



Co-funded by
the European Union



GIF – Green Innovation in the Fashion Industry

Result Title 1: GIF Competence Framework

Task 1.3: Selection of skills change and development and sector skills transformation map

TEMPLATE FOR T1.3 CONSOLIDATED REPORT



CONTENTS

1. INTRODUCTION	3
2. METHODOLOGY	3
3. INSIGHTS FROM PARTNERS' NATIONAL DESK RESEARCHES (from T1.1 and T1.2)	4
4. NATIONAL RESULTS FROM INTERVIEWS	5
4.1. ITALY	5
4.2. GERMANY	11
4.3. GREECE	14
4.4. ROMANIA	18
4.5. SPAIN	21
5. CONCLUSIONS and RECOMMENDATIONS	26



1. INTRODUCTION

The industrial ecosystem, global sustainable business trends, and consumer-driven economy put pressure on industries to become more sustainable, innovative, and agile: consumers, especially generation Z, are more eco-aware and willing to pay for eco-friendly products.

The general objective of GIF - Green Innovation in the Fashion industry management is raising awareness of the managers/workers of SME's Fashion industry about the development of industry 4.0 together with the European Green New Deal Directive.

GIF - Green Innovation in the Fashion industry management wants to increase this awareness in SMEs and drive the future e-learning practices addressed to the development of an environmentally friendly Textile Industry.

The GIF project will create online training courses and a training kit to help people develop novel approaches and ideas for a "greener" textile industry. Through e-learning courses, best practices, creative green initiatives, multiplier events, and exchanges of knowledge and expertise in the relevant sector, GIF will produce new ideas and training for stakeholders to learn how to minimize their emissions and waste.

2. METHODOLOGY

In order to select the skills change and develop the sector skills transformation map, were needed the following steps to be taken:

- identification and analysis of major skill changes for selected occupations in the fashion sector and the most relevant scenarios.
- survey and interviews with sector professionals, training providers and other stakeholders aimed at identifying the skills that will be essential to adapt the industrial processes design to meet the needs of the circular economy;
- definition of the future professional profiles in the sector;
- identification of the theoretical and practical knowledge required by the identified occupations.

The result of this process will be a "skills transformation map", which will present an accurate matching of people's skills with the requirements and demands of the circular economy in the fashion industry, identifying the key behavioral, technical, and functional competencies needed in the industry and defining the transition phase and the impact of the change.

In this report are presented the main findings of the survey and interviews held in all partner countries. The survey and interviews were conducted with sector professionals, training providers and other stakeholders aimed at identifying the skills that will be essential to adapt the industrial processes design to meet the needs of the circular economy.



3. INSIGHTS FROM PARTNERS' NATIONAL DESK RESEARCHES (from T1.1 and T1.2)

The project collaboration began execution of the first work package: the GIF competence framework. The national findings were presented in a state-of-the-art report based on data from five project partner countries: Italy, Germany, Spain, Greece, and Romania. The goal of the research was to create a knowledge base map of existing educational offerings, and assess the present status of competences in the sustainable fashion and textile industry of each country, in order to guarantee that learners acquire relevant skills, competencies, and information on sustainable fashion and textile practices following the GIF project results. This result will provide to SMEs Managers/Leaders and the trainer community a clear framework for understanding and assessing training needs and for designing further programs and continuous professional development strategies.

On the first task of the work package “Task 1.1. New scenarios in the fashion sector” were highlighted the trends of the international fashion system and the textile system. Each partner identified their own scenario, based on the data highlighted by them, they focused as described in the approved project on the sustainability factors of the market.

On the second task “Task 1.2 The State-of-the-Art analysis” was performed an extensive research of the academic and vocational education opportunities, financing opportunities and good practices in the fashion and textile market in each partner country. The main findings were that there are few opportunities for a fully-rounded academic education in the field of sustainable fashion and textiles as well as few opportunities in the job market following such studies, among the countries analyzed, Italy, Romania and Greece have better VET offers, while Spain and Germany offer better academic opportunities in the field of sustainable fashion and textiles. While there is high demand for experts in sustainable fashion and textile from the industry, a gap between the skill level required by the employers and the skill levels of the potential employees leaves a high number of jobs with few qualified people to perform them.

Also, there is an existing market for sustainable fashion and textiles across every country, which shows that there is a demand and a target group in each country that are interested in buying and learning more about sustainable fashion, as well as some experienced businesses and creators with different innovative concepts.

In addition, there are available investment funds in each country that can be accessed by entrepreneurs that want to open a sustainable fashion business and there is there is a big need for accessible through education in the field of sustainable fashion and textiles, that addresses a broader spectrum of learning, combines practice with theory and the industry, and creates skilled professionals that can respond to the demands of the current job market.



4. NATIONAL RESULTS FROM INTERVIEWS

4.1. ITALY

a) General information about the profile of the interviewees

Almost all of the interviewees (six in total) from Italy have a profile that is related with sustainability in the fashion industry and have an experience in the field between 14 and 54 years. The companies where these interviewees are occupied are mostly in education and training, VET, fashion and textiles and sustainability consultancy, while their role in each sector is related either to sustainability and technical consultancy or executive seniors in the field of administration.

b) The fashion sector in the future (scenario)

Environmental sustainability and **circular economy model** along with digitisation represent the major future trends according to the Italian interviewees. Also, the aim of finding new ways to connect with their customers: fashion companies are reinventing themselves, meaning that given that customers themselves are asking for more sustainability and as the industry faces a long-overdue reckoning with its environmental and social impact, all companies working in the industry need to adapt to this customers' request and focus more on sustainability.

