône-Alpes (around Lyon) area.

One year later, in 2015, « Wensli » completed its 100% acquisition of « Rozier » with the ambition to turn it into a recognized international brand. (the then socialist mayor of Lyon, the third most important French city, was even received with great pomp in June 2015 at « Wensli » headquarters in Hangzhou).

Mrs Tu, in an interview with China National Radio, said about that acquisition: « We bought it to find out how the French make the world's best luxury goods. (…) I hope the acquisition is helping us improve quality and develop a global brand in turn ».

Unfortunately, the story ended badly for « Rozier »: early 2017 the company experienced a first wave of layoffs, followed by a second one at the end of the year. Some of the « Rozier » subcontractors were also forced into bankruptcy (e.g. the printing company « Gillonay »). By Christmas 2017 the 127 years old « Rozier » company had ceased to exist and the precious archives had been digitized, they remain property of « Wensli » who can now use them as a source of inspiration to develop contemporary designs.

[80] https://www.chinadaily.com.cn/business/2016hangzhoug20/2016-09/20/content_26843850.htm



The Hangzhou group is still using the « Marc Rozier » brand name on its website http://www.wensli.cn/en/product_ct.aspx?tid=FA106FAAE40EC0EA without mentioning, of course, the sad end of the story. In terms of marketing efficiency, it is a clever way to attract Chinese consumers with a « French touch » whose value in luxury industry enjoys international recognition, even if the French company actually went up in smoke!

Figure 40: « Hangzhou Group online marketing with former Rozier employees

The cooperation with leading French companies took a new turn and a new dimension in 2018 when « Wensli » signed a cooperation agreement with LVMH « Louis Vuitton Moët Hennessy » the number one luxury group in the world run by Bernard Arnaud's family holding (owns 75 houses in 5 main sectors[81], employs 163,000 people and generated € 53.7 billion sales in 2019). LVMH is interested in using a particular production technology, developed by Wensli to enhance the quality of silk print artworks (see below)

b - Inter-sectors collaboration and investment in digital technology

Hangzhou is the nerve center of Chinese digital technology, the sector represents approximately 25 % of Hangzhou GDP, as stated above, another quarter of the city GDP comes from the silk business. This makes collaboration between both sectors much easier and creates a favorable environment for the local silk manufacturers to embark on the road of industry digitalization.

Ten years ago, « Wensli » started to investigate how digital technology could be used to improve the company's quality, productivity and creativity. This led to the development of a technology called « Iart » (Wensli I-art Technology Production).

[81] Wines & Spirits, Fashion & leather goods, Perfumes & Cosmetics, Watches & Jewelry, Selective retailing

Combining big data and cloud computing « I-art Tech » has, amongst other things, allowed the group's technicians to bring about a resolution to the well-known manufacturing defect of colors unevenness apparent on the face and back sides of printed silk fabrics.

It also permitted the company to improve printed artworks' accuracy, colour definition, delicacy and intricacy. « Big data is the new engine to boost the transformation and upgrading of traditional companies » said Li Jianhua, chairman of Hangzhou Wensli Silk Culture Co Ltd[82].

It is that technology that has been instrumental in convincing « LVMH » to work with « Wensli ».

According to an article in the Chinadaily[83] dated May 2019: « Wensli pumps an annual USD 4.3 million into technological R&D and design innovation, the group recently purchased high-efficiency smart facilities to facilitate the launching of a series of new designs, such as augmented reality silk scarves and smart silk-covered notebooks etc. » The chairwoman Mrs Tu said: « The government has always supported the construction of innovation platforms of private enterprises, and these supportive measures greatly eased the economic burden of Wensli »

The subsidiary company, « Wanshili Silk Science & Techniques Co., Ltd. », in charge of silk fabric printing and silk scarf manufacturing is developing, in its Hangzhou 50,000 m^2 creative and production facility, hundreds of new designs annually, relying, amongst others, on EFI / Reggiani digital printing machines[84]. The large range of silk qualities and densities available from stock and the versatility of digital printing enable the company to be extremely flexible on the MOQ, there is (has???) almost no constraints on minimum (????).

To complete that system Wensli Technology Center owns a 3,000 m^2 R&D experimental base, including a new materials development center, an ecological dyeing & finishing technology center, a modern high-tech transforming traditional technology center, as well as its own in-house laboratory equipped with state-of-the-art testing material and highly trained staff.

[82] https://global.chinadaily.com.cn/a/201912/10/WS5deedb92a310cf3e3557cfa4.html
[83] https://www.chinadaily.com.cn/a/201905/28/WS5cec9333a3104842260be2b2.html
[84] See video here: https://www.youtube.com/watch?v=Hf7648iuWLo and https://www.youtube.com/watch?v=7sj06HU8fOg and EFI web site here https://www.efi.com/en-gb/products/inkjet-printing-and-proofing/reggiani-textile/

Figure 41: Wensli in-house laboratory

c - Recruit international experts

In 2014 « Wensli » also hired the services of the former general manager of « Hermès Textile Holding », Mr Patrick Bonnefond, appointing him as a member of the group's executive committee and asking him to use his Hermès experience to elaborate a strategy in order to position « Rozier » as an international silk luxury brand.

But again, the collaboration did not work as expected; Mr. Bonnefond resigned in 2016 following a serious setback for which the responsibility remains unclear (1.7 million Euro losses and the planned opening of several « Marc Rozier » shops in China, which did not took place).

d - Enter into business relations with internationally recognized brands

Through its trading division and its subsidiary « Wanshili Silk Science & Techniques Co., Ltd. » the Wensli group also engaged in business collaboration with famous international brands, producing, on OEM[85] basis, silk apparels and accessories for « Prada », « Gucci », « Dior », « COS », « Next », « Giorgio Armani », « Hugo Boss », « Chloé », « Max Mara », « Alexander Mac Queen » etc… By doing so the group acquired a lot of useful experience and gained valuable insight on contemporary fashionable apparel designs and related production processes.

e - Promote the brand both on the Chinese and the international scenes

The group is aggressively promoting its « Wensli » branded silk products on the occasion of important international events taking place in China or abroad: the Olympic Games in Beijing in 2008, the

[85] OEM stands for Original Equipment Manufacturing, and refers to products (e.g. apparels) that are fully designed by one company (most of the time the international brand / buyer) and then licensed out to a manufacturer to produce (Chinese Wensli group for example). The main advantage of OEM is that the brand designer retains total creative control over the design, indeed the OEM product is made according to the buyer's product specification. For example, any product with a customized design, material, dimensions, functions or even colors can be classified as OEM.

Hangzhou G20 summit in 2016 (the then IMF president, Christine Lagarde, wore a « Wensli » silk scarf during the summit), the BRICS[86] summit in 2017, the event organized in 2018 by the « Hangzhou Tourism Commission » in the New York Grand Central Station to promote local tourism and silk as a flagship product of Hangzhou where the Chinese concert pianist Láng Lǎng (**郎朗**) appeared.

f - Participations in trade fairs

Wensli / Wan Shi Li are obviously participating in many fairs to promote the brand. One of the latest they took part in is the « China International Silk Fair » who took place in Hangzhou International Convention and Exhibition Center early December 2019.

This fair is an excellent entry point to obtain an idea of the current situation of the Chinese silk offer, to know the key players (manufacturers, brands, silk industry associations etc.) and make useful business contacts.

« Shandong Hairun Investment Group » (山东海润投资集团)http://en.hirungroup.cn/html/guanyuhairun/jituanjianjie/index.html (NB. the web site Chinese version is generally better updated than the English one).

« Hairun Group », based in Qingdao (a major seaport on the Yellow Sea in the Eastern province of Shandong) is worth mentioning. Even if they diversified their activities in recent years (real estate, hotels etc.) their core business remains focused on silk production and trade. The volume of export realized by its three import & export departments gives the group a significant position on the Chinese silk export market.

The company has 4 main strategic advantages:

- Its creativity and ability to propose many new designs each season.

- Efficient supply chain & marketing management

- Its experience in handling very diversified buyer's profiles from around the world

- Its internal organization (see table below): each department has been carefully conceived to meet the expectations of specific groups of international silk buyers. E.g. the apparels division focus on Women’s apparels only.

Table 51: « Shandong Hairun Investment Group » internal organization

[86] BRICS is the acronym coined for an association of five major emerging national economies: Brazil, Russia, India, China and South Africa

Dpt. nbr.	responsibility	Capacity & offer	Targeted markets	Export turnover
I 5 branches	Silk fabrics	200 new varieties/ year 13 million metres	EU, Japan, South Korea	USD 48 million
II	Cocoons, raw silk, silk yarns, linens & blends	Own silk factory with continuous technical investment and full range of silk varieties	Japan, Korea, India, Pakistan, EU	USD 30 million
III	Home textiles	In-house market research, design & development team	USA, EU	USD 20 million
	Women's apparels	OEM basis business. 4 wholly owned garments factories. 100% export. 2 million garments / year	UK, France, USA (well-known brands around the world)	n.a.

« Chongquin Sunfeel industrial group » http://www.sunfeel.com.cn/guanyuwomen/

Founded in 1995, it has become a well-known private joint-stock enterprise in the cocoon, silk and silk industry in the megacity (20 million people in the urban area, 31 million in the municipality) of Chongqing / Sichuan.

The group integrates the three key activities of the silk industry: the cultivation of mulberry gardens, the production and marketing of silk products. It has more than 300 employees and 5 wholly owned companies: 2 with shareholdings, 1 wholly-owned silk factory in Vietnam, 1 silk factory with Uzbek shareholding and 1 silk factory with Indian shareholding.

The company has developed in 3 counties (Fengjie, Wuxi, Wushan) of the Chongquin municipality 13,300 hectares of high altitude sericulture bases, which became the main production area of high quality cocoons, including a range of ecological cocoons renowned in the industry. Sericulture activity has become the main source of income for many local farmers.

« Sunfeel » brand « silk satin », which belongs to the Group, is sold in India, Nepal, Singapore, Bangladesh and other major traditional silk consuming countries in South and Southeast Asia.

Figure 42: « Sunfeel » facilities

Last December 27 (2019) « Sunfeel Group » signed an agreement with Uzbekistan to create a sericultural cluster in the Tashkent region.

« The production cycle will include a complete commodity and raw material chain from the creation of mulberry plantations to the processing of cocoons and the production of finished products, followed by exporting more than 70% of the final product. Due to the implementation of the project, 2,000 jobs will be created in rural areas of the Tashkent region.

In the three-year perspective, it is planned to increase the production of cocoons by 4.5 times from 1150 to 5000 tons with their further processing into high-quality yarn. After three years of the project, the company also plans to process silk yarn into finished products (textiles, ready-made clothes, ties, scarves, etc.). The remaining volume of yarn and all finished products will be exported at world prices to foreign markets already mastered by the company.

They also studied the prospect of opening a branch of the College of Biotechnology of the SouthWest University, the largest silkworm and mulberry tree laboratory in China, in Uzbekistan. » (Source : https://mift.uz/en/news/chongqing-sunfeel-intelligent-technology-co-ltd-kompanijasi-bilan-memorandum-imzolandi)

vi - Synthesis of China key players' competitive advantages

What are the main factors explaining Chinese companies' success on the international silk market? Here we are going to compile some of these key factors from the various companies' profiles that we have just presented.

- Critical size to compete in the global silk market a critical size is a valuable asset.

Most of the companies we have listed above, wherever they come from, the cocoons and raw silk sector, or the apparels and accessories manufacturing area, are in this case.

« South Silk Road Group Ltd. » with its 25 sericulture production units and 15,000 hectares, « Xinyuan Cocoon silk group Ltd. » with its 280,000 silk worms rearing families, « Chongquin Sunfeel Group » with its 13,300 hectares of mulberry garden, 300 employees, joint-venture factories in Vietnam, India, Uzbekistan, « Babei Textile Co., Ltd. » vertically integrated group with its innovative silk worms rearing department, its 130 computerized weaving looms and its impressive clients' portfolio, « High Fashion international Ltd. » with its 6000 employees, « Wanshiyi Silk Co., Ltd » with its 500 water-jet jacquard looms and a daily production capacity of 120,000 m, etc.. epitomize the critical size factor.

- Technical expertise: whatever their size - SME located in a provincial sericultural area, or big corporations well established internationally - all the Chinese companies presented in this survey have their technical expertise in their respective specialities in common.

That expertise has of course a historic and cultural component, directly connected to the antiquity of the silk related activities in China, but it has also to do with the dense network of technical centers and institutions that the Chinese have implemented in all their sericultural regions both to train silk professionals at all levels (workers, technicians, engineers) and to disseminate the scientific knowledge and the know-how.

Both private companies[87] and provincial administrations are active in this field[88]

Last, but not least, that expertise also relies on the very practically oriented Chinese mind set.

It explains the ability of « Yinhong Silk Industry Co., Ltd » in silk reeling, the wealth of technical information available on « South Silk Road Group Ltd. » and « Sichuan Silk Association » web sites, the focus of « Xinyuan Cocoon silk group Ltd. » on science and technology to improve its overall efficiency and profitability.

It clarifies why « Wanshili Silk Science & Techniques Co., Ltd. » invested in EFI/Reggiani digital printing machines, how the in-depth experience of « Shengkun's » workers contributed significantly to the company's reputation for excellence and why the « Sunfeel Group » has been chosen by the Uzbekistan

[87] As stated above, since 2011 the silk and sericulture industry in Nanchong (Sichuan) has spent USD 192 million on technological transformation and product development. Advanced machines and equipment have been introduced from Italy and France.

[88] E.g.: as mentioned previously the Nanchong region (Sichuan) administration is advancing the construction of scientific & research institutions. The plan includes a provincial silk school, a technology research office for silk spinning and clothing, and five municipal technology centers. The Zhejiang academy of agricultural sciences (state level) has closely collaborated with the Babei group (private) on a project aiming to optimize silkworm production.

government to develop a sericultural cluster in the country involving a lot of know-how and technology transfer.

- Technical innovation: if innovation is important for any industry this is all the more so for the textile and apparel sector. Creating and bringing on the market, every season, every month, every week sometimes, innovations and novelties, is the very essence of fashion.

Downstream in the value chain, it concerns the marketing and branding strategies constantly evolving to propose new « buying experiences » in which digital and social communication strategies are today playing a pivotal role to the end-consumers.

Upstream it affects the raw material, yarn and fabric's offer. Until the last decade of the 20th century Chinese silk players were focusing mostly on the upstream areas (roughly said « production ») but since the mid 90's / 2000 they are moving fast and efficiently on marketing and branding, but this move is done without forsaking their competitive advantage on their upstream 's offer.

Innovation can be applied to relatively simple agricultural machines used on a daily basis in the mulberry gardens in order to improve productivity and reduce work-related fatigue among the agriculture staff, it is what « South Silk Road Group Ltd. » is doing (see annex 16) ; It can also concern sophisticated software, such as the German EAT textile patterning CAD/CAM acquired by "Babei Textile Co., Ltd." to boost its fabric design creativity, the latter being further enhanced by the opening of a fabric design office located right in Como, the heart of the Italian silk manufacturing industry.

« Babei group » also invested heavily in R&D for 7 years to develop a new way to feed the silkworms to optimize cocoons production, that innovation could become a real revolution in the sericultural industry.

The investments that « High Fashion International Ltd. » made ten years ago in advanced Italian industrial processes to finish, print and dye silk paved the way for the company's success today. The « Cathaya group » never stops conducting comprehensive scientific research, development and applications around sericulture to facilitate the company's diversification (cosmetic based on silk fibroin protein etc.).

The fabric QC system implemented by « Anhui silk Co., Ltd » can be assimilated to a process innovation. In the past 9 years « Susi Silk Ltd. » spent USD 192 million on technical transformation and product development, introducing state of the art machines from France and Italy. « Wensli » recently pumped 4 million USD annually into technological R&D to facilitate the launching of a series of new designs (they now have a 3,000 m^2 R&D experimental base, including a new materials development center and an in-house laboratory, equipped with state-of-the-art testing material and highly trained staff).

« Xinyuan cocoon silk group Ltd. » implemented a "national silk technology research centre" as well as a research facility for post-doctorate researchers. After 10 years of intense research "Wensli" group finally succeeded in developing the « I-art » technology (see above) that has been instrumental in deciding « LVMH » to work with "Wensli".

- Creative design: even if it makes specific reference to the design of fashionable yarns, fabrics, apparels and accessories, it moves in parallel with technical innovation, the latter having an energizing effect on the first one.

Some companies such as « High Fashion International Ltd. » invested heavily in technical and human resources (7 expert technicians from the famous Italian silk company Rati) to amplify their offer of new fabrics. "Jiaxin silk Co., Ltd" invited recognized fashion Italian designers to accelerate their development of new designs.

Smaller companies such as the "Silkworkshop Co., Ltd." succeeded nicely in combining traditional know-how with contemporary weaving, printing and dyeing technologies, to enrich their fabric designs portfolio, "Cathaya group" reached a similar result by collaborating with the Hangzhou textile museum and « First Textile Co., Ltd. » relied on CAD and customized color development to do so.

"Wensli" group recently purchased high-efficiency smart facilities to ensure the launching of a series of new designs such as augmented reality silk scarves and smart silk-covered notebooks etc. Their collaboration with their large portfolio of famous international brands is also instrumental in building up their design expertise.

"Hairun Group" internal organization allows its department number I (in charge of silk fabrics) to propose 200 new varieties of fabrics every year.

- Sustainability and certification: these two interrelated parameters, whose importance is growing exponentially since the Covid 19 crisis brutally revealed the terrible consequences that a blind and uncontrolled exploitation of our environment could trigger, are today, more than ever, very high on the agenda of International buyers.

Like the other suppliers, Chinese silk makers had to adjust. The trend is not new, but the recent crisis drastically intensified buyers' expectations in terms of both environmental and social compliance.

The levels of certification vary widely from company to company. When "South silk road" seems to rely only on an ISO 9001 quality management certification, "Shengkun silk" on OEKO Tex 100 class 1 (safe for baby, free of harmful substances), "Jiaxin Silk" has ISO 9001 and 14001 (environment management system and ecological textile), "Babei Group" is certified Oeko Tex 100, ISO 9001, 14001 and OHSA. « High Fashion International Ltd. », besides its certifications ISO9001, ISO14001, and GB/T28001, is the only silk factory worldwide to hold, since 2018, both the STeP by OEKO-TEX® certificate (social responsibility) and MADE IN GREEN by OEKO-TEX® label[89] (environmental-friendly production and no harmful substances).