However, the fashion and textiles sector produces a very significant part of the global, EU and national GDP because the profitability of this sector is very high. Therefore, nobody would agree to change their business model if the new business model proposed does not have the same profitability as the traditional ones: this would be the real challenge in the future. Therefore, all companies should **adopt a more sustainable business model while keeping the same significant profitability as the traditional ones**. In addition, circularity in fashion is a viable alternative to replace the take-make-waste model with a recover-recycle-reuse model. This generates added value, because it turns waste into materials that can be reinjected into the value chain. The fashion world can be a trend-setter not just on the catwalks, but in the fight against climate change too. The circular economy will reshape the apparel industry. In the circular economy, products are designed and sold in such a way that they are used for longer and can maintain their value for longer.

Therefore, considering that these emerging categories of consumers demand a more personalized, digital, multi-channel relationship with their favorite brands, the business models should foresee the proper management of the traditional and digital channels. In addition, to reach younger generations, brands should adopt the following strategies:



- **New legal framework** at global; EU and national level. The existing legal framework is not enough yet and it should be improved in order to encourage F&T businesses to quickly adopt sustainable solutions
- Promoting **creativity** in order to find new feasible sustainable solutions
- Increase **traceability and transparency**, thus also promoting a more conscious and sustainable customer behavior and responsibility
- Launch and revamp casual product lines
- Invest in gaming partnerships and NFTs: metaverse will not replace the real world but it will go hand in hand with the real world.
- Focus on Health and Well-Being
- Rental Service and Second-Hand Fashion for a Lower Carbon Footprint
- Reducing Resource Consumption with a Circular Economy
- Future Fashion: Reduction of the CO2 Footprint
- Personalization: Specialists Are in Demand
- Digitized Fashion: From Digital Influencers to the Metaverse
- Live Shopping: Digital Shopping Should Become an Event
- Training and sensitiveness of direction to circularity

c) The future professional profiles in the fashion sector

Professional profiles that will represent the future of fashion according to the Italian interviewees:

- Professionals/ Fashion designers with a more hybrid background- merge technical and scientific competencies with a more humanistic approach.
- **Fashion Sustainability Managers** - follow from the beginning until the end of the business process – the compliance with environmental regulations. This professional profile will be assisted also by **experts in raw materials and production cycles** in order to identify the ways in which the industrial processes could be adapted to achieve the objectives of a Circular economy. This change process should be aimed at improving environmental impact, keeping producing wealth at the same time.
- Consultants/ Direct sales managers- that support the customer during their purchasing/ shopping experience and even after the purchase.
- 3D Artist - to create computer-generated images, in perfect balance between technical and creative work: it's no coincidence that, in addition to a solid background in graphics, an art director's eye is required
- Virtual Showroom Designers / Virtual Visual Merchandisers – for designing an ideal, yet extremely real environment that can be simpler, more convenient and quicker to use for the customer, while at the same time managing to facilitate business communication. The graphic preparation must be completed with a strong aesthetic sense and a good dose of applied psychology.



- Fashion lawyers - Without any doubt, that of the "fashion lawyer" is one of the most fascinating new professional figures. The reason for its rise is to be found in the constant growth of cases of plagiarism, counterfeiting or unfair competition, but also of cultural appropriation and collaborations that require to be regulated at a legal level.
- Product managers/Sustainability managers – to follow the entire production process of a collection from the beginning, making sure that everything respects environmental regulations with the aim of reducing (or eliminating) any kind of pollution or waste.
- Corporate Responsibility Manager - to keep up with the times in order to avoid the situation of cultural appropriation and have a social representation of the brand. How many times has it happened that a brand has had to apologize for being unfair or superficial towards a minority? In order to keep promises and improve corporate communication, the figure of the corporate responsibility expert plays a key role.
- **Data Editor** - able to understand the market's needs, analyze customer behavior using also big data analysis with a view to setting the stage for future fashion trends. These objectives could be achieved also with the support of an **Artificial Intelligence ("AI") Expert** in order to create A.I. algorithms to detect such customer behavior.
- A **Metaverse Expert** - will be able to manage this change considering the increased attention to NFT and virtual store world. In fact, consumers spend more time online increasing the attention on e-commerce and virtual showrooms.
- Circularity managers or officers - will prepare the path towards a real sustainable facility

d) Identification of the technical skills essential to the needs of the circular economy.
Theoretical and practical knowledge required by the identified occupation.

The increasing importance of the circular economy will have a significant impact on the shape of jobs and competencies. They include transversal skills, such as:

- problem solving

and also technical skills in higher level such as:

- digital and green literacy
- entrepreneurial skills and STEM (science, technology, engineering and mathematics) competencies for green jobs in emerging sectors.
- legal framework and regulation
- design for disassembly and fibre processing and resource efficiency topics such as zero-waste pattern design and new technologies in dyeing and printing.
- sustainable production / Know how the blockchain works, product life-cycle
- product repair and maintenance
- innovating the product design process to improve longevity
- supply chain



- e) Transversal skills and key behavioural competencies needed in the fashion industry to meet the needs of the circular economy

The professional of the future excels in the combination of the following skills:

- Creativity in imagining new scenarios and new solutions
- Ability to work in a transdisciplinary way
- Critical evaluation of the environmental, social and economic impacts
- Long term vision, forward thinking, the functional competency – to anticipate all the challenges that could emerge during this transformation and resolve the related conflicts.
- How to effectively communicate and relate to the customer
- Focus on the final customer rather than on technical competencies related to “how to sell”
- Willingness to take responsibility across all sectors of society and the essential knowledge to enable the change
- Systems thinking
- Management & entrepreneurship and the social competency
- Strong interpersonal skills, investigative, pragmatic, systematic, empathetic, full of initiatives, driven, ambitious and persistent
- Strong leadership and dynamic capabilities in order to transfer the key concepts and impacts of Circular economy to the stakeholders and management teams with a different background and located in different areas.
- Flexibility, versatility, with strong communication skills, inclusive, innovative, environmentally aware and open-minded