Increasing sustainability requirements, coming both from international buyers and end consumers encouraged silk suppliers to adjust part of their offer accordingly.

« South Silk Road Group Co., Ltd. » is proposing some organic raw silk, « Xinyuan Cocoon silk group Ltd. » set some standards for natural color cocoons and is now engaged in the construction of an eco-cycling economic system to optimize the use of all sericultural resources (they developed organic mulberry leaf tea, silkworm pupa oil etc.), « Cathaya Group » is active in silk waste recycling, « Wensli » set up an ecological dyeing & finishing technology center etc.

Initiatives in that direction are increasing dramatically, sustainable textile and apparel products are not a mere environmental fad, it is both a necessity and a very fast-growing market and any maker, whatever his country of origin may be, should pay due attention to that issue.

- Strategic alliances and national or international cooperation: Today the international fashion market's complexity, range of requirements and speed of evolution are such, that working alone, in the « splendid isolation » of one's own (assumed!) expertise, is not at all advisable.

To establish contacts and alliances to cope with multiple level challenges and to constantly question and adjust one's commercial offer in the light of the real and present global fashion market demand, can be seen as a golden rule.

A company's international clients' portfolio is obviously a primary source of invaluable market information. By dealing with clients' buying, design and import departments to develop new collections, the factory is learning a great deal about international trends, buyers' expectations, trendy designs, fashionable fabrics, shipping requirements and regulations, inputs sourcing addresses, price management etc. That's why groups such as « Babei », « High Fashion », « Wanshiyi », « Susi », « Wensli » « Jiaxin Silk » etc. with their large range of international clients have entered a virtuous circle of « learning by doing ».

Strategic alliances are implemented for specific purposes. « Jiaxin Silk » hired the services of famous Italian designers to support the creation of the company's own brand and to facilitate the company's access to the high-end fashion market. « Nanchong Liuhe Group » signed partnerships with local and international companies to boost the development of new silk fabrics, « Shengkun » has established a network of international distributors. « Babei » has opened a fabric design office in Como, Italian silk capital. « Sunfeel Group » is selling its sericultural expertise overseas (agreement signed in Dec. 2019 with Uzbekistan to develop a sericultural cluster in Taschkent).

[89] Details can be found here: https://www.testex.com/en/medien/Ressources/2019/23-04-19-High-Fashion-the-only-silk-enterprise-worldwide-to-hold-both-STeP-and-MADE-IN-GREEN-by-OEKO-TEX_EN.pdf

« Wensli » seems particularly clever in building alliances at many levels. In 2015, it acquired a French silk maker with the ambition to turn the name into an international brand and hired a former general manager of « Hermès ». The group also took advantage of its presence in Hangzhou, the centre of Chinese digital technology, to enter into collaboration with local experts in digital applications, they developed a digital product called « I-art Tech » which was instrumental in convincing « LVMH » to sign a cooperation agreement with « Wensli » in 2018.

- <u>Product diversification and branding</u> are two tools commonly used by Chinese silk fabrics and apparels producers to enhance the company's growth.

The range of fabrics proposed by Chinese weavers is impressive (the above price list gives an idea), creativity in clothing is also high, even if some companies focus on specific lines of product, e.g « Hairun Investment Group » apparels division concentrates on Women's apparels only, that can also be an interesting strategy at an initial stage.

Obviously, diversification also means designing silk-based products that are not fabrics, garments or accessories, for example the facial masks and the organic mulberry leaf tea proposed by « Xinyuan Cocoon silk group », the fibroin protein « silknova » developed through silk waste recycling by « Cathaya Group » mostly for cosmetic uses etc.

Retail business based on its own brand generates the highest rate of added value in the textile and garment business. Since the mid 90's some Chinese companies are investing heavily in that activity, brand creation is constantly accelerating. Most of the Chinese silk key players we have introduced above have launched their own brands, which they distribute either locally or internationally, of course properly planned marketing is the engine of that process.

That being said, many Chinese silk companies do not yet have their own brand, among those having one, it is still very common that the profit from the apparels manufacturing and trading activity is ??? notably superior to the benefit from the branding activity.

The above table 86 presenting « High Fashion International Ltd. » sales per type of business clearly illustrates that point. Then there are the companies like « Wensli Group » which are really focusing on brand building and high value-added marketing activities.

- <u>A dynamic and ongoing commercial and communication strategy</u>

At a first level, Chinese exporters are using classic commercial tools to canvass new potential customers: direct approach, selling mission, business trips, fairs participation - participation followed in several editions of the same trade fair, the more the presence is followed, the greater the chances of attracting new customers - Chinese exhibitors are very active on Europeans fairs.

They also make extensive use of the connections available to them from their existing customer networks, this way of recommending a supplier, from one buyer to peers, can be very effective.

At a second level they use their websites, the quality of which has improved enormously, although many companies still have a long way to go.

Then there is the presence on social networks through social media marketing. Typically, the main social media channels are You Tube, Pinterest, Instagram, Twitter and Facebook, but this can evolve very fast. Of course, we should not forget the Chinese networks, such as WeChat and Weibo, which have 1 billion and 460 million users respectively. (see https://www.marketingtochina.com/top-10-social-media-in-china-for-marketing/).

The presence on Chinese or non-Chinese B2C, but above all and preferably B2B market's places, which offer a three-headed package: 1) low entry cost, 2) quick and easy setup, 3) quick access to an existing pool of potential customers.

Key players in that field are Alibaba (China), e-Worldtrade (USA), EC21 (South Korea), Amazon (USA), Global Sources (Hong Kong), ExportHub (USA), ThomasNet (USA), TradeIndia (India), Joor (USA n.b. largest wholesale marketplace for fashion with 155,000 retailers and 1,500 brands).

However, I would give a special mention to the European, Berlin based, « Foursource » platform https://www.foursource.com/features/ created in 2016, which is probably one of the most relevant market networks for B2B apparel sourcing, especially for suppliers targeting the EU market.

Worth mentioning is that competition in some areas of the silk sector is not only coming from China. Some Europeans industrialists have demonstrated their resilience and capacity to innovate; relying on the latest digital technologies they are reinvigorating whole sections of the industry, one of them, critical for the silk business as a whole, is the printing activity where the Italians and French shine.

Re-shoring is much more likely to happen for industries using hard materials (metals, etc.) than soft materials like fabrics, because hard materials, easier to grasp and manipulate, greatly facilitate the use of robotics to replace manual labour. Because it uses fluid and sliding materials the sewing industry, except for T-shirts, cannot yet be robotized entirely, even if more and more operations are being automated, so it is improbable to witness a large-scale relocation of sewing lines in Europe.

On the other hand, the printing activity technically operates on a soft material temporarily transformed into a kind of hard material in the form of a well stabilized flat layer of plain fabric, where a graphic design will be printed with accuracy.

The use of digital printing technology not only permits enhancing that accuracy but also increasing the finesse and complexity of the designs to be printed, as well as the diversity of the colors used in the composition (with traditional analog / screen printing method 10 to 15 colors could be used, on average, per print, using more of them generally resulted in a loss of profitability, of cost-efficiency).

Italian and French printers are very advanced. That expertise, combined with the talent of some local graphic designers and the iconographic wealth available in Europeans museums, libraries, archives, etc. makes these two countries leaders in the field of printed silk textiles.

Studying leaders can teach us a lot about the state of the silk market. In this instance it underlines the importance of high-quality printed fabric for the silk fashion industry, particularly for the scarves and shawls accessories, the women's blouses, dresses and skirts that represent, as shown above, a significant share of the market.

4.2.4.2 Italy

The Italian region of Como remains the Mecca of high-end silk weaving, finishing and printing.

About 80% of European silk production is attributable to the Como district. There are about one hundred companies associated with the Italian Silk Office, almost all of which are in Como. With about 6,000 employees the sector focuses on high-end / high-fashion products and processing around 3 million tons of raw silk or raw fabric annually, mostly imported from China.

Figure 43: interior of a silk weaving mill in Como / Italy (source: Confindustria Como)

Como’s silk sector aggregate turnover is approximately 1 billion Euros. Directly or indirectly, 70% of the silk production is exported. The main importing country of Como’s silk products is France with its world-famous designer brands and leading luxury groups. In second place is the USA followed by Switzerland, as many luxury and fashion companies are also based in the Confederation. Then comes England and Germany and lately China, where the demand for high quality fabrics by Chinese designers is increasing to create high-end products.

The business relations between the silk manufacturers of Como and the Chinese silk industry are close and ancient. Every year and twice a year the representatives of the two communities meet (once in China, once in Como) to discuss business: mainly the quality and price of silk.

The price of Chinese silk is a central theme. In the two-year period 2017-18, China alarmed the entire sector by raising the price of raw silk to the stars, over 70 euros per kilogram! The surge, also due to growing local demand, has caused the costs of Italian silk factories to rise, because there is almost no alternative to where to source the raw material.

The fact is that the Italian Como silk sector is completely dependent on China for its supply of raw silk. A few years ago, entrepreneurs from Italy’s Northern Veneto region intended to revive silkworms rearing to produce raw silk locally, however, the experience was not conclusive. Today it is estimated that a kilo of silk produced in Italy would cost about 200 Euros, it is not economically viable.

Local printing companies are mastering both the machines (in 2016 « Epson » purchased the well-known Italian « Robustelli » company and since then is distributing what is considered one of the best digital printing machines for the textile industry, the « EPSON Mona Lisa Evo tre » https://www.monnalisadtp.eu/monnalisa) as well as the design and technical expertise to print silk masterpieces using both traditional, analog (screens) as well as digital technologies.

Here is a short list of a few Como based silk manufacturers and printers:

« Successori Giuseppe Cataneo S.p.A. » http://www.successori.it

Linked to the « Marzotto group » https://www.marzottogroup.it

« Ratti S.p.A. » https://www.ratti.it/en/about-us/our-world/

The company is linked to « Marzotto Group » https://www.marzottogroup.it/the-group which promotes young designers https://www.ratti.it/en/young-talents/young-designers/# and the use of natural pigments for silk dyeing https://www.ratti.it/en/ratti-natural-dyes/

« Ratti S.p.A » is Italy's number one silk printing and dyeing company, approximately half of its workforce is made of operators, the other half works in R&D and marketing departments, which says a lot about its ability to continually generate new designs.

«Stamperia Ellebi» https://www.stamperiaellebi.com

«La Fotoserica» https://www.lafotoserica.it/en/home

«Stamperia di Lipomo» http://www.stamperiadilipomo.com/inglese/

«Nomega srl» http://www.nomega.it/english/azienda.htm

« Clerici Tessuto » https://www.clericitessuto.it/en/our-products/

The creativity (cf. for example the importance given by "Ratti" to young designers on the company web site) , the deep-rooted experience[90] and know-how, as well as the ability of the Italian silk manufacturers and printers to detect and constantly adjust to buyers new demands, including expectations concerning sustainability (cf. the chapter on sustainability on "Marzotto" group s web site),

[90] Bombyx Mori eggs probably arrived in Europe via Byzantium around 550 a.c. brought by Indian monks who came to visit Emperor Justinian. Much later silkworms reached Sicily and from there spread to Northern Italy. Water quality being critical in silk filament production process the soft water of Como lake, containing very little lime, was just ideal and combined perfectly with mulberry farming which developed in the valleys south of Como area. In the 18th century Como region established itself as the leader of Italian silk industry and it has remained so till today.

environmental and social compliance (cf. the development by “Ratti” of natural pigments for dyeing silk, see above), has helped in maintaining the competitiveness of the Como silk sector.

Italiy’s silk industrial community considers that there are actually five possible ways to promote the growth of their sector: innovation, sustainability, culture-tradition, creative expression and development of tourism. Como, as mentioned above, focuses mainly on luxury for a demanding consumer in terms of quality, but also in terms of product traceability.

It clearly appears that in Como, as elsewhere, the theme of sustainability reorients the reflections on the industrial and commercial strategies of the future. Key Italian textile organizations such as « Confindustria Como » https://www.confindustriacomo.it or « Centro Tessile Serico » https://www.textilecomo.com/en/About constantly underline the importance of the theme of environmental and social sustainability.

Much has been done in recent years by the Como district silk companies for the elimination of hazardous substances from production cycles, the implementation of good practices, the reduction of environmentally harmful processes, the development of activities and initiatives to promote the well-being of workers etc.

4.2.4.3 France

As previously explained by studying the main suppliers of silk products, France also has a strong position on the printed silk fabric market. The rebirth of the French silk sector[91] is quite recent and coincides with the emergence - at the end of the 1980’s - and the development - in the 1990’s and beginning of the present century - of digital printing.

« Hermès » http://www.holding-textile-hermes.com/en/

In the world of luxury, the house of « Hermès » is a reference and within this fashion house the silk twill Hermès square “Carré Hermès” in French, launched in 1936, is a 90 x 90 cm mythical product. The Hermès silk division to which squares, scarves and ties belong, accounts for 9% of the group's total turnover, representing approximately € 537 million in sales in 2018, making Hermès one of the most important silk sellers in the world.

[91] Silk processing started in France in the 14th century. In 1640 Lyon - today France’s 3rd largest city - became the country’s silk capital thanks to a monopoly on grey silk imports. In the 17th & 18th century, the sector, building on the progress made in weaving technics and to royal commitments to the manufacturers, experienced an unprecedented boom. But it is in the 19th century, thanks to the invention of the Jacquard loom, which is the true « Golden age » of French silk industry (in 1868 silk sector represents 75% of local industry in Lyon’s region, 400 companies and 105,000 weaving looms)

Figure 44: Silk Carré Hermès "Animapolis" Summer 2019

Despite its age the square is constantly renewing itself. In March 2020 Hermès launched for the first time a double-sided print square (a different design printed on each side of the product) sold around EUR 500 retail price. 10 years ago, that was impossible, but today, thanks to technological progress, it is possible, but it nevertheless remains an extremely complex technical achievement. Still it illustrates how technology multiplies the potential for graphic expression.

Since 1948 the screens have been engraved by the French company "Marcel Gandit" (bought by HTH in 2006) and then printed in a famous French printing workshop the « Ateliers AS » now fully owned by HTH (Hermès Textile Holding). Flat screen technic is used, the workshop has a 150 m long printing table. One of the major characteristics that sets this product apart from others is that it offers unique and unconventional colour palettes. The team of colourists experiment with thousands of colouring possibilities before choosing a few in agreement with the creative team. The "Animapolis" square produced for summer 2019 (see previous page) has 39 colours and took six months to develop.

39 colours for a flat screen print is already very impressive but the most complex colouring has been realized by Hermès in 2012 when they reproduced on a silk square, a design by Antoine Tzapoff (a French postwar and contemporary painter born in 1945) the Princess Wa'Ko-Ni, a silk print work that required the use of 46 shades of colour.

Figure 45: « Hermès » silk square, Princess Wa'Ko-Ni - 46 colours - Winter 2012

« Hugotag » https://www.hugotag.fr

It is no accident that in 2016 the famous « Chanel » company acquired stakes in the capital of 4 French SMEs specialized in silk, among them « Hugotag » active in silk dyeing, finishing and digital printing. The company represents 2 centuries of combined experience in the silk area. It also offers consulting services to silk manufacturers and printers.

Quality and environmental compliance is at the heart of the company's approach (ISO 14001 since 2010, Oekotex certified dyeing stuff, Oeko tex 100 cerfified etc.), « Hugotag » is one of the two French silk finishing factories in France using only Marseille soap[92] (Savon de Marseille) for silk degumming[93] operations. This soap is formulated with olive oil and is free of any chemical products.

« Hugotag » is working a large range of fabrics, from very light Mousseline to heavier satin and twill and is equipped with advanced digital printing machines and the Monforts (Germany) Montex 8500 stenter[94] and other machines.

« Grain de Couleur » http://www.graindecouleur.com/?lang=en

« Grain de couleur », part of the « Valtex Group » http://www.valtex-group.com is one of the French specialists in inkjet printing on silk, linen and polyester.

« Frénésy » https://www.frenesy.net

Is another well-established manufacturer of digitally printed silk scarves.

Other important French silk players are:

For the real top end, luxury and restoration, I shall mention in particular 2 companies:

« Tassinari & Chatel » https://lelievreparis.com/en/tassinari-et-chatel

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[92] Marseille soap or Savon de Marseille is a traditional hard soap made from vegetable oils that has been produced around Marseille (south of France) for about 600 years

[93] A major undesirable constituent part of silk is « silk gum » or « sericin » which represent about 25% of total silk mass. It is removed by degumming. So, degumming is the process of removing the sericin from silk. Removing the gum improves the sheen, color, hand, and texture of the silk.

[94] See more details on Montforts German textile machineries are found here https://www.monforts.de/en/company/ and on Hugotag Montfort equipment here https://www.monforts.de/en/zero-defects-a-la-lyonnaise/

Founded in 1660 and acquired in 1998 by « Lelièvre » https://lelievreparis.com/en/la-maison/histoire a Paris based studio of edition and creation of fabrics founded in 1914. In the 70's Lelièvre also acquired the UK Co. « Victor Coates » specialized in English textile patterns and "Quenin" a famous silk weaving mill from Lyon. Headed by the 4th generation of the "Lelièvre" family, the company has an annual revenue of approximately 20 million Euros with a robust growth in Europe (in particular in the UK and Germany).

The "Tassinari & Chatel" division of "Lelièvre" registered sales of approximately 3.5 million Euros in 2019, 90% in export. They participate a lot in heritage restoration (Versailles castle, Leeds castle etc.) and have also many orders to service for rich private clients. Their exceptional archives (some date back to 1708) and equally their exceptional know-how[95] are internationally recognized.

« La manufacture Prelle » https://www.prelle.fr

Since 1752 custodian of an outstanding know-how, particularly in silk weaving and printing (the famous technic of « warp printing »). High-end, luxury and restoration market.

Then, among the other important players, one can cite:

« Bucol » http://www.bucol.com/en
(part of Hermès group since 2001).

« Sfate et Combier » http://sfateetcombier.fr/en/sfate-et-combier/entre-passe-et-modernite/l-histoire-de-la-maison ,

The three companies « Sfate et Combier » (founded in 1850), « Guigou » (created in 1826, specialized in circular knitting and 3D knitting for the high-end market) http://sfateetcombier.fr/en/guigou/index.html and the silk spinning mill « Moulinage Vernède » (created in 1855), are, since 2015, part of the textile division of the French group « Bulteau Development » https://www.bulteau-developpement.fr

« Mafroy » (founded in 1939) https://www.malfroy.com/en/maison-malfroy-en/who-are-we/

« Brochier Soieries » https://www.brochiersoieries.com/en/

95 « Tassinari & Chatel » weavers recently managed to use 24 carat crimped gold threads to weave edges on a Jacquard loom. Integrating such yarns in a fabric weft, adjusting accordingly the shuttle, tuning the Jacquard mechanic, the warp tension etc., represents quite a technical achievement.

Brochier actually bought, in 2002 « Bianchini[96]-Férier », a silk company which, from the early 1960s created superb designs for Givenchy, Balenciaga, Chanel, Dior, Féraud, Laroche, Nina Ricci, Yves St Laurent and Scherer, among others.

The « Bianchini-Férier » famous archives have been acquired partly in 1999 by the French state for the Lyon « Textile history museum » and partly in 2010 by Peter Koepke from the USA based « Design-library[97] » https://design-library.com/news/bianchini-ferier-archive.

[96] The founder Charles Bianchini was a true creator and launched in 1904 the « Mousseline Madona » the lightest and finest worldwide mousseline fabric.
[97] The « *Design Library* » has one of the world's largest & best organized collections of documentary fabrics, original paintings, wallpapers, embroideries and yarn dyes, numbering over 7 million designs. The collections date from the 1750s to the present and are sorted into over 1200 categories for easy access.

4.2.5. Access to the European silk market: the basic essentials

By browsing these diverse silk manufacturers and printers’ websites, the reader will acquire valuable insights about the latest market trends in the field of silk fabric and silk printing.

In addition, a careful examination of the manufacturing and distribution strategies and practices of the Chinese, French and Italian silk makers sheds light on the essential - but not always sufficient - conditions of access to the European market (EFTA and EU).

The core message is that only a qualitative approach, started at the very beginning of the production process and pursued relentlessly at each stage of the design, development, manufacture and distribution of the product, will increase the chances of gaining access to the European market (EFTA and EU)

1 - The demand for quality begins with the raw material

Raw silk, raw abaca, banana and pineapple, yarns, fabrics. With these basic building blocks, the house will be built. The quality requirement for these inputs is implicit and self-evident.

Thus, before considering the production of any silk accessories or garments - and this also applies to the three others natural fibres covered in this study - the country, the BSOs, the industrial sector and the manufacturers concerned will have to assess and ensure that there is a supply chain capable of providing local players with strategic inputs that strictly meet the aesthetic expectations and quality criteria of European buyers of fashion products.

Fabrics of course, but above all, yarns.

Because the entire downstream industrial sector of the spinning mill (weaving, garment manufacturing) will rely on yarns to create added value.

The strict selection of suppliers and the perfect control of their supply chains in terms of quality inputs is one of the key factors underpinning the success of Chinese, Italian and French silk companies.

In other words, a viable silk, abaca, banana or pineapple garment and accessory manufacturing industry can hardly be conceived without the existence of an organised, efficient and qualitative upstream sector, combined with a good mastery and management of its supply chain.

2 - Market expectations guide and direct the creation, technology and know-how to facilitate it[98].

From a strictly commercial point of view, for the European market of silk garments and accessories, the quality of a design lies in nothing less than its adequacy to the expectations of the market in question, i.e. the European market.

Indeed, designs should be developed and proposed to best meet the specific requirements of the targeted market, which are dictated by a complex mix of the often volatile tastes of end consumers, the preferences of fashion influencers, the stylistic proposals and marketing impact of fashion companies, the profound trends affecting society etc.

Creativity and technology go hand in hand, but technology remains at the service of creation, it feeds it and enables it to push the exploration of new creative horizons ever further. The latter is always seen as a search for a response adapted to the expectations and demands of the market.

This explains why successful companies strive to be constantly attentive and close to the market, why they collaborate with young designers whose sensitivity enables them to understand and integrate better, into the creative process, the expectations of millennials (generation Y), generations Z and today's[99] generation α (alpha).

3 - The history of all the companies presented above shows that success is often the result of a long-term sustained effort, wrapped in a story that is rewarding and attractive to both the international buyers and the end consumers.

The dozens of Chinese, French and Italian companies introduced in this study, the representative bodies of the sector, the BSOs, the ministries to which their sector of activity is linked, right up to their government, have skillfully - or shall we say « silkfully » - staged historical facts (even if sometimes it means distorting them a little), legends, anecdotes, unusual characters, exceptional landscapes, technical prowess, the natural riches of the silk eco-system etc. to build beautiful stories around their silk industry, adding a dimension to the product that is no longer only material.

But beware! These stories must be based on a true quality of the product, in other words the product must be worthy of the story, otherwise it will not work, the market will detect and violently castigate deception.

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[98] E.g digital printing offers the manufacturers more flexibility (production in limited series, smaller MoQ), more accuracy (precise rendering of drawings), the use, on the same item, of a richer colour palette than traditional printing allowed (with flat screen printing 10 to 15 colors were used on average, beyond that it was no longer profitable because the cost price increased exponentially & made the retail price prohibitive

[99] Millennials or generation Y born between the early 1980's and mid 1990's, generation Z born between late 1990's and early 2010's, generation Alpha born 2010's to mid-2020's

These « founding narratives » make the country appear as a bright spot on the radar of reliable, experienced and eventually famous silk suppliers, the higher the overall quality, the brighter the point on the radar.

It is worth noting that these kinds of founding stories to support a marketing approach, was used by South Africa to promote Mohair fibre internationally in the 1970s (in 1972 the Mohair Control Board implemented a one-channel marketing system which has greatly benefited the Mohair industry and strengthened its resistance to economic hazards), by India and some visionary traders in the 80's on the occasion of this magnificent marketing coup that was the rebirth of Pashmina shawls, by Peru in the 90's and early 2000's to aggressively and successfully promote the alpaca fibre on international markets.

These three basic, essential points combined with the eight competitive advantages highlighted in the analysis of the key Chinese players, form the backbone of a sound and common-sense strategy for any exporting country wishing to maximise their chances of access on European markets.

4.2.6. What are the chances of the Filipino silk sector to access the European market?

4.2.6.1 The Filipino silk sector

In 2010, Mabel Caccam and Teodoro Mendoza indicated, in the first line of their very informative study[100] published in NLR Journal Volume 3-4 2010 (http://pejard.slu.edu.ph/archives/vol3/factors-affecting-productivity-and-profitability-of-sericulture-based-agroecosystems.pdf that: « Sericulture in the Philippines has remained on a development stage ».

In this article, a figure from FIDA (Philippines Fiber Industry Development Authority) is given, it concerns the Philippines' raw silk production for 2002: 2.8 metric tons. In 2017 the number was 1.5 tons (see above table 78) or 46 % less than in 2002. Without wishing to draw hasty conclusions, this figure does not point to a drastic improvement in the situation of the sericulture sector since the article was published ten years ago.

The article is comprehensive and rich in details about the activity of silkworm breeders and the difficulties they face. In the conclusion, the authors already insist on the importance of orienting the production process towards quality, for example: « For the silkworm, it is important to breed/screen breeds or strains that have high tolerance to increasing temperature, that can withstand prolonged rains and wet-feeding, are resistant to pests and diseases, and have high cocoon yields and quality ».

Since then and until today, the average tone of press articles (see a short selection below) about sericulture in the Philippines, is not overly optimistic.

[100] Factors affecting productivity and profitability of sericulture-based agro-ecosystems. Mabel Caccam & Teodoro Mendoza. Sericulture Research and Development Institute, DMMMSU Sapilang, Bacnotan, La Union College of Agriculture, U.P. Los Baños, College, Laguna Contact: tedmendoza2o1o@yahoo.com

In 2015: « Silk production on the decline[101] - Production of raw silk decreased from 1,500 kilos in 2005 to 800 kilos in 2014. Piña-seda cloth, a blend of silk fabric with piña fibers introduced into the market by the Aklan weavers, was cut from 98,000 meters in 2005 to 18,000 meters in 2014 ». « The lack of reeling facility in Northern Mindanao is limiting the region's capacity to produce more silk to meet the increasing demand[102] »

In 2017: « Philippines aims to revive Mindanao silk industry[103] » (2017)

In 2018: « necessity of enhancement and revitalization of the sericulture value chain from silkworm germ plasm maintenance all the way to silk product development[104] ». « Sericulture or silkworm culture, the rearing of silkworms for the production of raw silk, is an emerging industry in the Philippines[105] »

In 2019: The article « Sericulture on the rise » adopts a more positive tone and describes a successful individual experience, but nevertheless concludes with these words: « In 2015, the Philippine Fiber and Development Authority reported on the decline in silk production in the Philippines due to unstable supply. Through expanded production, it is envisaged to give farmers hope of increasing orders and a sustained income. » It remains a hope.

In 2020: « Iloilo town ventures into silk production to meet demand of traditional weavers[106] - Local silk yarn production is not enough to meet the needs of weavers around the country, especially with the renewed appreciation for indigenous designs. "Right now, the silk yarn that we are producing cannot meet the demand of the weavers, that is why we are encouraging more farmers to venture into this production" Philippine Fiber Industry Development Authority (PhilFIDA)-Western Visayas Regional Director Evelyn B. Cagasan said in a recent interview, as they announced a pioneering project in Lambunao.

Filipino silk production seems also to be very concentrated. According to various sources of information the weaving centres supported by the Japanese International Cooperation Agency (JICA) since 1999 in Central Visayas, Negros Occidental province and managed by the Japanese NGO OISCA[107] are producing approximately 80 % of the country's total raw silk production. The project is managing a 26-hectare farmland, has a silk reeling factory and a training centre based in Bago City (Negros Occidental). In January 2020 a grant contract[108] was signed with OISCA to finance the phase 2 which should extend

[101] https://www.sunstar.com.ph/article/40526/Business/Silk-production-on-the-decline
[102] https://businessmirror.com.ph/2015/08/23/lack-of-reeling-facility-hampers-n-mindanao-silk-production/
[103] https://www.fibre2fashion.com/news/textile-news/philippines-aims-to-revive-mindanao-silk-industry-203884-newsdetails.htm
[104] http://www.ptri.dost.gov.ph/programs-and-projects/philippine-silk-s-t-program
[105] http://www.philfida.da.gov.ph/index.php/recent-news-articles/114-the-negros-silk-project
[106] https://www.bworldonline.com/iloilo-town-ventures-into-silk-production-to-meet-demand-of-traditional-weavers/
[107] OISCA (Organization for Industrial, Spiritual and Cultural Advancement) http://www.oisca-international.org/programs/capacity-building-program/philippines/oisca-bago-training-center/
[108] https://www.ph.emb-japan.go.jp/itpr_en/00_001061.html

OISCA training and support activities in 7 provinces ((Benguet, Nueva Vizcaya, Aklan, Iloilo, Antique, Misamis Oriental, and Negros Occidental).

The second producing region appears to be the Ilocos, followed by Northern Mindanao.

As local production is insufficient to meet domestic demand, thousands of tons of raw silk, yarns and fabrics are imported every year, mainly from China. « PhilFIDA projected that by 2020, more than nine metric tons are needed to fill the shortfall [109]» I did not find Philippines raw silk production figures for 2019, but as previously stated, 1.5 m/t have been produced in 2017, to reach the 9 m/t projected by PhilFIDA in 2020, production volumes would have to be multiplied by 6 in 2 years, which seems highly unlikely.

It follows from the above that the diagnosis of Caccam and Mendoza, expressed in 2010 that "Sericulture in the Philippines has remained on a development stage" is still valid today.

Yet it is undeniable that real efforts and progress have been made over the last 10 years to provide answers to the problems faced by local sericulture farms, such as low-quality mulberry leaf yield, low cocoon yield, lack of rearing houses, rearing frames, the high mortality of silkworms due to uncontrolled temperature and humidity, especially during the rainy season, lack of training in sericulture etc…

In 2019 Misamis Oriental has received the support of the Japanese organization OISCA (see above) to develop its silk rearing activity. The PTRI (Philippines Textile Research Institute) operates a Silkworm Breeding & Multiplication Center in Imelda, Villanueva, Misamis Oriental (http://www.cdodev.com/2019/01/11/misamis-oriental-gets-japanese-grant-for-silk-industry-development/). Some seminars to promote good practice in sericulture will be given locally and also in the province of Aklan and Benguet.

The OISCA-Bago training centre[110] (see photo below) actively disseminates essential technical knowledge to candidates for silkworm rearing.

[109] https://www.sunstar.com.ph/article/40526/Business/Silk-production-on-the-decline
[110] https://www.agriculture.com.ph/2020/01/14/silkworm-generate-income-in-negros-occidental/

Figure 46: the OISCA-Bago sericulture training centre – Philippines

Selection of more productive breeds of mulberry trees (in particular Alfonso and S-54 high-yielding varieties) have been carried out to improve the quality and quantity of leaves on which the silkworms feed. Under the impetus of the state run SRDI (Sericulture Research and Development Institute) the development of new lines of local apparels and accessories such as Barong and shawls using local silk fabrics called Suksuk designs has been implemented[111].

Multiple projects and initiatives managed by the Filipino silk industry's various stakeholders (Philippines Genome Center, Sericulture Research and Development Institute-Don Mariano Marcos Memorial State University - SRDI-DMMMSU - and DOST-PTRI etc.) are presently under way to boost local initiatives in sericulture, R&D, innovation and commercialisation.

4.2.6.2 Are the conditions for accessing the EU silk market (& other fibres) favorable?

The main conditions of access to the European market are essentially those related to the demand and behaviors of the targeted EU / EUFTA markets, the three essential points and the eight comparative advantages presented and analyzed in the previous chapters and integrated by the Chinese, French and Italian competition.

We must now study how, comparatively speaking, the Filipino silk sector stands in relation to these criteria, which largely determine the possibility of accessing European markets.

Then, depending on the result, perhaps modestly suggest a few avenues to explore.

This issue is dealt with in par. 4.2.3 above.

[111] https://businessdiary.com.ph/6353/phils-boost-luxury-silk-design-production-silk-extensive-global-market-reaching-2-billion-china-alone/ and https://businessdiary.com.ph/6391/ipo-approved-patent-five-filipino-original-suksuk-silk-design-production-raised-la-union-agency/

ii - With regard to the three basic essentials

a) The demand for quality begins with the raw material: a viable silk garment and accessory manufacturing industry can hardly be conceived without the existence of an organised, efficient and qualitative upstream sector combined with a good mastery and management of its supply chain. As Marija Kaspar, chief designer at the Swiss company "Zimmerli" (which is said to produce the finest worldwide underwear) says, « Quality, though, is number one. It starts with the yarn."

In spite of the efforts made over the last decade and the constant - but somewhat slow - improvement in the local raw silk supply, the local raw silk industry is not yet in a position to provide a raw material of sufficient quality and volume to enable the Filipinos' silk sector to reach a critical size.

Numerous bottlenecks still slow down the qualitative approach, to mention just one example: the weakness of the reeling equipment, so critical to obtain high quality yarns. Investments are clearly necessary in this field to produce high-quality products expected by Europeans buyers.

I will briefly cite here the example of Rwanda. 4 years ago. The Government of Rwanda has begun investing in the development of silk value chains[112]. Rwanda's National Agricultural Export Development Board (NAEB) has partnered with « HEWorks Ltd. », a Korean silk manufacturer. Approximately USD 5 million has been invested in the construction of a factory, while another 5 million will be injected in silk farming development.

What is interesting in this project is that the global qualitative approach was integrated into the project from the outset, the search for quality guided the investments: « NAEB's strategy is to produce high-quality products and fetch premium prices of US$50 to US$70 per kilogram on international markets. Already, 50% of the silk yarn produced is rated 6A, the highest-quality grade on the market, and a further 40% is rated 5A » Having high-performance and modern reeling machines was essential to achieve and maintain the targeted level of quality over time (5A & 6A grade raw silk)

Figure 47: Reeling machine in Kigali (Rwanda) « HEWorks Ltd. » silk factor

[112] https://taarifa.rw/rwanda-ready-to-export-silk/ and https://www.ifad.org/en/web/latest/story/asset/41810804

In order to access the European market, the Filipino sector should build a qualitative and truly ambitious silk sector from yarns to apparels, and this also applies to the other three fibres. Of course, the investments envisaged will have to be proportional to the level of ambition displayed.

b) Market expectations should guide and direct the creation: on the European market as well as on others, the quality of a design lies in nothing less than its adequacy to the expectations of the market in question.

This is a delicate issue, but it is crucial and we must address it frankly.

The fact that the national textile traditions, local ethnic fabrics, spinning, weaving, embroidery, crocheting, dyeing etc. of the country are undoubtedly sources of enrichment and inspiration for contemporary designers, does not mean that Filipino apparels and accessories manufacturers should offer European customers designs, mostly based on local designs and know-how.

If the objective is to access the European markets of well-known brands and their powerful distribution networks, the ready-to-wear and consumer fashion market, which is by no means the niche market of ethnic fashion, or that of hand-woven or hand-knitted products (even if elements from the ethnic and artisanal worlds are regularly borrowed and adapted to enrich the stylistic proposals of ready-to-wear brands), then it is not the European customers who have to adapt to Filipino tastes in textiles and clothing, but rather the designers hired by Filipino exporters who have to create and propose collections according to the expectations of European clients, which, once again, do not necessarily coincide with the tastes of the national clientele of the exporting country.

Figure 48: A Rosanna Ocampo model

In other words, Suksuk silk designs, Barong Tagalog, local shawls, textile products made from fabric woven on handlooms etc., although they have an undeniable aesthetic value and undoubtedly represent a great niche market and source of inspiration, cannot form the sole basis of a Filipino offer with the ambition of entering the European fashion and ready-to-wear markets.