- f) Training trends in the fashion and sustainability industries

- “Sustainable Design” course at the Rome University of Fine Arts (RUFA) is a pioneer. Indeed, it is the first fashion course in Italy which focuses entirely on sustainability which lasts 3 years. In this course are trying to merge theoretical knowledge and practical competencies and creative phase and technical phase. Through this approach, they are able to provide students with a more complete overview of the whole production process, not focusing only on a single phase.
- Focus on textiles: -Understand which textiles/fibers are the most sustainable - Use of innovative textiles (that can also be recovered from waste materials) and their manufacturing process, which makes use of innovative technologies - focus on how to adapt the design of certain products to the use of innovative textiles



- Brand strategy
- Business development
- Fashion Business Communication & Media;
- Fashion Business Digital Communication & Media;
- Fashion Design & Marketing;
- Fashion Styling & Visual Merchandising;
- Fashion Business;
- Fashion Styling & Creative Direction;
- Fashion Business & Buying;
- Fashion Design;
- Fashion Design & Accessories
- sustainable garment research
- environmental legislation specific to water, waste, logistics
- innovation, digital transformation of process

For the universities and higher education institutions:

- Establish a universal Circular Economy Competency framework for all engineers & STEM professionals. While it is crucial to educate specialists in, for example, life cycle assessment and materials recycling, it is even more important to have a greater CE focus on the basic STEM and engineering programmes.
- Integrate the Circular Economy Competency framework in all degree programmes and as learning goals of courses. It is essential that a circular mindset is introduced to create fertile soil for adopting and implementing CE skills and a fundamental paradigm shift. The current engineering practices and analytical frameworks drive a linear economy and should be replaced by a circular approach.
- Educate the educators. There should be opportunities for educators at all levels to acquire competencies in teaching circularity, such as circular design and mindset.

For the employers:

- Create spaces for upskilling. By creating spaces for upskilling, employers could increase shared understanding of current ecological constraints, circular economy principles, and business models amongst specialists in various domains involved in innovation development.
- Create agile ways to train graduate engineers and STEM professionals. It is recommended to build new and expand existing collaborations between the private sector, CE STEM professionals, and universities to harness the state-of-the-art knowledge on circular economy practices. Established programmes should be further supported to offer flexible re-education through more short courses and study modules explicitly developed for lifelong learning opportunities on CE.



- Promote STEM professionals as leaders in the circular economy. There is a need to step up the awareness-raising of the opportunities for young people to make an impact towards a more sustainable future through STEM professions.
- The current fashion programs bring the discourse around responsible fashion into the spotlight. The new courses take a transdisciplinary approach to integral ecology in the creative design of the entire fashion supply chain and aim to provide solid technical skills, while stimulating a critical reflection on cultural and business models of the fashion system, with a view to sustainability and circularity.

In general, these new programs include:

- sustainable practices, such as responsible innovation and circularity, to a fashion organization's business model.
- platforms and technologies that facilitate sustainability in fashion.
- opportunities, challenges, and trade-offs associated with implementing circular practices in an organization.
- specific leadership skills in order to face the challenging transition of the business model from linear to circular.

It is mentioned among interviewees that in Italy, the realities that allow Italians to study in depth the dynamics of fashion are more and more numerous. From economic and managerial notions to creative design and development of lateral thinking, the institutes encompass many parameters. Studying fashion in Italy is a fast-track to the high-fashion industry. The most of the popular fashion universities in Italy are putting in place long-lasting partnerships and deeply-rooted bonds with luxury fashion houses and famous designer labels.

The overall good performance of the country on eco-innovation reflects the efforts made to develop and implement policies dedicated to eco-innovation and circular economy. Circular economy and eco-innovation developments in Italy largely relate to eco-labelling, waste management, bioeconomy and green industry. In fact, Italy has one of the highest levels of eco-labels and EMAS in the EU.



4.2. GERMANY

a) General information about the profile of the interviewees

The profile of the German interviewees (two in total) is professionals in education and more specifically in fashion education with many years of experience in the field of product and retail management.

b) The fashion sector in the future (scenario)

One of the big trends according to German participants is Back to the Roots: Example: 140Fahrenheit GmbH has recently started working with the large company C&A (1,400 stores in 18 countries). 140Fahrenheit revolutionizes the conventional way of denim finishing by using the latest laser, washing and water recycling technology in the heart of Europe at its site in Mönchengladbach/Germany. Processes that were once outsourced are coming back. Also, the advantage of "bringing back" is that there is significantly less dependence on fragile logistics chains. Large companies in particular repeatedly lose flexibility due to large-scale shipping. The problem with "bringing them back" is that Germany has lost a lot of know-how as a result of outsourcing. There are hardly any skilled sewing workers left in the country.

One of the interviewees states that circular economy is becoming increasingly important for the fashion industry as value behavior of young people is changing toward sustainability, while particular attention should be paid to the supply chain. Also, DIY trend continues to build and solidify and brand ambassadors are becoming increasingly important for labels

Another interviewee states that digitization and virtual reality/augmented reality will play a very important role in the fashion industry. This also influences important major trends in the area of sustainability. Trends in Germany for the future include:

- avatars via VR technology shortening the sampling process in the future. The prototype only has to be actually produced in the very last step of the sampling process. All steps before that can be represented virtually.
- Transparent value chains are becoming more and more important. However, this trend often remains at the level of the brand image. In sales, the focus is often even more on profit.
- Inclusion of buyers, e.g., via influencers. They are already increasingly helping to design the product during the design process and then distribute it via their own community. In other words, they act not only as brand ambassadors but also as designers.