In a recent study (2020) carried out by the British council entitled "Sustaining handloom weaving in the Philippines", it is stated on page 11 that: « when purchasing products, the market prioritizes price over cultural value, though there is a niche market where price is not an issue ». I fully agree with that, but the main problem with a niche market is that, by definition, it is seriously limited.

We believe that the desire for development shown by the Filipino silk sector clearly militates in favour of commercial ambitions that go far beyond niche markets.

In that respect, the companies, the yarn, fabric and clothing designers wishing to work with European brands need to listen to them and fully understand their expectations, especially in terms of design. If certain local elements (fibres, type of weave, dyeing techniques, texture, etc.) coincide with these expectations, then of course we should not refrain from offering them. But above all, yarns, fabrics, models and collections designed to appeal to European buyers should not be elaborated on with reference to textile traditions and local tastes, however rich and honourable they may be. Neither the Italian or French silk suppliers, nor the Chinese, offer their international clients (Max Mara, Isabel Marant, Bottega Veneta, Max Jacob, etc.) designs based on their traditional national costumes even if they can draw inspiration from them on a regular basis.

It is the role and responsibility of the young generation of designers, both to revisit and subtly integrate their national textile tradition into their creative process, but also to learn to detach themselves from it, in order to build contemporary design's offers in line with the prevailing trends on the specific target markets and also with expectations corresponding to transnational and generational market segments (e.g. millenials, generation Y, Z and Alpha).

After a quick review, carried out with the help of stylists of my acquaintance, of the creations of various Filipino designers, we came to the (unsurprising) conclusion that the well-known stylists Betina Ocampo (see below pic. 15) and Rosanna Ocampo (see above pict. 14) - we were not able to determine whether they were from the same family? - were the very prototype of designers who had developed an in-depth understanding of the expectations of the market, which enabled them to develop well-targeted product lines (clothing label "Betina", shoes label "Daily schedule » for Betina Ocampo).

Their natural talent and their studies at Parsons School of Design in New York City for Betina[113] and in the Milanese Marangoni fashion school for Rosanna[114] certainly greatly contributed to the acquisition

[113] https://www.pinterest.com/runway2street/betina-ocampo/ and http://theedition.ph/shop/if-the-shoe-fits-betina-ocampos-next-act an d https://www.cnn.ph/life/style/Fashion/2019/9/24/second-wind.html

[114] https://rosannaocampo.com/pages/about-1 and https://www.forbes.com/sites/biancasalonga/2019/01/18/manila-designers-to-have-in-your-wardrobe-in-2019/#656259975e6c

of a double culture, of this sensitivity to fashion trends and gave them the ability to design products accordingly.

These designers lead and show the way.

It is vital to encourage and support this new generation, for example by spotting talents and helping them financially to continue their studies in reputable fashion schools abroad. Maybe this is already happening.

Figure 49: Betina Ocampo models fit with some contemporary EU market segment (young clientele, loose-fitting clothes, not formal, small delicate overall prints, ambiance nature, countryside, a touch of vintage, fresh, small finishing details, pastel tones, matching accessories etc.)

It is then necessary to integrate these professionals into the textile sector (which is not limited to the silk sector but concerns all the other fibres available in the Philippines), to convince local textile entrepreneurs, i.e spinning and weaving mills owners, dyeing units, printers, apparels makers, and also all strategic stakeholders of the importance of the role played by designers in facilitating the access to overseas markets.

This is in general, a delicate task.

The reluctance of entrepreneurs to finance the services of a designer is unfortunately a common fact in the industry, it is in generally easier to release funds to finance machinery, business trips, participation in trade fairs etc. than design services whose impact within the value chain is often poorly appreciated and underestimated, when it is truly strategic.

Frequently, and often wrongly, the company believes that the products it has been making for a long time are perfect and that they will please the European buyers as they are, this may be the case, but it is rarely the case.

My feeling is that designers having the right sensibility for understanding and adapting to international market requirements are still neither numerous enough nor sufficiently integrated and recognized by the textile industry in the Philippines and that supporting them in their training and professional integration could be a strategic issue for the industry.

Strategic because it would allow the development of a textile sector centred on creativity and quality, vertically coherent because integrating:

- An offer of quality yarns in silk (5A / 6A grade), in other local fibres, but also in blends combining various fibres, which is already being done in the Philippines, but could be developed and systematised to give rise to real families of yarns and associated ranges of colours, trendy colours, so that they can easily be proposed to international buyers, with some eventually available on stock-service.

Figure 50: silk yarns color card (Source: Aesthetic Stories, 3/07/2016 in Fabric Library)

- A qualitative and diversified offer of silk fabrics and blends elaborated by local spinning mills in close collaboration with designers, taking into account both fashion trends and market prices.

- Apparels and accessories collections: we should not forget the activities of fabric embellishment, in particular the printing on fabrics, so important for contemporary fashion in general (it is no coincidence that the models by Betina and Rosanna Ocampo chosen to illustrate this study are prints) and for the silk sector in particular, as we highlighted during the presentation of the French and Italian players in the sector.

It bodes very well that the Filipino textile printing sector is one of those benefiting from the Manufacturing Resurgence Program[115] (MRP) currently in phase II (2018 - 2021).

These are the basic bricks of the building, but to promote and support this indispensable global approach, a plan is also needed, and even better, a vision.

- The case of the Filipino's handmade textile products sector.

In the Filipino context, it is also necessary to consider the handloom weaving sector consisting mainly of micro and small enterprises and representing a considerable share of the woven fabrics produced in the country.

Having spent years in organizing and working with groups of hand knitters I have as much enthusiasm as respect for this sector of manual production, but I also know its limits.

In my opinion, this producer profile should be precisely the last one to be confined to niche markets. The real issue is not to keep a textile heritage alive (by confining it to museums, tourist villages, reports on "the last weavers of ...") but to make it live.

And in today's world, whether we like it or not, bringing it to life means connecting the sector to the international fashion market to try to find customers and obtain critical size orders which, by generating greater profits than those generated by niche markets, will allow producer organisations to live, that is to say to invest, to project themselves, to evolve, to make their ancestral techniques progress, to improve them (because this is a living tradition as opposed to a tradition frozen in the past, therefore dead).

[115] The MRP aims to rebuild the existing capacity of industries, strengthen new ones, and maintain the competitiveness of industries with comparative advantage. It also seeks to build-up agriculture-based manufacturing industries that generate employment, and support small-holder farmers and agri-cooperatives through product development, value-adding, and integration to big enterprises for marketing and financing purposes. http://industry.gov.ph/manufacturing-resurgence-program/

The international fashion market must be seen as an opportunity to safeguard know-how, but the latter must also constantly adapt to the changing needs of the market. One can adapt without betraying an ancestral tradition, it is exactly what the Italians and the French did in the field of silk.

Figure 51: Narda Handwoven Arts and Crafts - La Trinidad – Benguet
http://northphiltimes.blogspot.com/2014/01/weaving-essence-and-jobs-from.html

That sector is heavily dependent on the quality of inputs provided by upstream suppliers, especially the yarns. A large variety of high-quality yarns available in a wide and trendy range of colours, appearance, texture, with technical characteristics (colour fastness, resistance to pilling etc...) in line with industry's standards will greatly help the small handicraft companies to satisfy buyers' expectations.

Thus, improving the situation of craft weavers or knitters means considering the quality of the products manufactured upstream of the value chain (raw fibre, yarns), once again it is to the whole sector that the qualitative approach must be applied.

It is common knowledge that products handmade by village communities supposedly living in a privileged natural environment (which is far from always being the case because the images and ideas conveyed about this sector are rarely objective and often tinged with an idealism that distorts reality) are enjoying today a revival of interest.

But the international market is never short of contradictions…

Certainly, the end consumer wants the exotic thrill of the "authentic" product (we could have a long discussion on the concept of authenticity) made with respect for the environment, social and labour legislation, the « one-off » side at the antipodes of the mass-produced industrial product.

However, at the same time, he may also want a low price, perfect comfort and hand-feel, zero defects, delivery within 48 hours or less, the possibility of returning the article, ease of maintenance, etc... all requirements that are much easier to master in an industrial production context than in a craft production context.

By nature (precarious activity, low capitalization, etc.), a significant proportion of entrepreneurs in the craft sector suffer from some recurrent weaknesses in particular: lack of organisation, very low investment capacity resulting in a deficit or obsolescence of the productive apparatus, informal management of orders, lack of technical knowledge and unfamiliarity with the methods and criteria applicable in the framework of quality control operations, notoriously limited access to fashion trends prevailing in the target markets, difficulty in managing human resources (absenteeism, informal attitudes etc.), uncertain adherence to delivery times, approximate supply chain management, difficulty in calculating fair cost prices, approximate knowledge of export procedures, etc.

Although support and training programs are regularly put in place in most countries with artisan communities, including the Philippines, only a limited number of artisan communities are generally able to access international markets.

In conclusion, integrating artisanal communities into a value chain, into a qualitative sector, helping them to access export markets that are not only those niche markets that are too often narrow and complex, generating reduced profits for the work done, requires considerable effort and investment of time, an adapted approach and methodology, consistent and regular monitoring and also a strict selection of the best.

As this last point is not always compatible with the objectives of social integration and poverty reduction advocated by governments, a delicate trade-off has to be made and serious precautions taken, to avoid creating, as I have too often observed, false hopes within artisan communities.

But the efforts are often worthwhile, as this sector offers an undeniable potential for the segment we are dealing with, namely fashion clothing and accessories for the European market, rather on the high end, since the prices of good handmade items are often high and force one to move up the range.

My experience in the field has shown me that the following factors often play a decisive role in the success of such a venture:

. The presence on the spot of an intermediary (agent), European or not, but anyway well connected with the European buyers and aware of their expectations greatly facilitates the commercial communication, procedures and follow-up, as well as the coordination of production & QC.

. A close collaboration with local or European designers (often those working on behalf of the client).

. A strict selection of the best quality craftsmen.

. Professional management of the supply chain to ensure access to quality inputs (hence the importance, already underlined, of being able to rely on a qualitative and reactive upstream sector).

c) We have seen above that good « founding narratives » helped a country a great deal to appear as a bright spot on the radar of reliable, experienced and eventually famous silk suppliers.

All the interviews and responses to the questionnaires collected for this study point to one inescapable conclusion: to date, the Philippines does not appear on the radar of the silk-producing countries, except in an extremely marginal way.

Both for my colleagues in the fashion and marketing world with whom I have consulted on this theme and for me, this point really appears to be crucial.

We are convinced that if the Philippines really wants to increase it's chances of selling silk products, but also clothing and accessories made from abaca, banana and pineapple fibres to European buyers, it is imperative that the country be repositioned on the radar screen of trendy international fashion sourcing locations.

For us to move in this direction means that all involved stakeholders must first develop a real brave and firm, in spirit entrepreneurial vision for this textile sector, a vision on which will be grafted a powerful founding narrative, a holistic vision.

To simplify brutally, we could say that China is « the cradle of silk and the guardian of thousand-year-old traditions », the Italians « the magicians of weaving and colour », France « the heir to the splendours of its great 17th and 18th centuries ».

This may seem anecdotal, even anachronistic and pretentious - and it is completely so, because no country has a monopoly on greatness -, but it is precisely around these central themes that for decades the marketing discourse of companies and trade promotion organisations in silk exporting countries has been developing and renewing itself, both through texts and iconography... and it works! (it is enough to visit the websites of groups active in the luxury industry to realise that the themes, the vocabulary, the iconography etc. exploited in marketing communication are limited and recurrent).

The strength of these founding narratives is therefore considerable, the impact on buyers indisputable, so any country with ambitions in the field must give them serious thought.

Of-course it is not up to us, who know the country so poorly, to make suggestions in this respect, but there is one thing that is immediately fascinating to all those who, like my colleagues and I, look at this country from the outside, and that is its archipelagic dimension: more than 7000 islands! it is absolutely unique in the world and truly remarkable.

At a time when environmental and sustainability issues are on everyone's lips, when local cultures are struggling to integrate into the global network of exchange without denying their identity or sacrificing their uniqueness to latent uniformity, when the defence of biodiversity and ecosystems is becoming imperative, we found the idea of an archipelago country - a whole made up of thousands of distinct individualities endowed with exceptional natural and biological richness - particularly attractive and in the spirit of the times.

So, we couldn't help but imagine a founding narrative built around the theme: « The Philippines: The Silk Archipelago » or « The Philippines, the organic fibres archipelago » or something like that. This will be our very modest and naive initial contribution to the possible future reflection on the theme of a holistic « founding narrative » for the Philippines fashion industry.

iii - With regard to competitive advantages

The very weak presence of the Filipino silk sector on the international scene is also due to the difficulties it faces in building or consolidating this bundle of 8 key competitive advantages which, as we have seen above, are the foundation of the success of Chinese silk manufacturers, and also, with some differences, that of Italian and French silk companies.

We will again briefly review these competitive advantages here, to assess their degree of relevance in the Filipino context.

It is clear that the Philippine silk sector, despite the undeniable progress made in recent years, is far from reaching critical size.

Expertise and technical innovation are undeniably present in the country, but the means at their disposal and the intensity of their diffusion amongst the country's farming communities most likely to benefit from this knowledge, remains slow.

As far as the sector's creative offer is concerned, we have seen that, in the context of the European target market we are dealing with, the Filipino silk sector was not yet in a position to propose buyers an offer that was adapted both stylistically, qualitatively and quantitatively to their expectations, all the more so, as customer requirements in terms of certification and sustainability are growing and becoming more complex.

Developing adequate responses to these growing customer requirements in terms of quality and certification has led various stakeholders in the sector to forge international alliances, particularly with Japan for activities located far upstream in the sector (management of mulberry plantations, sericulture, spinning etc.).

These strategic alliances are an excellent form of adaptation to the market. We believe that it would be very profitable for the Filipino textile industry to amplify these international collaborations, especially in the field of design, but also in that of the optimisation of industrial processes throughout the value chain, in order to push, ever more upwards, the quality of all the products and processes of the sector (cocoons, raw silk, yarns, fabrics, fabric finishing and embellishing processes, printing, garment making etc.).

On this decisive effort, will depend the capacity of the sector to develop sufficiently qualitative and trendy offers to seriously enter the European markets; it will also nurture product diversification and branding.

The commercial and communication strategies of companies are generally part of and inspired by a very broad context encompassing at one end the « founding narrative » and at the other end, the intrinsic qualities of the offer actually developed by the sector.

We have just seen that both the founding narrative and the commercial offer of the whole sector have not yet reached an optimal level of maturity. Consequently, the Filipino textile and clothing manufacturers cannot rely on solid foundations to build both their communication and their commercial approach, their power of persuasion in front of European buyers is weak, as is their level of presence on the European markets.

iv - Conclusion

Whether it be with regard to the demand of the European markets (EU zone and EFTA combined), whether it be with regard to the basic essentials, namely the intrinsic quality of the product (in particular of the yarns, these fundamental constituents), its adequacy to market expectations, the positioning of the country as a known and recognised supplier on the international scene, whether it be with regard to the eight fundamental competitive advantages that we have highlighted and studied, it must be acknowledged that, in the current state of affairs, the conditions of access to the European markets for Philippine silk suppliers, are not favourable.

4.2.6.3 Facilitating access to the EU silk (& other fibres) market: areas for reflection

The Philippines are not the only country working on new market access strategies for its natural fibres in general and silk in particular.

We have seen above that the Italian silk industrial community considers that there are, in 2020, five possible ways to promote the growth of their sector: innovation, sustainability, culture-tradition, creative expression and development of tourism.

It clearly appears that in Italy, as elsewhere, sustainability is one of the central themes reorienting the reflections on the industrial and commercial strategies of the future. Key Italian textile organizations constantly underlined the importance of the theme of environmental and social sustainability. Some leading Italian companies have already made the shift to sustainability. This is the case of the following companies:

Figure 52: Clerici Tessuto / Italy - Design and product creation department

« Clerici Tessuto » which displays its orientation on its website https://www.clericitessuto.it :

« Clerici Tessuto focuses on organic silk and on generational change. Clerici Tessuto received from ICEA, Institute for Ethical and Environmental Certification, the GOTS certification (Global Organic Textile Standard) for its fine fabrics in organic silk.

The Global Organic Textile Standard (GOTS) is recognized as the world's leading processing standard for textiles made from organic fibres. The aim of the standard is to define world-wide recognized requirements that ensure organic status of textiles, from harvesting of the raw materials, through environmentally and socially responsible manufacturing, up to labelling in order to provide a credible assurance to the end consumer. etc »

« Ongetta s.r.l » http://www.ongetta.eu/inglese/ recognised as one of the world's leading companies in the field of silk yarn twisting and ready to print silk fabric trading.

« The organic silk production was introduced on an industrial level in 2017 and concerns continuous silk filaments.

« Ongetta » obtained the organic certification for silk yarns production by Global Organic Textile Standard (GOTS) and registered the silk bio brand by European Union Intellectual Property Office (EUIPO), it has been the first silk twisting mill certified GOTS in Europe by Environmental and Ethical Certification Institute (Istituto Certificazione Etica e Ambientale, ICEA).

ICEA https://icea.bio/en/ is the most important certification body in Europe; it operates to support fair and socially sustainable development of organic farming into other sectors related to bio.
ONGETTA signed the "GREENPEACE DETOX COMMITMENT", has obtained Gots certification and so is qualified to produce biological silk yarn. »

« s.c. Italtextil Sarata s.r.l » http://www.italtextil.eu/eng/the-company/about-us/ is another leading Italian company in the silk yarn twisting sector (500 employees, 1,000 tons of silk / year) which has centred its industrial and commercial strategy around the theme of sustainability.

« As silk is a natural fibre, it is possible to follow an eco-friendly path during all the production steps. For years ITALTEXTIL employees are happy to carry on the business, aware to not impact the ecosystem negatively. Therefore, over the few past years more attention has been given to the organic silk processing, that allows the product to keep its characteristics fully unaltered. »

The company provides very detailed information on its website about this sustainable approach (detox commitment, list of prohibited substances, results of analyses of their yarns and fabrics etc.), information we will come back to in the part of the study that we will devote to certifications.

This trend also affects other sectors working with natural fibres, such as the mohair industry.

When Mrs Lindsay Humphreys took over the leadership of MSA (Mohair South Africa) in 2019[116], she set the entire strategy of the organisation in a new direction to emphasise the importance and value of sustainable mohair farming. « Our strategic focus changed overnight, circumventing a natural evolution. Instead of marketing mohair for its unique properties, we now focus on the story of responsible farming practices and land management. Etc. »
The priorities set were as follows: « Focusing specifically on the successful implementation of the new international responsible mohair standard (RMS), which is currently being developed by the widely

[116] https://www.agriorbit.com/mohair-south-africa-under-new-management/

respected international non-profit organisation, Textile Exchange[117], which acts independently from MSA on behalf of the global textile value chain etc. "

The drastic reorientation of industrial and commercial strategies in line with the sustainability imperatives increasingly demanded by the market, is an accelerating trend affecting all natural fibres and all countries producing them.

In this perspective, and after consultation with various colleagues in the trade, it appeared to us that an orientation of at least part of the Filipino silk sector towards the production of « organic silk » could be a strategy that would give the country some serious assets to make a place for itself on the European markets and this for the following main reasons:

. As we have seen, the traditional silk sector is highly competitive and the market dominated by very big players. The entrance ticket to the conventional silk market is extremely high in terms of investments.

a) On the contrary, the market for organic silk is just emerging, and projects in this field are still very rare, even in China. To date, there are only 2 projects to produce organic silk in that country.

The « Bombyx » project[118] launched in 2019 by the Hong Kong based company « Profits Fund Global Holding Ltd » (PFGHL Group) https://www.pfghl.com/en/silk.html

« Otex Textiles Co., Ltd[119] » http://www.organic-textile.com based in Sichuan (China) but established by the well-known German organic products distributor « Triaz GmBh[120] » http://www.triaz-group.com and co-financed in equal shares (50/50) by Triaz and the Hong Kong based « Tiansheng Investment Group Co., Ltd ». 5 years of research, testing and practices (on soils, livestock, compost, sericulture

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[117] https://textileexchange.org/about-us/ We will come back to this organisation, which could be very interesting for the Philippine fibre sector, in the chapter devoted to certifications and standards.

[118] Bombyx is founded on the core principle that sustainability and organic agricultural processes are not only necessary but lead to increased market share and profitability for the whole supply chain. In order to produce the highest quality cocoon for their customers, Bombyx uses organic fertilizer, releasing fewer carbon emissions and restoring the vitality of the soil, allowing farmers to resume the planting of mulberry trees and prepare for the next harvest quicker and more efficiently https://www.textileworld.com/textile-world/fiber-world/2019/07/organic-silk-manufacturer-bombyxs-use-of-regenerative-agriculture-leads-the-organization-to-success/ and https://www.globenewswire.com/news-release/2019/05/06/1817570/0/en/PFGHL-Group-Launches-Organic-Silk-Company-Committed-To-High-Quality-Products-Sustainability-and-Social-Responsibility.html

[119] Main products are organic silk knitting fabrics and organic silk woven fabrics. Organic silk knitting fabrics include (wap net 65g/㎡, single jersey 78/92g/㎡, interlock jersey 110/140/165 g/㎡, 2x2 rib 110/130 g/㎡, etc.), organic silk woven fabrics include (paj 5m/m , habotai 8m/m and 16m / m, satin 16 / 19m / m, etc.)

[120] The Germany Freiburg-based Triaz group is an eco-pioneer and one of the leading companies in Germany in the sustainable sector. It manages the Waschbär (Racoon) and minibär (mini bear) ranges as well as some service providers. Both ranges offer environmentally and socially responsible products for the whole family and for all areas of life - from clothing and footwear, jewellery and cosmetics to household goods, home textiles and furniture.

technics etc.) have been necessary to set-up the farm and obtain the Swiss IMO certification[121] (world's first organic certification in 2003). Today « Otex » produces approximately 30 mt of silk filament a year.

We should also mention here two of the very few companies in the world making organic silk:

i - The Thai company **« Chul Thai Silk »** https://www.chulthaisilk.com

Founded in 1968 by Kamnan Chulakarnwong, the company has always prioritised a qualitative approach. A technical school was founded via a foundation financially supported by the Dutch cooperation. Technicians and experts, mostly women, were trained in advanced sericulture techniques in Japan. The company production process and supply chain are GOTS certified.

ii – The silk farming and handicraft cooperative "Mulberries" https://www.mulberries.org based in Laos. Founded in 1976 it established mulberries organic silk farms in 1993. Today the cooperative consists of 3000 farmers, weavers and artisans from over 200 villages. aim is to advance an ecological, economic, cultural and socially sustainable Lao silk and handicraft enterprise that improves the livelihood of the people we work with

Figure 53: Laos "Mulberries" organic silk cooperative (photography by Paul Wager)

b) Another interesting feature of the organic silk sector is that there is, to date, no established international standard, recognised and applicable worldwide. Attempts have been made but have not been successful. It is truly an emerging sector and it will probably take some time for it to mature and for a dominant standard to eventually emerge.

[121] https://www.ecocert-imo.ch/logicio/pmws/indexDOM.php?client_id=imo&page_id=home

Meanwhile the following two consequences follow:

On the one hand, various organic standards exist (it's a business) all over the world. When a company (or a country) decides to embark on a certification process it is highly recommended to use an experienced certification body with a solid international reputation for reliability and professionalism.

On the other hand, the absence of a single standard offers national organisations representing the silk sector, or any other interested private or public body, the opportunity to develop, where appropriate, national standards aimed at regulating but also promoting the local production of "organic silk" by providing the industry with a framework, criteria and rules.
This work, to be serious, will of course have to be carried out in close collaboration with silk companies' representatives, experts in the profession and also with an experienced certification body which will contribute its know-how in the field of standards development.

If this kind of approach were initiated by the appropriate government department, it would send a strong message to the international fashion community, demonstrating the country's true commitment to sustainability issues.

A message that would immediately become a marketing argument helping to position the country as a responsible and innovative player in the field of natural fibres.

c) Last but not least, this clear positioning on a sustainable and environmentally friendly approach would give the founding narrative, whose marketing importance we have highlighted above, a considerable gain in power and credibility.

Whether it be the "Philippines the archipelago of organic silk" or the more encompassing "Philippines the archipelago of organic fibres" or any other tag line, the vision would gain in coherence and impact.

This would undoubtedly greatly help the country to regain a place of choice on the radar screen of international suppliers of quality and ethical fibres and textile products.

For these reasons, we believe that the still-emerging market for organic silk could be a promising avenue for the Philippines to explore.

4.3. Abaca, banana and pineapple fibres: the competitive stakes and access to market

Having arrived at this stage of the study, I will limit myself to defining what I believe to be the major stakes in the competition of this three-fibre sector and to indicate a possible path to reposition the Philippines on the world fashion scene, the sustainable fashion scene.

Any project to promote or develop these fibres cannot be done otherwise than within a sustainable framework, or we would be going completely against the deep trends of the market.

4.3.1. The major challenges of competition in the three vegetal fibres sector

To my knowledge, and with three serious exceptions, which we will discuss below, there is no company today, in any country that can offer yarns - we always come back to yarns - made of abaca fibre, banana fibre and even pineapple fibre, that can be used by the textile and clothing industry (we are talking here about industry and not craftsmanship) to weave and/or knit fashion garments or accessories adapted to the demand of European designers and consumers.

Certainly, Costa Rica, the Philippines, India, Ghana, Indonesia, Thailand, Mexico, etc., all of these countries produce these fibres, but the terrain on which the real competition will be exercised is situated beyond and downstream of the fibre collection sector, it is indeed in the field of yarn production that the competition will take place.

The real question is therefore to know who will be the first to develop yarns in abaca, banana and pineapple, sustainably, really attractive for the designers of international fashion brands and of sufficient quality to be used by the world textile industry.

It is the yarn that will define the space in which the real competitive challenge will be played out.

But for the moment this space hardly exists - how could one study the competition, apart from that, perhaps, which opposes the spinners and research institutes of various fibre-producing countries to precisely develop these yarns of the future.

Because the race for research and innovation is open, three companies have already made a great breakthrough.

The company « Ananas Anam » https://www.ananas-anam.com based in London, produces and distributes Pinatex® fabric. The work carried out by the founder of the company, Dr. Carmen Hijosa, is exceptional and exemplary in every way.

Exceptional because it took a great deal of conviction, perseverance and courage to embark on such an adventure and succeed, after seven years invested in research and development, in creating, from the waste of Filipinos pineapple plants, an innovative, non-woven fabric, using non-toxic chemicals, perfectly natural and durable.

Exemplary, because it is clear that, from the very beginning of the adventure, Mrs. Hinoja has perfectly analysed, understood and integrated into her project the tastes and expectations of the European textile and fashion market. Her training at the Royal College of Art in London will have greatly contributed to sharpening her perception in the latter field, which is as strategic as the strictly scientific and technical R&D phase.

All the recognition and awards obtained by the company "Ananas Anam" to date are well deserved.

But Mrs. Hinoja, her team and strategic partners such as the famous sustainability driven company « Stahl » https://www.stahl.com/about-us , the world leader in the specialty chemistry of coatings, processing and treatments, are already collaborating to enhance the performance and sustainability of Piñatex.

Then, certainly, the next step will be: the study and development of yarns from pineapple fibres, yarns technically suitable for use in the weaving and/or knitting industry and yarns produced according to sustainable methods.

And this is where the real competitive challenge lies.

Which - country, public body, private company - will be the first to succeed in developing an industrial quality yarn from pineapple, abaca or banana fibres?, Because for these three materials, the stakes are the same.

In this field some companies, such as the Thai company "Nextevo" https://nextevo.one/pineapple-leaf-fibre which has developed a quality of yarn (available in traditional cones) from PALF (Pineapple leaf fibre) which can be used by the garment industry on its own in blends with polyester or tencel, certainly have a certain lead, but contrary to the market for traditional (i.e. non-organic) silk, the competition remains in this particular field wide open to welcome new suppliers capable of offering innovative yarns adapted to the demand of the fashion industry.

4.3.2. A possible path: the strategic importance of spinning

Like Ms Hinoja, the work of Sebastian Kruit, Christian Kaegi, Fabrice Aeberhard, Matthias Graf and Hannes Schoenegger, co-founders of the Swiss company « Qwstion », shows us that the development of yarns from new materials is a long and expensive process, but it works.

Three years of intensive research, testing and development were required for « Qwstion » to develop, together with a Taiwanese spinning partner, their fibre Bananatex®, the world's first technical fabric developed from abaca fibres of Filipino origin. Still too coarse to be used in clothing, it is used to make bags.

The quality and styles of the Bananatex® bag collections, designed, produced and distributed by the Swiss team, are simply exceptional. This is a great achievement.

It is the same logic of sustained efforts and investments that is at work when the Swiss high-end fashion company « Akris » decided to create bags from horsehair imported from Mongolia. A whole process must then be imagined, experimented and put in place to finally end up with the brand's iconic bag, the « Ai bag » model.

Similarly, after 2 years of working on the abaca fibre and obtaining initial results that were more than encouraging, the researchers from the Lucerne Institute of Design, Mrs Moor and her team, believe that it will take years of effort to reach the industrial phase.

Only a substantial investment, followed over the long term, integrating the strategic factors of adapted designs, durability, adequacy to market requirements (colour, hand-feel…), etc., from the very inception of the project, will make it possible to create, upstream of the value chain, the indispensable spinning industry.

For it is this sector that will make it possible to irrigate all the downstream branches of the industry, in particular knitting and weaving, with collections of yarns conceived and manufactured for the tastes of the European and international markets.

Because without threads, without these specially tailored bricks, one simply cannot build the house, one simply cannot access the market.

This is exactly what the 21 European fashion professionals meant when, all without exception, answered in the same way to question 6 of the questionnaire:

« What, in order of preference, would be your criteria for selecting a new fibre? »

Answer: *« Quality and properties of the yarns: hand feel, softness, appearance, colour fastness, tensile strength, resistance to pilling, ability to be woven or knitted, dyeing affinity, richness of the colour card, ease of maintenance etc. »*

All of the other interlocutors with whom I have been able to exchange views, confirm this point.

The yarns are truly the strategic element at the heart of the international competitiveness system.

I will cite just one striking example in this respect.

The whole of Peru's exports of alpaca fashion clothing, knitted or woven, so important for the balance of trade and for maintaining thousands of jobs in the country's numerous textile SMEs, rely entirely on two spinning mills: « Incatops » https://www.incatops.com/es/ and « Michell » https://www.michell.com.pe .

These two competitors supply the entire industrial sector with quality yarns whose aesthetic and technical characteristics have been studied and designed to perfectly meet the expectations of international fashion customers.

Without these two spinning mills a very large part of the local knitwear industry, representing tens of thousands of jobs, would not exist.

Thanks to these two key players Peru, in 20 years, has firmly positioned itself on the radar of world fashion, with natural fibres from the most remote parts of the country.

The Peruvian manufacturers, in collaboration with the government for the promotional aspects, have been able to transform the fibre according to the strict expectations of international clients and have also been able to take advantage of the country's history and exceptional landscapes to build a beautiful and efficient « founding narrative ».

They have also provided an outlet for all of the country's small alpaca fibre producers and have encouraged them to improve the quality of the fibre produced, by paying more for the highest quality batches. (N.B. the quasi-monopoly of the 2 spinning mills on the purchase of raw material has also created tensions, there is still a lot to be done to balance the whole sector and to remunerate the small alpaca breeders more fairly).

In my opinion, this path, the essential stages of which, have just been illustrated by the strategic choices of individual companies, or even an entire industrial sector, is undoubtedly one of the best and most sensible to follow, adding, in the case of the Philippines, the dimension of sustainability.

The talents are there, they are always there. Their voices must be heard and we must help them find the means to develop the sector. To the names of designers already mentioned, we could add many others, for example Mrs. Dita Sandico who has a long career in the profession and seems to have worked a lot on the ranges of colours, textures, the needs of the craftsmen etc.

All these stakeholders (designers, industrialists, researchers, craftsmen, etc.) can, through their experience, participate in the reflection, aiming at setting up a Filipino yarn sector which would really enable the country to reposition itself on the world fashion scene.

4.3.3 Investors and strategic partners

Finding, convincing, helping, accompanying etc. investors is no easy task, you need a vision, a strategy, clear proposals etc... But if some have already succeeded, superbly, with certain fibres, others will also be able to do so.

I would just like to point out, for information purposes, the existence of the Swiss investment company "Quadia" http://www.quadia.ch, which is "a pioneer investment company allocating private and institutional wealth into investment strategies that create positive social and environmental impact." I believe that their experience and expertise, their client portfolio, etc., is appropriate for the type of investment just mentioned.

The strategic partners for a sustainable spinning industry would of course be:

- Designers specializing in yarn development, researchers.

An important point: many Filipino spinners, Mrs. Moor's team in Switzerland and also spinners from other countries have already experimented with material blends for their yarns, where the special qualities of one fibre can balance or compensate for the weaknesses of another.

This option of combining fibres available locally in the Philippines - silk, abaca, piña etc. - is an alternative that it is fundamental to explore in depth. This could facilitate the development of industrial quality yarns.

Filipino research organisations, in particular DOST-PTRI and DOST-FPRDI, are already working extensively on these animal and vegetable materials.

Regarding silk, in the case of PTRI (recent programmes are listed here: http://ptri.dost.gov.ph/images/transparency/2019_Major_Programs_and_Projects.pdf).

Regarding abaca, in the case of the FPRDI, but rather with a view to strengthening the industrial sector for abaca pulp, which is natural since it is the main outlet for this fibre (its relatively long staple length, strength and cellulose content make it ideal for the production of special papers including tea and coffee bags, sausage casing paper, electrolytic papers, currency paper, cigarette filter papers, food preparations and medical filter papers, stencil papers and dictionary/bible paper etc.).

- Experts in spinning processes and in the choice of suitable textile machinery: There are certainly many Filipino initiatives in this field. The Swiss "Qwstion" works, as we have mentioned, with a Taiwanese spinner; there are excellent expert spinners in Asia, but also in Europe (in France, Italy, Austria etc.);. Mrs Moor is trying to carry out weaving trials with an Austrian weaving mill working on sisal fibres.

- The fabrics and apparels designers: because, once again, the products must be perfectly adapted to the expectations of the buyers in the target markets, here Europe, EFTA and EU. Spinners, weavers and exporters must be familiar with these markets.

- The certification and/or advisory bodies to set up a sustainable approach from the outset (cf. par. on certification)

- International cooperation, such as the Abaca Sustainability Initiative Project implemented few years ago with the PhilFIDA and the German Federal Ministry of Development Cooperation (BMZ) through German Development Cooperation (GIZ)

4.3.3. Access to market: the « last mile »

Once a minimal offer of yarns, truly innovative, design-oriented and strictly in line with the expectations of the European clothing and fashion accessory market is available, preferably reinforced by strong communication work around the « founding narrative » to help reposition the country on the international fashion radar, the approach to European buyers can be relaunched.
To do this, all means, from the most traditional, to the most technologically advanced, can be used.

Participation in European trade fairs (to be carefully selected), selling missions (to be prepared with well-established local contacts, very useful in countries such as Scandinavia, for example, which are difficult to access), use of local agents (which for certain markets such as Germany or the Scandinavian countries can be a coherent option), setting up representative offices to promote the Philippine textile industry in Europe, use of B2B market networks or B2B trade shows. For Europe, I would recommend in particular “FourSource” https://www. foursource.com .

Good use of social networks; Here again taking into account the expectations of European customers - collaboration with local communication agencies or web designers, to develop social media strategies adapted to the target market (today, not having a social media strategy is equivalent to not having a strategy at all.), intense and very targeted networking, buying missions, organised in the Philippines and aimed at a particular buyers’ profile etc...

European purchasers must literally be won back.

All the exchanges that I had with European professionals in the sector, in the framework of this study, show that today, unfortunately, the Philippines is, in general, not at all perceived by buyers and designers working for European fashion companies as a country capable of offering truly attractive textile proposals.

The magnificent Filipino textile heritage, its exceptional wealth of fibres, are still largely unknown, except by a few buyers in small niche markets.

Accessing the market, and therefore winning back buyers, requires the elaboration of an offer, truly adapted to their expectations and requirements.

The key and strategic element of this offer is the yarn.