- Data-driven marketing is and will become increasingly important. The behavior of (potential) buyers on the Internet is recorded and analyzed in detail. Advertising is increasingly customized to the target group.

Best case scenario:

- The fashion industry is working more closely and on a long-term basis with suppliers, thereby enabling the long-term development and expansion of the economy in the suppliers' countries. Germany must take more responsibility for its suppliers.
- Human rights and working conditions should not only be observed at the 1st but also at the 2nd suppliers.
- Less quantity more quality

c) The future professional profiles in the fashion sector

In addition to the traditional job profiles, social media specialists, brand specialists and sustainable supply chain managers are becoming increasingly important.

It would be desirable to have "development workers" at the suppliers themselves, who live locally and act as honest intermediaries between suppliers and fashion companies.

Also, persons who, as a staff position in the company, have the entire sustainability of the company in view (sustainability managers as all-rounders).

d) Identification of the technical skills essential to the needs of the circular economy. Theoretical and practical knowledge required by the identified occupation.

According to the German responses, a real-time online platform on which all suppliers and the fashion company itself could communicate would be desirable. Important topics such as the employees' level of debt, the expected cotton harvest, an anonymous complaints system, etc. could be placed here.

- Knowledge about biodegradable raw materials.
- Know how/ ideas on how to deal with clothing that is no longer needed
- Industry approaches, that companies join forces and e.g. collect all grey sweaters that are no longer needed and process them further.
- Knowledge of sustainability labels is becoming increasingly important
- Know how on pesticides and chemical compositions
- Knowledge about work standards



- e) Transversal skills and key behavioral competencies needed in the fashion industry to meet the needs of the circular economy

The German interviewees responded that important transversal skills are:

- Teamwork with appreciation of the entire team
 - Ethical sustainability
 - Knowledge of sustainability seals/labels
 - Overview of value chains
 - Learning about chemical use
 - Knowledge of CO2 development
 - Work safety
 - Know how about alternative solutions e.g., refurbishing old clothes, rental models etc.
 - Awareness of everyone in the company about the overall context of sustainability
- f) Training trends in the fashion and sustainability industries
- Augmented Reality - 3D in the cutting class
 - Forcing team building
 - Understanding customer needs
 - Critical thinking skills
 - Know how on data protection and correct data processing
 - Omnichannel business models with maximum customer service (e.g., return online purchases in the store)
 - Social media is becoming a bigger part of the fashion job
 - Craft apprenticeships are unfortunately dying out. Focus in Germany increasingly on academic qualifications for the fashion industry
 - The topic of sustainability should already be integrated into the education in universities.
 - An idea could be the obligatory participation in an ecological year (similar to the free social year).
 - An internship in the field of sustainability could be integrated in schools.



4.3. GREECE

a) General information about the profile of the interviewees

Both interviewees from Greece were professional from IVET and VET DIMITRA. One was certified trainer in Fashion & Design Training Course, while the second one General Manager. They have more than 25 years of experience in education. The Sector that the company operates is in Education & Training. DIMITRA Educational Organisation has provided, for more than 25 years, high quality Initial and Continuing Vocational Education and Training (VET) services to the entire country, training over 3.000 people per year.

b) The fashion sector in the future (scenario)

Alternative materials, circular business models, efficient recycling and digital design can go a long way in making the garments produced by the fashion industry more sustainable according to the Greek interviewees. In recent decades, vintage clothes have risen to the top of the fashion trends list for all ages. It seems odd that some buyers would choose to wear clearly out-of-date attire in a time when newer is better.

Also, second-hand: Today's generation is chasing second-hand clothing like ever before. Currently, the fashion industry is driven by two major factors – firstly, the growing demand for clothing and secondly, less negative impact on the environment. Considering these two factors, second-hand clothing is considered the best way to make your fashion more sustainable. Also, brands that are not taking sustainability seriously are suddenly being left behind. Regardless of how big or little the brand is, customers will disregard it if the customer overlooks sustainability.

In addition, technology from the past and present is already having an impact on the fashion industry and future trends. Recyclable raw material, good quality garments, recyclable and quality stitching, cobweb silk, mushroom leather, ecological materials, better working conditions could represent the future in the fashion sector. Also changes in fashion companies' strategy and policy and appropriate legislation and taxation targeting the consumer and the manufacturer.

c) The future professional profiles in the fashion sector

- Product Innovation / Product Sustainability
- Corporate Social Responsibility (CSR) Manager/ Ethical Trade
- 3D Printing Engineer
- Consumer Psychologist
- Fabric Research and Development
- Personal Stylist
- Sustainability Expert for fashion



- Expert in textiles and clothing sector/ Textile Sorters and Collectors
- Sustainability Manager
- (Re)manufacturing Designers

d) Identification of the technical skills essential to the needs of the circular economy.
Theoretical and practical knowledge required by the identified occupation.

Skills

- Clothing assembly
- Waste management
- Industrial cleaning
- Stock control
- Sustainable design concepts
- Manufacturing and recycling skills
- Eco design skills
- Finding the right suppliers of ecological materials
- Acquiring new knowledge to process reclaimed material
- Ecodesign
- Zero waste manufacturing
- Applying new technologies to support eco friendly and circular (re)manufacturing
- Green marketing skills
- Corporate social responsibility
- The use of complex methodologies that demonstrate the students' ability to create solutions applied to multifaceted projects starting from research, passing through the analysis of trends to arrive at the design process
- Utilizing computer-aided design (CAD) programs for designs, working with other 3d software
- Understand steps to measure, access, reduce and offset greenhouse gas emissions, air and water pollution, toxicity and waste issues
- Conceptualize and create a sustainable action plan for a fashion business to reduce their impacts and footprints

Knowledge

- Environmental Legislation & Policy
- Industrial Sustainability
- Energy management
- Climate change
- Sustainable business models
- Environmental economics
- Technology
- Materials for a circular economy
- Business or Public Administration



- Equipment Engineering
- Textile Engineering
- Sustainability (environmental, social and economic) Analysis and Management
- Health & Safety Legislation
- Carbon footprint
- Social responsibility legislation

e) Transversal skills and key behavioral competencies needed in the fashion industry to meet the needs of the circular economy

The Sustainability Expert should have a minimum of a level 5 (EQF / NQF) in one of the following areas:

- Creativity and innovation
- Research and analysis
- Excellent communication and presentation skills
- Project management
- Waste, package and environment according to the national and EU regulations
- Design for a circular economy
- Entrepreneurial competencies/ Entrepreneurial mindset (building of new supply chains, adoption of different manufacturing processes etc.)
- Marketing and User-centered competences (engaging the customer in a co-creation process, offering an integrated customer value creation process and meeting customer needs).
- Collaboration skills and the ability to use external expertise are of high importance, as identifying key actors and generating long-lasting collaboration is an essential feature of a successful business model innovation.

New skills, competences and capabilities are needed in order to implement circular economy principles and circular business models in the textile industry.

- Ability to spot trends
- Teamwork and ability to collaborate across business lines
- Eco-design principles in fashion and textile industry (Adopting, mastering and implementing eco-design skills)
- Environmental management
- Entrepreneurship

f) Training trends in the fashion and sustainability industries

- Fashion and Luxury Law and Business Seminar - Tailored (non-profit organization founded in Greece)
- Clothing and Footwear Technology Technician - Fashion Designer – IVET National



- e-Learning - Marketing & Fashion Trade - KEDIVIM – Athens university of Economics and Business
- Luxury Brand Management – Pansik Private educational Organization
- Photoshop Fundamentals for Fashion Seminar - Pansik Private educational Organization
- Fashion Design and Marketing Expert – National and Kapodistian University of Athens
- Campaigns, seminars, lectures on sustainability and circular economy
- Educational programmes in schools with ecological awareness, how materials can be used
- Educational programmes on Sustainable Development (ESG)
- The school environment aims is to introduce pupils to ecological values, which can offer a much better quality of life, with better conditions for current generations, but also for future generations
- Environmental Management Systems - Information for Management
- Circular Economy - Centre for Training and Lifelong Learning - University of Western Macedonia
- MSc - Postgraduate Studies Programme "New Textile Materials and Technologies in Fashion Design" – TEI Pirea
- ENVIRONMENTAL SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT: APPLICATIONS IN EDUCATION – University of Patras
- Sustainable Business Development Seminars



4.4. ROMANIA

a) General information about the profile of the interviewees

One of the Romanian interviewees was CEO in a clothing production company (Katty Fashion) and has a total of 26 years of experience in the fashion sector. 48 people are currently employed in the company.

The other interviewee is a research assistant in the Fashion Design department of the Faculty of Arts and Design at the West University in Timișoara. She has been in the field for 9 years as a fashion designer and for 3 years as a researcher and teacher. Her main field of research is Sustainable Fashion Design, which is also the topic of the professional phd that she is going to complete at the beginning of 2023. She has studied fashion sustainability for the last 3 years as well as all related fields such as consumer psychology, political reforms aimed at ecology, marketing campaigns aimed at selling or "green" image, clothing subject to standardization, alternative, recycled and natural materials .

b) The fashion sector in the future (scenario)

It is considered that each of the companies from the fashion chain should go in their production chain and together with the stakeholders, understand which are the steps need to be taken in order to achieve digital optimization. Digital software and tools should not be very complicated and difficult for people to use.

Documenting the trends for the upcoming year and looking for technologies that could optimise the specific process related to the trends.

Researching and testing these technologies and the way to implement them in a clothing production company, preparing the appropriate solutions for each case.

Preparing packages with innovative and efficient technological solutions fitted for every type of production line (based on garment and fabric types).

Creating a strategic plan for the fashion of the future and testing them and validating adding the latest technologies actually suitable for Katty Fashion.

The transition towards a circular economy model implies slowing the pace of production down, which will require the active participation of educated consumers. However, as consumers play a vital role in this transition, their knowledge of sustainability and circular economy must be increased.

c) The future professional profiles in the fashion sector

In the future the fashion sector will not have very different job titles, instead there will be massive technology that will change the classic approach. The design part will not have a



significant impact but mostly the development of the materials and the technological approach itself. Future professions would include:

- Researcher in the area of materials (biodegradable or alternative)
- Printer experts in 3D modeling programs
- Innovators and researchers to create, test and validate digital/technological solutions for the fashion sector
- Specialized educators to research gaps in skills and knowledge and create specialized curricula that teach future professionals every aspect and impact of the production cycle and the skills and competencies they need for working in this sector
- Facilitator of partnership between the VET institutions, training providers and academic institutions and companies

d) Identification of the technical skills essential to the needs of the circular economy. Theoretical and practical knowledge required by the identified occupation.

There is a need for technical skills in the digital area, as these go hand in hand with applied technical skills.