Pioneers such as "Ananas Anam" or "Qwstion" have shown the way: to innovate and invest seriously over the long term to finally develop, from native fibres, attractive yarns, fabrics and apparels for the world's largest fashion market, Europe.

ANNEX 1: List of textile fibers names as issued by the regulation (EU) No 1007/2011 of the European Parliament

Number	Name	Fibre description
1	wool	fibre from sheep's or lambs 'fleeces (Ovis aries) or a mixture of fibres from sheep's or lambs 'fleeces and the hairs of animals listed in number 2
2	alpaca, llama, camel, cashmere, mohair, angora, vicuna, yak, guanaco, cashgora, beaver, otter, followed or not by the word 'wool 'or 'hair'	hair of the following animals: alpaca, llama, camel, kashmir goat, angora goat, angora rabbit, vicuna, yak, guanaco, cashgora goat, beaver, otter
3	animal or horsehair, with or without an indication of the kind of animal (e.g. cattle hair, common goat hair, horsehair)	hair of the various animals not mentioned under number 1 or 2
4	Silk	fibre obtained exclusively from silk-secreting insects
5	cotton	fibre obtained from the bolls of the cotton plant (Gossypium)
6	kapok	fibre obtained from the inside of the kapok fruit (Ceiba pentandra)
7	flax (or linen)	fibre obtained from the bast of the flax plant (Linum usitatissimum)
8	true hemp	fibre obtained from the bast of hemp (Cannabis sativa)

9	Jute	fibre obtained from the bast of Corchorus olitorius and Corchorus capsularis. For the purposes of this Regulation, bast fibres obtained from the following species shall be treated in the same way as jute: Hibiscus cannabinus, Hibiscus sabdariffa, Abutilon avicennae, Urena lobata, Urena sinuata
10	abaca (Manila hemp)	fibre obtained from the sheathing leaf of Musa textilis
11	Alfa	fibre obtained from the leaves of Stipa tenacissima
12	coir (coconut)	fibre obtained from the fruit of Cocos nucifera
13	broom	fibre obtained from the bast of Cytisus scoparius and/or Spartium Junceum
14	ramie	fibre obtained from the bast of Boehmeria nivea and Boehmeria tenacissima
15	sisal	fibre obtained from the leaves of Agave sisalana
16	sunn	fibre from the bast of Crotalaria juncea
17	henequen	fibre from the bast of Agave fourcroydes
18	maguey	fibre from the bast of Agave cantala

ANNEX 2: the 14 chapters of Harmonized System (HS) section XI « Textiles and textiles articles ».

CN Chapters	SECTION XI - TEXTILES and TEXTILES ARTICLES Description of commodity groups
50	Silk
51	Wool, fine or coarse animal hair; horsehair yarn and woven fabric
52	Cotton
53	Other vegetable textile fibres; paper yarn and woven fabrics of paper yarn
54	Man-made filaments; strip and the like of man-made textile materials
55	Man-made staple fibres
56	Wadding, felt and non woven; special yarns; twine, cordage, ropes and cables
57	Carpets and other textile floor coverings
58	Special woven fabrics; tufted textile fabrics; lace; tapestries: trimmings; embroidery
59	Impregnated, coated, covered or laminated textile fabrics; textile articles of a kind suitable for industrial use
60	Knitted or crocheted fabrics
61	Articles of apparel and clothing accessories, knitted or crocheted
62	Articles of apparel and clothing accessories, not knitted or crocheted
63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags

N.B. the 6 chapters in bold characters are the most relevant for the survey (see below)

ANNEX 3: The 14 headings or sub-headings of Cat. 61 « Articles of apparel and clothing accessories, knitted or crocheted » that we will consider as statistical population for silk fibre.

CN code	DESCRIPTION
6103 39	Men's or boys' jackets and blazers, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).
6104 39	Women's or girls' jackets and blazers, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).
6104 49	Women's or girls' dresses, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, artificial fibres, cotton).
6104 59	Women's or girls' skirts and divided skirts, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).
6104 69	Women's or girls’ trousers, bib and brace overalls, breeches and shorts, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).
6106 90 30	Women's or girls’ blouses and shirts-blouses, knitted or crocheted, of silk or of silk waste
N.B: if that	above category is not available then we’ll go for the more generic one i.e:
6106 90	Women's or girls ’blouses and shirts-blouses, knitted or crocheted, of other textile materials (Excl. cotton, man-made fibres)
6107 29	Men's or boys' night shirts and pyjamas, of other textile materials (Excl. cotton, man-made fibres)
6108 19	Women's or girls ’Slips and petticoats, of other textile materials (Excl. man-made fibres)
6108 29	Women's or girls ’briefs and panties, of other textile materials (Excl. cotton, man-made fibres)
6108 39	Women's or girls ’nightdresses and pyjamas, of other textile materials (Excl. cotton, man-made fibres)
6109 90 90	T-shirts, singlets and other vests, knitted or crocheted, of other textile materials (Excl. cotton, wool or fine animal hair, man-made fibres)

CN code	DESCRIPTION
N.B: if that	above category is not available then we'll go for the more generic one i.e:
6109 90	T-shirts, singlets and other vests, knitted or crocheted, of other textile materials (Excl. cotton)
6110 90 90	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted, of other textile materials [Excl. wool or fine animal hair, Kashmir (cashmere) goats, cotton, man-made fibres, flax or ramie)
N.B: if that	above category is not available then we'll go for the more generic one i.e:
6110 90	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted, of other textile materials [Excl. wool or fine animal hair, Kashmir (cashmere) goats, cotton, man-made fibres]
6116 99	Gloves, mittens and mitts, knitted or crocheted, of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres)
6117 10	Shawls, scarves, mufflers, mantillas, veils and the like, knitted or crocheted

ANNEX 4: The 13 headings or sub-headings of Cat. 62 « articles of apparel and clothing accessories, not knitted or crocheted » that we will consider as statistical population for silk fibre.

CN CODE	Commodity group description
6204 19 90	Women's or girls' suits of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres, artificial fibres)
N.B: if that	above category is not available then we'll go for the more generic one i.e:
6204 19	Women's or girls' suits of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres)
6204 39 90	Women's or girls' jackets and blazers of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres, artificial fibres)
N.B: if that	above category is not available then we'll go for the more generic one i.e:
6204 39	Women's or girls' jackets and blazers of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres)
6204 49 10	Women's or girls' dresses, not knitted or crocheted, of silk or of silk waste
N.B: if that	above category is not available then we'll go for the more generic one i.e:
6204 49	Women's or girls' dresses, not knitted or crocheted, of other textile materials
6204 59 10	Women's or girls' skirts and divided skirts of silk or of silk waste (excl. knitted or crocheted and petticoats)
N.B: if that	above category is not available then we'll go for the more generic one i.e:
6204 59	Women's or girls' skirts and divided skirts of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres)
6204 69 10	Women's or girls' trousers, bib and brace overalls, breeches and shorts of silk or of silk waste (excl. of wool, fine animal hair, cotton or synthetic fibres, knitted or crocheted, panties and swimwear)
N.B: if that	above category is not available then we'll go for the more generic one i.e:

CN CODE	Commodity group description
6204 69 (includes 69 01 & 69 09)	Women's or girls' trousers, bib and brace overalls, breeches and shorts of textile materials (excl. of wool, fine animal hair, cotton or synthetic fibres, knitted or crocheted, panties and sw
6205 90 80	Men's or boys' shirts, of other textile materials (Excl. cotton, man-made fibres, flax or ramie)
6205 90 90	Men's or boys' shirts of textile materials (excl. of wool, fine animal hair, vegetable fibres or man-made fibres, other than knitted or crocheted, nightshirts, singlets and other vests)
N.B: if the	above categories are not available then we'll go for the more generic one i.e:
6205 90	Men's or boys' shirts, of other textile materials (Excl. cotton, man-made fibres)
6206 10 10	Women's or girls' blouses, shirts and shirt-blouses of silk or silk waste, not embroidered, made of lace or containing lace (excl. knitted or crocheted and vests)
6206 10 90	Women's or girls' blouses, shirts and shirt-blouses of silk or silk waste, embroidered, made of lace or containing lace (excl. knitted or crocheted and vests)
6206 10	Women's or girls' blouses and shirts, not knitted or crocheted, of silk or of silk waste
N.B: if the	above categories are not available then we'll go for the more generic one i.e:
6206	Women's or girls' blouses and shirts, not knitted or crocheted
6207 19	Men's or boys' Under pants and briefs, of other textile materials (Excl. cotton)
6207 29	Men's or boys' night shirts and pyjamas, of other textile materials (Excl. cotton, man-made fibres)
6208 19	Women's or girls' slips and petticoats, of other textile materials (Excl. man-made fibres)
6208 29	Women's or girls 'nightdresses and pyjamas, of other textile materials (Excl. cotton, man-made fibres)
6214 10 00	Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted, of silk or of silk waste

CN CODE	Commodity group description
N.B: if that	above category is not available then we'll go for the more generic one i.e:
6214	Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted
6215 10	Ties, bow ties and cravats, not knitted or crocheted, of silk or of silk waste
N.B: if that	above category is not available then we'll go for the more generic one i.e:
6215	Ties, bow ties and cravats of textile materials, not knitted or crocheted

ANNEX 5: Swiss imports from the Philippines of Cat. 50 / silk items, over the last 5 years

CN Code	Commodity description	2015	2016	2017	2018	2019
5001	Cocoons	0	0	0	0	0
5002	Raw silk (non-thrown)	0	0	0	0	0
5003	Silk waste, incl. cocoons unsuitable for reeling, yarn waste and garnetted stock	0	0	0	0	0
5004	Silk yarn (excl. that spun from silk waste and that put up for retail sale)	0	0	0	0	0
5005	Yarn spun from silk waste (excl. that put up for retail sale)	0	0	0	0	0
5006	Silk yarn and yarn spun from silk waste, put up for retail sale; silkworm gut	0	0	0	0	0
5007	Woven fabrics of silk or of silk waste	0	2kg / Usd 1,413	0	0	0

ANNEX 6: Swiss imports from the Philippines of Cat. 61 statistical population.

N.B. We have only here type 2 data (cf. par. 2.1.1.3)

Code	2015	2016	2017	2018	2019
	Commodity description				
6103 39	Men's or boys' jackets and blazers, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).				
	0	109	0	0	0
6104 39	Women's or girls' jackets and blazers, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).				
	426	1 420	289	0	0
6104 49	Women's or girls' dresses, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, artificial fibres, cotton).				
	0	0	133	0	0
6104 59	Women's or girls' skirts and divided skirts, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).				
	1 936	844	0	0	0
6104 69	Women's or girls' trousers, bib and brace overalls, breeches and shorts, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton				
	4 096	14 589	21 164	56 732	96 898
6106 90	Women's or girls 'blouses and shirts-blouses, knitted or crocheted, of other textile materials (Excl. cotton, man-made fibres)				
	0	0	0	0	0
6107 29	Men's or boys' night shirts and pyjamas, of other textile materials (Excl. cotton, man-made fibres)				
	0	0	0	0	0
6108 19	Women's or girls 'Slips and petticoats, of other textile materials (Excl. man-made fibres)				
	0	0	0	0	0

	2015	2016	2017	2018	2019
Code	Commodity description				
6108 29	Women's or girls 'briefs and panties, of other textile materials (Excl. cotton, man-made fibres)				
	0	13	0	0	0
6108 39	Women's or girls 'nightdresses and pyjamas, of other textile materials (Excl. cotton, man-made fibres)				
	0	0	0	112	0
6109 90	T-shirts, singlets and other vests, knitted or crocheted, of other textile materials (Excl. cotton)				
	955,553	1 073 228	1 001 528	914 477	457 846
6110 90 90	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted, of other textile materials [Excl. wool or fine animal hair, Kashmir (cashmere) goats, cotton, man-made fibres, flax or ramie)				
	32 871	332	0	11 246	37
6116 99	Gloves, mittens and mitts, knitted or crocheted, of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres)				
	16 422	8 761	6 899	0	156
6117 10	Shawls, scarves, mufflers, mantillas, veils and the like, knitted or crocheted				
	50	3 959	57	1 878	242

ANNEX 7: Swiss imports from the Philippines of our Cat. 62 statistical population.

N.B. The codes in bold letters indicate type1 data, i.e. explicitly identified silk products. Other codes concern type 2 data.

Code	Commodity description	2015	2016	2017	2018	2019
6204 19	Women's or girls' suits of textile materials (excl. of wool, fine animal hair, cotton or synthetic fibres, knitted or crocheted, ski overalls and swimwear)	0	0	0	0	0
6204 39	Women's or girls' jackets and blazers of textile materials (excl. of wool, fine animal hair, cotton or synthetic fibres, knitted or crocheted, wind-jackets and similar articles)	7 436	32 914	2 253	7 328	20 602
6204 49	Women's or girls' dresses of textile materials (excl. of wool, fine animal hair, cotton or man-made fibres, knitted or crocheted and petticoats)	811	84	167	9698	36 033
6204 59 10	Women's or girls' skirts and divided skirts of silk or of silk waste (excl. knitted or crocheted and petticoats)	0	0	1 900	0	0
6204 69 10	Women's or girls' trousers, bib & brace overalls, breeches & shorts of silk or silk waste	0	0	0	483	2 885
6205 90	Men's or boys' shirts of textile materials (excl. of cotton or man-made fibres, knitted or crocheted, nightshirts, singlets and other vests)	168 034	279 416	156 270	77 550	164 181
6205 90 90	Men's or boys' shirts of textile materials (excl. of wool, fine animal hair, vegetable fibres or man-made fibres, other than knitted or crocheted, nightshirts, singlets)	2 996	2 997	0	1 713	1 713
6206 10 10	Women's or girls' blouses, shirts and shirt-blouses of silk or silk waste, not embroidered, made of lace, nor containing lace (excl. knitted or crocheted and vests)	0	0	3 487	2 391	9 106

	2015	2016	2017	2018	2019
Code	Commodity description				
6206 10 90	Women's or girls' blouses, shirts and shirt-blouses of silk or silk waste, embroidered, made of lace or containing lace (excl. knitted or crocheted and vests)				
	0	43	0	0	0
6207 19	Men's or boys' underpants and briefs of textile materials (excl. cotton and knitted or crocheted)				
	0	0	25	27	0
6207 29	Men's or boys' nightshirts and pyjamas of textile materials (excl. of cotton or man-made fibres, knitted or crocheted, vests, singlets and underpants)				
	0	0	0	0	0
6208 19	Women's or girls' slips and petticoats of textile materials (excl. man-made fibres, knitted or crocheted and vests)				
	0	0	0	0	0
6208 29	Women's or girls' nightdresses and pyjamas of textile materials (excl. cotton and man-made fibres, knitted or crocheted, vests and négligés)				
	0	0	0	0	0
6214 10 00	Shawls, scarves, mufflers, mantillas, veils and similar articles of silk or silk waste (excl. knitted or crocheted)				
	0	2109	1 549		12
6215 10	Ties, bow ties and cravats of silk or silk waste (excl. knitted or crocheted)				
	0	0	0	0	0

ANNEX 8: Swiss total imports of Cat. 62 selected population 2015-2019 - USD

	2015	2016	2017	2018	2019
6204 19 Women's suits	612 102	803 708	567 108	635 488	858 897
6204 39 Women's jackets	16 936 990	16 691 379	16 126 822	18 741 080	21 847 757
6204 49 Women's dresses	32 663 102	38 757 399	43 278 855	61 204 393	60 843 191
6204 59 10 Women's silk skirts	2 197 159	2 228 287	2 626 481	3 846 706	5 397 467
6204 69 10 Women's silk trousers	2 654 399	2 494 044	2 586 229	4 348 548	5 205 937
6205 90 Men's shirts (a)	7 419 315	7 492 200	8 727 134	9 581 028	11 554 623
6205 90 90 Men's shirts (b)	2 503 444	2 130 674	2 606 107	2 664 558	4 042 806
6206 10 10 Women's silk blouses	25 185 353	25 185 353	23 183 523	27 203 746	27 310 472
6207 19 Men's underpants	343 251	342 249	376 853	373 635	450 582
6207 29 Men's pajamas	125 291	104 676	186 793	304 295	169 663
6208 19 Women's slips	496 383	734 616	737 908	709 809	702 625
6208 29 Women's night dress	1 411 270	1 120 471	1 123 296	1 178 484	959 065
6214 10 Silk shawls & scarves	21 220 014	19 053 139	17 959 971	19 345 567	19 270 485
6215 10 Silk ties	20 012 934	16 070 216	16 482 657	16 810 762	14 044 511
TOTAL	133 781 006	133 208 409	136 569 737	166 948 096	172 658 080

ANNEX 9: List of sustainable and/or organic materials mostly used by European sustainable clothing companies.

Bamboo
Organic cotton
Organic hemp
Kapok
Organic linen, linen from certified organic farms
Organic Corduroy

Silk from GOTS-certified factories
Organic silk (still being defined)

Organic wool
Wool from farms with animal welfare certification
Yak wool from sustainable farming communities
Cashmere sourced from free-roaming goats in Mongolia.
Merino wool chosen for its biodegradability.
Mulesing free wool (Mulesing is the removal of part of the perianal skin of sheep to reduce the incidence of parasitic larvae, often performed without anaesthesia or antibiotics.

Vegetable tanned leather
Vegetable-tanned leather, biodegradable leather or leather alternatives such Pinatex®

GOTS certified organic fabrics.
Eco Jeans / Eco Denim

Lenzing™-Ecovero™ (most ecological viscose thread)
Lenzing Modal® and Tencel. Lenzig modal ® austria This innovative fibre is produced in Austria from wood pulp. It is extraordinarily soft and silky, yet absorbent, breathable and washable. These fabulous properties make it a luxury must-have.
Econyl® partially made of recycled fishing nets which have been recovered from the oceans
Tenowa® means « textile-no-waste », a new project form the Portuguese supplier Riopele https://www.riopele.pt/brands . Here the production left overs are reused into 100% recycled yarns, with a strong focus on low energy and water consumption. The Tenowa® project won the „Sustainable Product“ prize from the Portuguese technology institute Citeve.
Refibra (Tencel made with up cycled cotton scraps from garment production and wood pulp), chrome-free leather,
Recycled polyester and rayon
Green PU coating and recycled PET from plastic bottles.