From a theoretical point of view, a better understanding is needed of:

- consumer behavior
- the needs of the market
- understand the processes in the company and then be able to document and extract essential information of those paths that you can take to transform and support the transformation of the company
 - Prioritization and the ability of creating a strategic plan based on relevant priorities
 - In-depth understanding of what impact means and how this is calculated (personal and company-wise)
 - Ability to work with cutting-edge digital tools
 - 3d modelling

e) Transversal skills and key behavioural competencies needed in the fashion industry to meet the needs of the circular economy

- Digital competences
- Creativity
- Social skills based on teamwork
- Personal, social and learning to learn skills



- Emotional intelligence
 - The ability to document and extract relevant information from a report, research paper, article, etc. and adapt it to a relevant cause

 - positive impact should be accompanied by viable transformation
 - ability to adapt to clients and convince them to pursue a sustainable solution by presenting it in a way that will make the client interested
 - ability to customize services to the client
 - being a good salesperson
 - a sustainability-oriented mindset
- f) Training trends in the fashion and sustainability industries
- The general public takes information about trends from specialized magazines and from social
 - The Technical University of Iasi is very focused on participating in innovative Erasmus Plus projects, and surely other Universities in the country are doing the same
 - There is a strong gap between the knowledge and skills that graduates have compared to the actual needs of the job market – whenever someone new is hired, this person needs to undergo in-depth training for a few years, which also makes them feel impatient
 - For each transformation step needed, the associated skills related to this transformation should be investigated upon and transformed into an educational opportunity
 - Romania promotes, more or less for moral reasons, a type of economy focused on recycling from a fashion point of view.
 - There are plenty of E+ partnerships won by Romanian institutions that are making education for sustainability more attainable in Romania for those interested



4.5 SPAIN

a) General information about the profile of the interviewees

The first Spanish interviewee is a textile teacher for many years in vocational training course for textiles. Is also the creator of the platform <https://texwiki.net/en/>. The purpose of this portal is twofold. On the one hand, to disseminate the training offer in the textile and fashion sector. On the other hand, to gather and group together information related to textiles and fashion produced by the students of the different academic levels of the textile courses, the teaching staff and other people who may be interested. It is intended to be a participatory and at the same time educational resource. For companies it can be a resource to find future workers.

Also the second participant was an expert in the field as a Technical textile engineer for more than 30 years. He is director at the Textile Technology Research and Transfer Center while he spent 20 years as a teacher at the CANET University School of Technical Textile Engineers attached to the Universitat Politècnica de Catalunya. The Center for Research and Transfer of Textile Technology - School of Textiles is dedicated to research, development and technology transfer in the field of the textile industry.

The investigations that the center develops are mainly in sustainability, they also develop commissioned projects for the textile sector and in other areas, they train through EURECAT professional certificates in the textile sector such as : Pattern making and fashion and VET training cycles that depend on the Canet VET Institute in its facilities, since 2013 the intermediate degree of clothing and fashion, since 2022 the intermediate degree of production and soon a higher grad of styling and fashion. They are a reference center for vocational training in textiles, for the training of teachers and students.

The third interviewee is also director of INTEXTER and professor for 36 years at the Polytechnic University of Catalonia in Terrassa, in the textile area, university professor at the engineering school, gives training in fibres and fabric quality assessment. The INTEXTER is an academic unity of “Universitat Politècnica de Catalunya” founded in 1962, whose main objective is research promotion in the textile industry and related sector, as well as industrial cooperation by essays, appraisals, standardisation work, homologation and certification.

The Institute is a member of the Technological Innovation Centre in UPC (CIT-UPC), it is recognized as a developed centre TECNIO of Agency for Company competitiveness in Generalitat de Catalunya, and it takes part of international network of Textile Transfer Network (TEXTRANET).



b) The fashion sector in the future (scenario)

It is considered that in fashion you work as a team, in the future everything will revolve around sustainable textiles, traceability of products, digital passport of the product (recycled material content production) eco-design January 1, 2025 regulation links to the application of the European textile strategy sustainable. One of the objectives is to avoid green washing, labeling, collection of textile fraction in general. Spain produces 900,000 tons to collect, recycle and reuse, ban on burning and Africa, where it was sent to begin to return textile product. In the fashion collections, it will be regulated that approximately 20% of the average must be recycled fibers in the products.

More and more awareness and even more companies are committed to sustainability. However, the main aim of big brands is making money, so they do not pay much attention to the quality of the product, and this will continue to affect the future.

Mentality must be changed, since fashion is devalued, products must be given value again and that affects design and production. It went from four seasons first, then 2 collection seasons and now every 15 days there are new collections with pre-processes and processes that use a lot of energy and material.

A balance must be sought between durability, quality, and consumption. And also, a balance between consumption and business.

Sustainable material does not exist, if something is manufactured it is no longer sustainable. Recycling existing material has always been done to reduce costs, such as regenerated cotton, which is not of good quality.

Recycled materials do not guarantee the durability of the product, so it is necessary to find a balance between high-quality products that have added value and design and durability. Education must be offered to consumers to extend the life of garments, even if it is not for the same consumer.

Spain currently only exports quality textiles with added value to the EU, the rest of the design and production is mostly done abroad.

c) The future professional profiles in the fashion sector

Regarding professional profiles:

- designers lack technological training, they design products without valuing the processes, if they had this training they would take it into account in the design, they would do eco-design.

Regarding professional profiles:



- designers lack technological training, they design products without valuing the processes, if they had this training they would take it into account in the design, they would do eco-design.

For example, materials that are used such as recycled polyester from the bottom of the sea, are not of good quality, they must be doped with good polyester. Recycled material is not to be used in fashion; it must be given other uses. Technology must help save energy and material. Return to proximity.