Modal
Tencel (a cellulose fibre derived from wood pulp)
Lyocell (biodegradable)
Up-cycled Polyamide Q-Nova textile

ANNEX 10: Norwegian imports from Philippines of Cat. 61 commodity groups that may include some silk garments. (There is no way of knowing in which proportion).

. Annex 10a - CN codes 6109 90 10 & 90 90 « T-shirts, singlets and other vests of textile materials, knitted or crocheted (excl. cotton, wool or fine animal hair or man-made fibres) »

(Imported amounts in USD)

		2012	2013	2014	2015	2016	2017	2018	2019
6109	90 10	91 661	198 412	195 822	320 662	425 652	431 090	109 759	431 277
6109	90 90	312 121	681 813	460 311	305 593	368 905	310 949	372 524	423 179

. Annex 10b - CN code 6106 90 « Women's blouses and shirts, knitted or crocheted, of other textile material »

		2012	2013	2014	2015	2016	2017	2018	2019
6106	90	0	681	204	0	169	161	550	0

(Imported amounts in USD)

ANNEX 11: Norwegian imports from the Philippines of Cat. 62 commodity groups

. Annex 11a: CN code 6206 10 « Women's blouses and shirts, not knitted or crocheted, of silk or of silk waste » (type 1 data)

(Imported amounts in USD)

	2012	2013	2014	2015	2016	2017	2018	2019
6206 10	0	0	341	2 199	0	210	3 297	3 646
Nbr. of pieces			3	9		2	16	16

. Annex 11b: The 7 commodity groups of Cat. 62 most imported by Norway.

Of these 7 categories only the « brassières's » one (Cat. 6212 10) could eventually include pieces of garments made of silk but again there is no way of knowing in which proportion, but from the existing import figures it is not hard to imagine that the value is not significant.

(Imported amounts in USD)

CN	DESCRIPTION	2015	2016	2017	2018	2019
6205 20	Men's or boy's shirts of cotton	2 088 694	1 896 252	1 580 174	1 337 712	1 525 512
6205 90	Men's or boy's shirts of other textile materials (excl. cotton & man-made fibres)	160 989	305 935	417 182	189 382	147 679
6212 10	Brassières, whether or not knitted or crocheted	89 686	248 731	206 520	129 537	148 134
6201 93	Men's or boys' overcoats, car coats, capes, cloaks, anoraks of man-made fibres	1 197 857	956 772	1 167 944	1 604 057	1 867 232

CN	DESCRIPTION	2015	2016	2017	2018	2019
6203 43 09	Men''s or boys'' trousers, bib and brace overalls, breeches and shorts of synthetic fibres	54 753	58 448	40 470	60 961	89 354
6202 93	Women''s or girls'' anoraks, windcheaters, wind jackets and similar articles, of man-made fibres	44 655	30 321	42 454	45 247	53 001
6204 62 09	Women's or girls trousers, bib and brace overalls, breeches & shorts of cotton	14 517	8 526	27 575	40 950	75 076

ANNEX 12: Norway, main supplying countries for Cat 61 selected population
Year 2019

(Amounts in USD)

Supplying countries			
Asia	Europe	Imports value 2019 - USD	% of total Cat. 61 population
China		34 299 879	37.2 %
	Lithuania	9 577 919	10.4 %
	Turkey	6 155 576	6.7 %
Bangladesh		4 757 367	5.2 %
	Italy	3 461 910	3.8 %
Cambodia		2 849 223	3.1 %
	Portugal	2 554 514	2.8 %
	Poland	2 542 197	2.8 %
Vietnam		1 635 090	1.8 %
	Germany	1 530 565	1.7 %
	Ukraine	1 302 492	1.4 %
India		879 471	1.0 %
	Sweden	766 610	0.8 %
	Denmark	738 838	
	France	623 906	
Indonesia		479 147	
Philippines		439 148	0.5 %

ANNEX 13: Norway, main imported product lines from Cat. 61 selected population.
Year 2019 - Global imports (worldwide)

CN	DESCRIPTION	Imported value USD
6109 90 90	T-shirts, singlets and other vests, knitted or crocheted, of other textile materials (Excl. cotton, wool or fine animal hair, man-made fibres)	50 963 143
6104 69	Women's or girls' trousers, bib and brace overalls, breeches and shorts, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).	8 322 082
6108 29	Women's or girls 'briefs and panties, of other textile materials (Excl. cotton, man-made fibres)	7 615 985
6110 90	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted, of other textile materials [Excl. wool or fine animal hair, Kashmir (cashmere) goats, cotton, man-made fibres]	7 300 340
6117 10	Shawls, scarves, mufflers, mantillas, veils and the like, knitted or crocheted	5 055 770
6106 90	Women's or girls 'blouses and shirts-blouses, knitted or crocheted, of other textile materials (Excl. cotton, man-made fibres)	4 518 762
6104 49	Women's or girls' dresses, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, artificial fibres, cotton).	3 191 474
6104 59	Women's or girls' skirts and divided skirts, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).	1 545 496
6108 39	Women's or girls 'nightdresses and pyjamas, of other textile materials (Excl. cotton, man-made fibres)	840 549
6116 99	Gloves, mittens and mitts, knitted or crocheted, of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres)	805 085
6104 39	Women's or girls' jackets and blazers, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).	764 991

CN	DESCRIPTION	Imported value USD
6103 39	Men's or boys' jackets and blazers, knitted or crocheted, of other textiles materials (Excl. wool or fine hair animal, synthetic fibres, cotton).	714 996
6107 29	Men's or boys' night shirts and pyjamas, of other textile materials (Excl. cotton, man-made fibres)	337 095
6108 19	Women's or girls 'Slips and petticoats, of other textile materials (Excl. man-made fibres)	131 308
TOTAL	Norwegian total imports (worldwide) of Cat. 61 selected population	92 107 076

ANNEX 14: Norway, main supplying countries for Cat 62 selected population
Year 2019

Supplying countries		(Amounts in USD)	
Asia	Europe	Imports value 2019 - USD	% of total Cat. 61 population
China		22 077 507	45,00 %
	Turkey	5 287 846	10,80 %
India		3 713 793	7,60 %
	Italy	3 452 027	7,00 %
Bangladesh		2 681 811	5,50 %
	Poland	925 700	1,90 %
	Portugal	921 025	1,90 %
	Germany	909 343	1,80 %
	France	819 686	
	Romania	741 388	
	UK	659 163	
	Bulgaria	496 515	
	Lithuania	459 356	
	Morocco(1)	375 521	
Vietnam		323 723	
	(USA)(1)	292 099	
	Sweden	273 800	
Cambodia		180 702	
Philippines		167 107	0,30 %
	Estonia	143 332	
Hong Kong		87 431	

ANNEX 15: Norway, main imported product lines from Cat. 62 selected population.
Year 2019 - Global imports (worldwide) - USD

N.B. codes in bold characters indicate categories of silk items, so type 1 data

CN CODE	Commodity group description	Amount USD
6204 69 (includes 69 01 & 69 09)	Women's or girls' trousers, bib and brace overalls, breeches and shorts of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres)	16 757 270
6204 49	Women's or girls' dresses, not knitted or crocheted, of other textile materials	9 636 702
6204 59	Women's or girls' skirts and divided skirts of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres)	5 353 664
6206 10	Women's or girls' blouses and shirts, not knitted or crocheted, of silk or of silk waste	4 576 407
6205 90	Men's or boys' shirts, of other textile materials (Excl. cotton, man-made fibres)	4 034 761
6204 39	Women's or girls' jackets and blazers of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres)	2 915 075
6214 10	Shawls, scarves, mufflers, mantillas, veils and the like, not knitted or crocheted, of silk or of silk waste	1 294 023
6207 19	Men's or boys' Under pants and briefs, of other textile materials (Excl. cotton)	894 305
6204 19	Women's or girls' suits of other textile materials (Excl. wool or fine animal hair, cotton, synthetic fibres)	769 172
6208 29	Women's or girls' nightdresses and pyjamas, of other textile materials (Excl. cotton, man-made fibres)	286 700
6208 19	Women's or girls' slips and petticoats, of other textile materials (Excl. man-made fibres)	156 788
6215 10	Ties, bow ties and cravats, not knitted or crocheted, of silk or of silk waste	62 799

CN CODE	Commodity group description	Amount USD
6207 29	Men's or boys' night shirts and pyjamas, of other textile materials (Excl. cotton, man-made fibres)	27 925

ANNEX 16. N.B. The text was translated from Chinese, I left it as it was, hence the sometimes-cumbersome formulas aimed at highlighting the sericulture institute that developed the machines. But we are in China and that's how it is.

Modern sericulture machinery and equipment

Sericulture is a labor-intensive industry with many production links. In recent years, as most of the rural laborers go out to work, only the old, the weak, sick and disabled are left to work at home. Many farmers have not raised sericulture, abandoned mulberry and destroyed mulberry. In addition, most domestic sericulture is still operated by traditional manual methods, with extremely low level of mechanization, extensive and low efficiency, which has become a bottleneck restricting the development of sericulture.

Therefore, with the rapid rise of industry in China, the transfer of most of the rural labor force to industry, the rapid increase in urbanization, and the rising labor value, if we do not study integrated sericulture high-quality and high-yield new technology as soon as possible, it will not solve the problem of labor-saving sericulture. Traditional mulberry sericulture is transformed into modern sericulture, and the labor-intensive sericulture industry is bound to face decline.

With the gradual transformation of the sericulture industry from extensive to quality and efficiency, the layout of the sericulture industry has continued to advance from sporadic dispersion to moderate scale operations, and the number of professional management organizations in rural areas has continued to increase. Large-scale and new forms of cocoon production have continued to emerge. It is necessary to improve cocoon production. It accelerates the transformation from traditional mulberry sericulture to modern sericulture and promotes the sustainable development of sericulture.

After years of unremitting efforts, the Institute of Sericulture, Sichuan Academy of Agricultural Sciences and the National Sericulture System Facilities and Machinery Laboratory have developed A series of modern sericulture technology and equipment recommendations, which are as follows:

1. Electric mulberry branch shears

The electric short shears for fruit trees developed by the National Sericulture Industry Technology System Research and Development Center (Sericulture Research Institute of Sichuan Academy of Agricultural Sciences) have successfully developed the electric shears for fruit trees. The electric shears (handheld part) have a mass of 0.94kg and a lithium battery of 1.2kg. The battery is light in weight, and it can work continuously for 4.5h once charged. Aiming at the branch pruning original which is mainly used for grape pruning, its cutting mouth has a small opening angle, it is difficult to cut thick branches, and it has the defect of pushing the branches outwards. The fixed blade and the movable blade are internally ground to change the inner arc. The mulberry strip is changed from sliding outward to sliding inward, which overcomes the original defects, and is suitable for cutting mulberry branches of 10-30mm

2. Shoulder (knapsack) fuel type mulberry tree cutting machine

The National Sericulture Industry Technology System R&D Center Facilities and Machinery Research Office (Sichuan Academy of Agricultural Sciences Sericulture Research Institute) successfully developed a shoulder (backpack) fuel-burning mulberry tree cutting machine, which mainly has the following 4 reforms: ①Increase the transmission The shaft drive shaft is rigid and thick, and the steel sleeve is changed to the bearing to reduce the transmission frictional resistance; ②The number of teeth of the disc blade is changed from the number of fine teeth to the cut; ③The disc blade is additionally equipped with a concentric cutter disc inertia counterweight; ④A section of flexible steel wire shaft is added for easy operation.

3. Pneumatic mulberry branch shears

Sericulture Research Institute of Sichuan Academy of Agricultural Sciences uses rack motion to drive gear rotation to turn linear motion into circular rotation based on the principle of nail guns, and develops a push rod pneumatic mulberry branch shear, which cuts fresh (wet) branches very well. When using the pneumatic branch shears, you can cut branches with a diameter of 3 cm by lightly pressing the air valve. The cuts are neat and will not tear the bark. At the same time, the scissors close quickly and the pruning efficiency is high. It is especially labor-saving and durable. Branch shears and knapsack pneumatic mulberry branch shears have been applied in production, and the technology and products are quite mature.

4. Walk-behind single saw disc fuel cutting machine

The walk-behind fuel cutting machine developed by the National Sericulture Industry Technology System R&D Center Facilities and Machinery Research Office (Sichuan Academy of Agricultural Sciences Research Institute of Sericulture) has successfully developed a small walk-behind micro-tiller as the main body, adding a branch cutting device to achieve One machine which has multiple functions; it mainly adopts driving pulley and wheel to separate the power connection cutting disc, which can be raised and lowered. In this device, the main drive pulley is additionally made of double belt pulleys, and the belt is walked with a small diameter, so as to meet the requirements, the main drive pulley is changed to a double belt pulley, and a large diameter belt cutting mechanism is used to cut. The cutting power mechanism divides the driving pulley and wheel to connect the cutting disc. Increase the branch guide device. And its final assembly and working procedures have been improved. It has been applied and promoted in production.

5. Walking double saw coil feller

The Facilities and Machinery Research Office of the National Sericulture Industry Technology System R&D Center (Sichuan Academy of Agricultural Sciences Sericulture Research Institute) uses the power of the existing croppers and fuel micro-cultivators to change the cutting device to develop a medium-sized walking micro-tillage The machine is the main body, and the branch cutting belt double saw disk movable frame is added to cut two rows of mulberry branches at the same time and realize multiple functions in one machine.

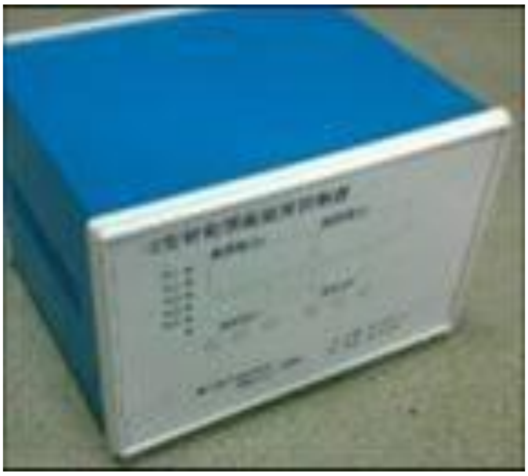
6. Steel ball adjustable arm-twisting double-row cutting machine

The steel ball adjustable arm torsion double-row cutting machine invented by the National Sericulture Industry Technology System R&D Center Facilities and Machinery Research Laboratory (Sichuan Academy of Agricultural Sciences Institute of Sericulture), including: traveling carriage frame; cutting power input device; Cutting device; twisting device.

7. Double lever hyperbolic labor-saving mulberry branch shears

Based on the analysis of the advantages and disadvantages of various cutting tools at home and abroad, the Facility and Machinery Research Office of the National Sericulture Industry Technology System R&D Center (Sichuan Academy of Agricultural Sciences) researched and integrated a double-lever labor-saving mulberry branch hyperbolic large shears: use the anti-sliding cutter head to realize grip cutting; increase the moment arm and double lever labor-saving structure; change the anvil knife handle from straight to inward bending to reduce the opening angle, and the distance between the two handles is shortened, thus making the operation convenient; Horizontal bending is suitable for cutting high and low dry mulberry trees; the handle of the anvil is freed from the waist to hold the branches in the left hand to reduce the labor of collecting and cutting branches. The labor-saving mulberry shears are not only labor-saving, the section is very smooth and flat, and the speed is 6 or 7 times faster than that of a saw. It is more suitable for rural elderly people.

8. Intelligent temperature and humidity controller



The National Sericulture Industry Technology System R&D Center Facilities and Machinery Research Laboratory (Sichuan Academy of Agricultural Sciences Sericulture Research Institute) researched integration based on the analysis of the advantages and disadvantages of domestic and foreign temperature and humidity controllers.

1. The control equipment adopts a general shell. Equipment Using 8-digit digital display, it can display the ambient temperature and humidity at the same time, the button is set to set the indoor temperature and humidity, the equipment can control one line of 220V, rated power 10KW AC equipment (4 each 15A socket hole is used to connect the heater); the equipment can control one line of 220V, AC equipment with a rated power of 400W (a 5A socket hole is used for humidifier).

9.NRJ type heating humidifier

The NRJ heating humidifier developed by the Sichuan Academy of Agricultural Sciences Sericulture Research Institute is mainly designed and manufactured for the use environment and requirements of small silkworm co-cultivation. It has the advantages of long life, convenient installation, simple operation and obvious effect.

10. Chuangyi QSJ-40 labor-saving mulberry cutting machine

The Chuangyi QSJ-40 labor-saving mulberry cutting machine jointly developed by the Sericulture Research Institute of Sichuan Academy of Agricultural Sciences and Nanchong Silkworm Tool Factory solves the problem of the large amount of labor in cutting mulberry, high leaf cutting requirements, and leaf cutting in the breeding of small silkworms.

Long time and other issues, the machine's cutting capacity: 40-60kg/h, rated voltage: 220V, rated power: 370W, external dimensions: 43cm35cm×66cm, weight: 30kg. It has the characteristics of fast leaf cutting, neat mulberry leaf cuts, uniform leaf size, etc., and is extremely convenient to use.

11. Multifunctional mobile silkworm house

The Sericulture Research Institute of Sichuan Academy of Agricultural Sciences has launched a multifunctional mobile silkworm house with specifications (length×width×side height): 4.95×4.15×1.95, the middle height is 3.15 meters, and the labor-saving silkworm platform can raise 2 large silkworms.

The house is made of special materials. It has the advantages of convenient installation and disassembly, rain and sun protection, heat preservation and moisture retention, ventilation, and easy disinfection. It is suitable for building in front of the house and on the ground for small silkworm breeding and outdoor breeding of large silkworms. .

12. Simple labor-saving activities

The simple labor-saving activity silkworm platform developed by the Sichuan Academy of Agricultural Sciences Sericulture Research Institute has a simple structure, can move the height of the silkworm platform freely and easily, and is convenient to lift.

The multi-layer type increases the utilization rate several times and changes the domestic and foreign bamboo-wood multi-layer silkworm racks. The traditional method of using bamboo woven silkworm foil for each layer reduces the floor space by more than half and saves more than 60% of the labor for sericulture; the multi-functional plastic woven net replaces the silkworm platform and reduces the investment, and is not corroded by the bleaching powder used for disinfection. It is easy to disinfect and durable. The period is increased by more than 5 times.