More technicians in the fashion companies and designers in the industry because it is a teamwork.

- d) Identification of the technical skills essential to the needs of the circular economy.
Theoretical and practical knowledge required by the identified occupation.

The EU project FACTIVE where one of the interviewees has worked, aims to enhance the quality and relevance of the learning offer in Textile and Clothing VET training by developing an innovative learning approach to improve the level and the assessment of learners' competences and equalize the VET training quality to the modern, creative and innovative needs of the current Textile and Clothing industry in Europe. The course FACTIVE MOOC (Massive Open Online Course) "Sustainability in the Textile and Clothing Industry" is intended for:

- Fashion, Textile and Clothing actual or future product developer
- Fashion, Textile and Clothing R&D staff
- Fashion, Textile and Clothing students who want to improve their knowledge and skills in the field of sustainability

Taking this course, students learn:

- The impact of Textile & Clothing industry on sustainability
- New processes, business models and technologies that can be used for improving the environmental impact of the T&C sector
- The key principles of how to design for circular fashion
- How to include consumers into sustainability effort and how to ensure transparency and transparent communication about sustainability

They have also produced the Handbook :

<http://factiveproject.eu/wp-content/uploads/2022/02/FACTIVE-HANDBOOK.pdf>

Tendencies of specialization in sustainability involve:



- sustainable materials
- reimagining the textile
- the traceability of the product
- transformation and subsequent life within the circular economy
- carbon footprint
- technological fabric not technological material
- research regarding sustainability in processes

As 80% of the impact is decided in the design phase, ECO-DESIGN requires an overview of the product, of its life cycle, knowledge to interpret this data, to choose materials and know industrial processes. The designers must have technological knowledge, and the technologists in patronage, design, and strategies.

- e) Transversal skills and key behavioural competencies needed in the fashion industry to meet the needs of the circular economy

According to the in-depth desk and field research carried out by all FACTIVE partners, the most relevant transversal skills needed by future Textile and Clothing professionals for the European T&C companies and the most suitable and effective training methods to transfer these skills to VET students and young employee are described in the report of the 1st output of the project. The field research included the participation of more than 100 companies and around 50 VET experts.

Among other suggestions included:

- Business competencies in general for small designers and producers
- Production of glossary with important common vocabulary to work in a team in the companies.

- f) Training trends in the fashion and sustainability industries

Spain, is the country with the most capacity for mechanical recycling of thread and non-wovens for use in other industries, as the production of cement for example, but it is not enough and now a lot of research is being done on the chemical recycling of polyester-cotton. Within 4 to 5 years the research will conclude in results and the recycling processes will be accelerated.

What pollutes the most are finishes with wet processes, a change must be made to others that do not pollute as much, such as the laser wear process.

Lack of people specialised in textile techniques and textile machinery. Therefore, the contents must be related to the fundamentals in textiles that are necessary to know how to



innovate. Also, in textile process and in financial issues. It is necessary to create contents on textile and fashion to use at any educational level and for any type of degree, fashion or technical textile. For teachers, tutors and also students

At this moment the textile profiles are not attractive for the youth, a showcase of the innovation that exists in textiles is needed

The EURECAT project “Reimagine Textile” is a cooperation network that connects the main players in the textile industry, inviting them to re-imagine the sector for the 21st century.

The new materials, production processes and channels, the proliferation of data, devices, sensors and hyperconnectivity are resulting in to a new revolution of the textile.

Launched by Eurecat, the TecnoCampus Mataró and the Research and Textile Technology Transfer Centre of Canet de Mar, Reimagine Textile aims to be a key player in this revolution, bringing together textile, technology, innovation, talent, new business models, new skills, design and digitalisation. This is an ecosystem based on an open philosophy: its members cooperate, share, co-work, co-create, co-invest and connect.

The 5 main concepts of Reimagine Textile are technology, industry, training, entrepreneurship and investment. As a result, it is made up of companies, entrepreneurs, technology centres, Fablabs, schools of design, investors, mentors, incubators, accelerators, consultants and associations.

The portfolio of services available to the members of the network include an innovation and advanced prototyping laboratory, a technology radar, incubation and technological and business acceleration services, mentoring, financing, consulting and support to the market approach and new business models, as well as networking and outreach activities. Web: www.reimagnetextile.com

Related to the circular economy, are used less and less clothes, 35% less in the last 5 years. In the US people buy a piece of clothing every 5 days. In the fashion business, the model must transition to slow fashion, and promote services such as repair, clothing rental, etc.

They present to us a sustainable fashion association from Barcelona, they are self-employed workers in the design and artisanal production of clothing, footwear, accessories, which require textile technological training and entrepreneurship.

There are more and more textile and fashion companies that are approaching ecology and sustainability and demand training for their managers and workers

It is also considered that the influence of some big companies help with the students' awareness.



5. CONCLUSIONS and RECOMMENDATIONS

In this report are presented the main findings of the survey and interviews held in all partner countries Germany, Italy, Spain Greece and Romania. Most of the participants were experts in the fashion sector, professionals in fashion and education while some were even experts in sustainability in the fashion industry.

In order to develop the skills transformation map, identification and analysis of major skill changes were taken into account for the selected occupations in the fashion sector towards the future trends and scenarios.

The survey and interviews with sector professionals, training providers and other stakeholders aimed at identifying the skills that are essential to adapt the industrial processes design to meet the needs of the circular economy. The result of this process is a “skills transformation map”, which will present an accurate matching of people’s skills with the requirements and demands of the circular economy in the fashion industry, identifying the key behavioral, technical, and functional competencies needed in the industry and defining the transition phase and the impact of the change.

Future professional profiles in the sector were defined as :

- **Fashion Sustainability Managers** - follow from the beginning until the end of the business process – the compliance with environmental regulations. This professional profile will be assisted also by **experts in raw materials and production cycles** in order to identify the ways in which the industrial processes could be adapted to achieve the objectives of a Circular economy. This change process should be aimed at improving environmental impact, keeping producing wealth at the same time.
- Consultants/ Direct sales managers- that support the customer during their purchasing/ shopping experience and even after the purchase.
- 3D Artist - to create computer-generated images, in perfect balance between technical and creative work: it's no coincidence that, in addition to a solid background in graphics, an art director's eye is required
- Virtual Showroom Designers / Virtual Visual Merchandisers – for designing an ideal, yet extremely real environment that can be simpler, more convenient and quicker to use for the customer, while at the same time managing to facilitate business communication. The graphic preparation must be completed with a strong aesthetic sense and a good dose of applied psychology.
- Fashion lawyers - Without any doubt, that of the "fashion lawyer" is one of the most fascinating new professional figures. The reason for its rise is to be found in the constant



growth of cases of plagiarism, counterfeiting or unfair competition, but also of cultural appropriation and collaborations that require to be regulated at a legal level.

- Corporate Responsibility Manager - to keep up with the times in order to avoid the situation of cultural appropriation and have a social representation of the brand. How many times has it happened that a brand has had to apologize for being unfair or superficial towards a minority? In order to keep promises and improve corporate communication, the figure of the corporate responsibility expert plays a key role.
- **Data Editors** - able to understand the market's needs, analyze customer behavior using also big data analysis with a view to setting the stage for future fashion trends. These objectives could be achieved also with the support of an **Artificial Intelligence ("AI") Expert** in order to create A.I. algorithms to detect such customer behavior.
- A **Metaverse Expert** - will be able to manage this change considering the increased attention to NFT and virtual store world. In fact, consumers spend more time online increasing the attention on e-commerce and virtual showrooms.
- Circularity managers or officers - will prepare the path towards a real sustainable facility
- Product Innovation / Product Sustainability
- Corporate Social Responsibility (CSR) Manager/ Ethical Trade
- 3D Printing Engineer
- Consumer Psychologist
- Fabric Research and Development
- Personal Stylist
- Expert in textiles and clothing sector/ Textile Sorters and Collectors
- (Re)manufacturing Designer

While technical and transversal skills essential to the needs of the circular economy are identified as:

Technical:

and also technical skills in higher level such as:

- digital and green literacy
- entrepreneurial skills and STEM (science, technology, engineering and mathematics) competencies for green jobs in emerging sectors.
- legal framework and regulation
- design for disassembly and fibre processing and resource efficiency topics such as zero-waste pattern design and new technologies in dyeing and printing.
- sustainable production / Know how the blockchain works, product life-cycle
- innovating the product design process to improve longevity
- ability to work in a transdisciplinary way



- Focus on the final customer rather than on technical competencies related to “how to sell”
- Management & entrepreneurship and the social competency
- Knowledge about biodegradable raw materials.
- Know how/ ideas on how to deal with clothing that is no longer needed
- Industry approaches, that companies join forces and e.g. collect all grey sweaters that are no longer needed and process them further.
- Knowledge of sustainability labels is becoming increasingly important
- Know how on pesticides and chemical compositions
- Knowledge about work standards
- Clothing assembly
- Waste management
- Industrial cleaning
- Stock control
- Sustainable design concepts
- Manufacturing and recycling skills
- Circular design skills
- Acquiring new knowledge to process reclaimed material
- Applying new technologies to support eco friendly and circular (re)manufacturing
- Green marketing skills
- The use of complex methodologies that demonstrate the students' ability to create solutions applied to multifaceted projects starting from research, passing through the analysis of trends to arrive at the design process
- Utilizing computer-aided design (CAD) programs for designs, working with other 3d software
- Understand steps to measure, access, reduce and offset greenhouse gas emissions, air and water pollution, toxicity and waste issues
- Conceptualize and create a sustainable action plan for a fashion business to reduce their impacts and footprints
- Fashion, Textile and Clothing actual or future product developer
- Fashion, Textile and Clothing R&D staff
- Fashion, Textile and Clothing students who want to improve their knowledge and skills in the field of sustainability
- New processes, business models and technologies that can be used for improving the environmental impact of the T&C sector

Transversal:

- problem solving
- Teamwork with appreciation of the entire team
- creativity in imagining new scenarios and new solutions



- Ethical sustainability
- Knowledge of sustainability seals/labels
- Overview of value chains
- Learning about chemical use
- Knowledge of CO2 development
- Work safety
- critical evaluation of the environmental, social and economic impacts
- Know how about alternative solutions e.g., refurbishing old clothes, rental models etc.
- Awareness of everyone in the company about the overall context of sustainability
- Strong interpersonal skills, investigative, pragmatic, systematic, empathetic, full of initiatives, driven, ambitious and persistent
- Long term vision, forward thinking, the functional competency – to anticipate all the challenges that could emerge during this transformation and resolve the related conflicts.
- Strong leadership and dynamic capabilities in order to transfer the key concepts and impacts of Circular economy to the stakeholders and management teams with a different background and located in different areas.
- Flexibility, versatility, with strong communication skills, inclusive, innovative, environmentally aware and open-minded
- How to effectively communicate and relate to the customer
- Willingness to take responsibility across all sectors of society and the essential knowledge to enable the change
- Systems thinking
- Corporate social responsibility