13. Intelligent automatic circulation large juvenile silkworm rearing machine

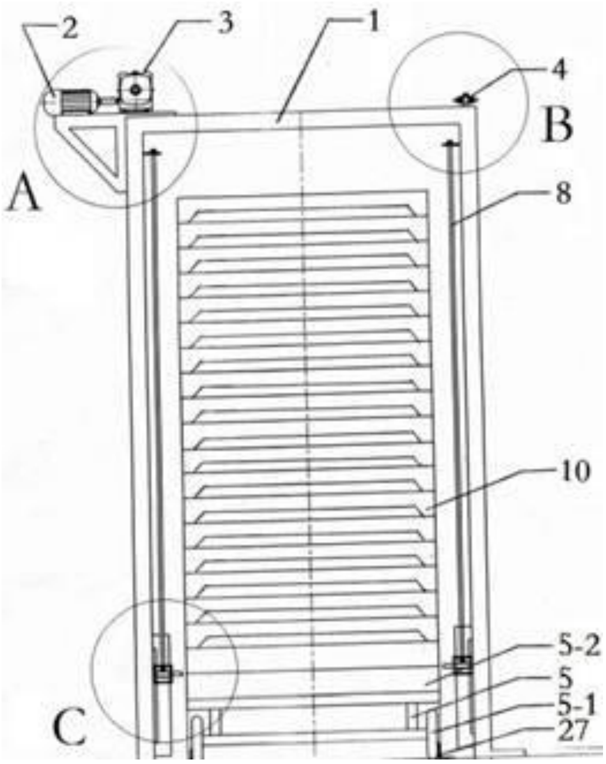
The National Sericulture Industry Technology System Research and Development Center Facilities and Machinery Research Office (Sichuan Academy of Agricultural Sciences Sericulture Research Institute) successfully developed an intelligent automatic circulation large-scale juvenile silkworm rearing machine.

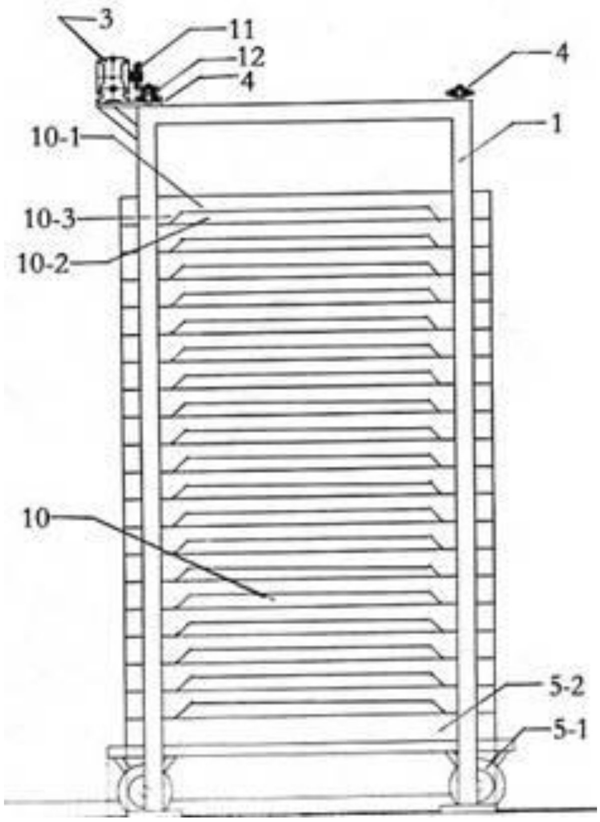
The environmental conditions of the sericulture, of the intelligent automatic young silkworm rearing machine are intelligently adjusted by the single-chip microcomputer according to the needs of the growth and development of the silkworms, and the latest ultrasonic vibration is used for moisturizing, to create the best conditions for the growth of young silkworms;

Grade frequency conversion speed regulation, and automatic control by the operating table, the operating speed is determined according to the needs of various operating procedures; the whole machine adopts a compact structure of inner and outer rings to increase the amount of silkworm rearing per unit area; use a plastic box that is convenient for cleaning and disinfection as silkworm foil, and the chain drive the displacement, eliminating the need for manual end foil and position adjustment.

The whole machine adopts a closed-loop double helix, the inner layer (left ring) circulates from the bottom layer to the top layer, and turns into the outer ring (right ring); the outer layer (right ring) The ring) circulates from the top layer to the bottom layer, and then turns into the inner ring (left ring); the outer ring (right ring) turns into the inner ring (left ring) and the bottom layer extends to the outside of the ring to extract an operating layer section. A disinfection dusting machine, an automatic mulberry feeder and a sand removal device platform are set above the operation layer to realize automatic feeding.

14. Intelligent control lifting and dismantling automatic sericulture machine





The National Sericulture Industry Technology System R&D Center Facilities and Machinery Research Office (Sichuan Academy of Agricultural Sciences Institute of Sericulture) recently successfully developed an intelligently controlled lifting and demounting automatic sericulture machine

15. The mature silkworm automatically collects the supporting materials for the upper cluster: the upper cluster auxiliary agent and the mature silkworm collection membrane

The Sericulture Research Institute of Sichuan Academy of Agricultural Sciences changed the manual collection of mature silkworms to automatic and fast collection, which saves labor and is suitable for various cluster tools.

16. Repairing the cocoon expelling machine for the under-regular grid cluster (the grid cluster automatic cocoon picking machine)

The National Sericulture Industry Technology System R&D Center Facilities and Machinery Research Office (Sichuan Academy of Agricultural Sciences Sericulture Research Institute) under-regulated grid cluster repairing cocoon expeller machine obtained utility model patent (ZL201420389877.x), invention patent (201410336637.8), adopting method The cocoons of the camp are white, unwind well, and have a high silk yield, but the camp cocoons need to be picked from each hole.

17. Disc Cocoon Cutting Machine

The new type of cocoon cutting machine successfully developed by the Sericulture Research Institute of Sichuan Academy of Agricultural Sciences and Sichuan Sericulture Management Station has obtained a patent (patent number: ZL98228782.8; certificate number: 53781).

The lever-type spring is used to automatically loosen the pressure fixture, and the disc rotates (vertical and clockwise) to send the cocoon.

The cocoon is cut at high speed when it is close to the vertical direction. At this time, the pupa body is under the cutter due to gravity to ensure that the pupa body and cocoon are not cut.

The shell cover is collected at the cutting knife, and the pupa body is rotated to the lower part to fall into the pupa body separation hopper by gravity, and then the cocoon shell is knocked out by the shell eliminator when the pupa body is rotated to 40° across the vertical line, thereby realizing automatic cutting, shell cover and cocoon The shell and pupa are separated and collected in a separate hopper. It avoids the pupa from transverse cutting and overcomes the vibration-type pupa shell separation and shock damage to the pupa, thereby ensuring that the pupa is not injured.

18. Ultra-high-speed automatic sorting machine for male and female pupae

The third batch of development projects of the National Cocoon and Silk Development Venture Fund undertaken by the Sericulture Research Institute of Sichuan Academy of Agricultural Sciences and Sichuan Sericulture Management Station has successfully developed an ultra-high-speed automatic male and female pupal sorting machine, which uses the physiological characteristics of male and female pupae to segment. The automatic sorting can be adjusted at will.

It is suitable for different species and different seasons to sort female and male silkworm pupae; from the beginning of pupation to the day before the moth emergence, the whole pupal period is applicable, and the sorting speed is more than 50 times that of humans. The accuracy rate of the female and male pupae is guaranteed to be over 99.5%, without any harm to the pupae.

19. Multi-purpose plastic woven net for quick moth lifting

The Sericulture Research Institute of Sichuan Academy of Agricultural Sciences has successfully developed a multi-purpose plastic woven net for rapid moth lifting.

The plastic woven silkworm net is laid on the pupa foil the day before the moth is sent. After the net, the moth will drill the plastic woven silkworm mesh.

Attached to the plastic woven silkworm net surface, when catching moths, only need to lift the plastic woven silkworm net and shake it gently, and the silkworm moths are collected together.

20. Fresh cocoon layer moisture content tester

The mulberry silkworm fresh cocoon layer moisture content tester was successfully developed by the Sericulture Research Institute of Sichuan Academy of Agricultural Sciences.

It is mainly used for the non-destructive and rapid measurement of the fresh cocoon layer moisture during the purchase of fresh cocoons, and controls the sale of wet cocoons.

Fresh shell volume × (1-cocoon layer moisture content) = dry shell volume to calculate the dry shell volume (reduce the drying of the cocoon shell, weigh the dry shell and other processes, greatly shorten the detection time and save energy).

21. Intelligent digital display cocoon moisture content tester

Sericulture Research Institute of Sichuan Academy of Agricultural Sciences, Sichuan Sericulture Management Station.

Based on the successful development of the pointer-type fresh cocoon layer moisture content measuring instrument with the Power Research Institute of Sichuan University, and applying modern computer technology, some pricing indicators related to the purchase of fresh cocoons are simultaneously displayed on the same meter.

22. Cocoon body perspective instrument

Sericulture Research Institute of Sichuan Academy of Agricultural Sciences adopts photo-electric technology to realize the see-through of the cocoon body through the processing of penetration, dark field, reflection, etc., without dissecting the cocoon.

It allows to detect whether the cocoon cavity is good, pupa or hairy foot, and the dead cocoon is stained with integrated circuits. Delay automatic control. It can detect 25 or 11 cocoons at the same time (Sichuan standard DB51/281-1998 26.1 stipulates that only 11 cocoons are checked), the accuracy rate is 98%.

23. Intelligent evaluation instrument

The intelligent cocoon evaluation instrument was successfully developed by the Institute of Sericulture, Sichuan Academy of Agricultural Sciences.

It combines electronic weighing with the conductivity method to determine the moisture content, and can complete all the weighing of the dry shell weight standard rating inspection (weighing 250g large sample, upper Car cocoon, good cocoon weight, 50g sample, 50g cocoon layer content), cocoon layer moisture content measurement, intelligent calculation of loading rate, uniformity, dry shell content, and intelligent analysis and determination according to the dry shell content classification standard. It displays the basic cocoon level, loading rate, uniformity, moisture content correction level and comprehensive level determined by the dry hull content.

24. Quick test reeling inspection machine

It was successfully developed by the Sericulture Research Institute of Sichuan Academy of Agricultural Sciences.

During the selection and breeding of new varieties, it is necessary to investigate and compare the traits of the selected materials. There are 7 of the 9 national regulations for the examination and approval of new silkworm varieties. Rate, cocoon silk length, unwinding silk length, unwinding rate, fineness, mean square deviation of fineness, and clarity) are provided by the cocoon silk quality test, and the raw silk grade indicators such as cohesive strength, strong elongation, cutting, and fluff are not listed.

Entered into the variety certification project, but it has a greater impact on fabrics, especially high-speed looms and high-end silks have higher requirements for the above.

In order to improve the quality of cocoon silk, selection and breeding, variety comparison, and regional trials from the source for cocoon silk quality testing, the rapid test reeling detection machine is suitable for breeding units, the work comparison of the competent department of sericulture, and the regional test configuration for rapid testing of cocoon silk quality.

25. Simple combined reeling and trial reeling testing equipment

It is suitable for process design of automatic silk reeling plant, trial reeling with cocoon and household reeling in special areas.

There are various types of simple reeling machines for fine silk (20/22 denier) and thick silk, such as single 20 threads. Silk reeling machine, double 20-thread reeling machine, manual reeling machine, rewinding machine and other types are available for various small and family reeling thick and thin silk options, especially suitable for cocoon producing countries in Southeast Asia and emerging African silkworms. District silk reeling was successfully developed by the Sericulture Research Institute of Sichuan Academy of Agricultural Sciences.

26. Intelligent control multi-purpose blackboard machine, intelligent control fineness machine

It was successfully developed by the Sericulture Research Institute of Sichuan Academy of Agricultural Sciences. It uses electronic automatic counting technology and intelligent regulation to improve the accuracy of cleanliness, and uniformity, which is conducive to electronic detection of cleanliness and uniformity; and a blackboard machine is added.

The function of detecting the size, the maximum deviation of the size, the mean square error of the size and the silk length.

27. Portable rapid test reeling equipment

Successfully developed by the Sericulture Research Institute of Sichuan Academy of Agricultural Sciences, the equipment that is convenient for purchasing cocoons in different places and testing and reeling and it is easy to carry with you, are: scales, knives, hair dryers, plastic lunch boxes, electric heating tubes, and portable miniature testers used in Chinese medicine stores. Reeling machine.

28. Special single cocoon silk inspection machine for silkworm breed selection

It was successfully developed by the National Sericulture Industry Technology System Research and Development Center Facilities and Machinery Research Office (Sichuan Academy of Agricultural Sciences Sericulture Research Institute).

After the national silk reeling basically realizes the fixed size automatic reeling, the raw silk grade index is reflected from different levels.

29. Automatic circulating hot air cocoon drying machine

After more than 30 years of improvement, the Sericulture Research Institute of Sichuan Academy of Agricultural Sciences and Nanchong Silkworm Factory have formed energy-saving and environmentally-friendly automatic circulating hot-air cocoon drying machines, focusing on the transformation of the hot-air stove type.

30. Diffusion type powder biomass fuel, coal dual-purpose hot air stove and series of dryers

The dryer jointly developed by Sichuan Sericulture Research Institute and Nanchong Sericulture Plant uses straw, firewood, twigs, processed waste shavings, wood chips, saw powder, chaff, straw, and chaff as fuel.

The heat exchanger is converted into pure hot air for drying materials. It adopts the combination of mechanical and wind power to continuously feed fuel, intelligently regulate the feeding amount and temperature; the dust collector adopts a special design, which not only removes dust but also recovers dust as fertilizer, and realizes energy saving and environmental protection recycling. For a long time, hot blast stoves have used coal and gas as fuels, but due to the high cost of these fuels, the processed products also increase the cost.

31. Simple combined small dryer

Sericulture Research Institute of Sichuan Academy of Agricultural Sciences undertakes the research project of “Automated Cocoon Drying Technology and Equipment” for national scientific and technological research during the Tenth Five-Year Plan period, and has developed automatic hot-air circulation cocoon drying machines.

At the same time, according to the development trend of sericulture industrialization, rural land transfers, the mulberry is planted into slices and the silkworms are raised on a large scale. The number of households raising more than ten silkworms and dozens of silkworms, is increasing. The fresh cocoons will be dried and sold by themselves. Small drying equipment has been developed to dry 300-600 kg of silkworm cocoons per day. It can also be used for drying of agricultural and sideline products such as grains, vegetables, fruits and their processed products.

32. QCF50 garden wood and branch dual purpose grinder

It was successfully developed by the National Sericulture Industry Technology System Research and Development Center Facilities and Machinery Research Office (Sichuan Academy of Agricultural Sciences Sericulture Research Institute).

This machine can effectively prevent the mulberry bark from wrapping around the rotating shaft. The structure is compact and firm. The power can be equipped with either a motor or a diesel engine. The maintenance and adjustment are simple and convenient, and the production efficiency is high. It is suitable for cutting mulberry stalks and other plant branches, and the shredded materials can be used as the base material for edible fungus cultivation bag after processing. After testing, the crushing amount reached 1089kg/hr for mulberry branches and 1525kg/hr for trunks.

33. Small-scale curing and sterilization machine

The small-scale sterilization and sterilization machine successfully developed by the National Sericulture Industry Technology System R&D Center Facilities and Machinery Laboratory (Sichuan Academy of Agricultural Sciences Institute of Sericulture) is mainly used for the sterilization of mulberry leaves and the disinfection of silkworm excrement, which can maintain mulberry well.

The natural color of the leaves can achieve the purpose of removing the fishy smell; after the silkworm excrement is sterilized by a high temperature sterilizer, all the pathogenic bacteria in it are killed, so that the silkworm excrement can be directly used as fertilizer. This machine has the characteristics of saving time and labour, and has been popularized and applied in production.

34. Mulberry leaf and mulberry air energy dryer

The Sericulture Research Institute of Sichuan Academy of Agricultural Sciences and Nanchong Sericulture Factory have jointly developed a mulberry leaf and mulberry air dryer.

The machine is designed according to the requirements of the mulberry leaf and mulberry drying process and uses pure hot air to quickly ensure the quality of the mulberry leaf and mulberry. Drying can preserve the inherent quality and colour of mulberry to the greatest extent, promote the full conversion of sugar, and effectively improve its taste.

35. Mulberry Leaf Crusher

The mulberry leaf pulverizer successfully developed by the Sericulture Research Institute of Sichuan Academy of Agricultural Sciences can pulverize mulberry leaves to 120-200 mesh and can be directly used as feed additives and food additives. The mulberry leaves processed by this machine have higher utilization and palatability, and the fibrous tissue of the mulberry leaves is not destroyed, ensuring that its nutrients are not lost. The machine is compact in structure, easy to operate, safe and reliable.

ANNEX 17 – QUESTIONNAIRE

Q1 - Which of the following 3 fibres did you know had applications in the textile industry?

Abaca O   Banana O   Pineapple O

Q2 - Have you ever worked with one or more of these 3 fibres, if so which ones, for what type of products and which were the supplier country or countries?

Abaca	Yes / No	Product(s): Origin:
Banana	Yes / No	Product(s): Origin:
Pineapple	Yes / No	Product(s): Origin:

Q3 - Is your company proposing silk items ? Yes / No

Q4 - If yes, have you ever imported silk (yarns, fabrics, garments, accessories) from the Philippines ? Yes / No

Q5 - How would you characterize the position of the Philippines in the global trade of fashion clothing and accessories?

Leading position: O
Important position: O
Average position: O
Marginal position: O
Very marginal position: O

Q6 - What, in order of preference, would be your criteria for selecting a new fibre ?

. Sustainability (eco-friendly, environmental compliance etc.) Nbr. ____
. Price Nbr. ____
. Quality and properties of the yarns: hand feel, softness, appearance, colour fastness, tensile strength, resistance to pilling, ability to be woven or knitted, dyeing affinity, richness of colour card, ease of maintenance etc. Nbr. ____
. Attractive commercial conditions: e.g. quick delivery time, flexible MoQ, stock service on some basic colors, ability to develop lab-dips quickly etc. Nbr. ____