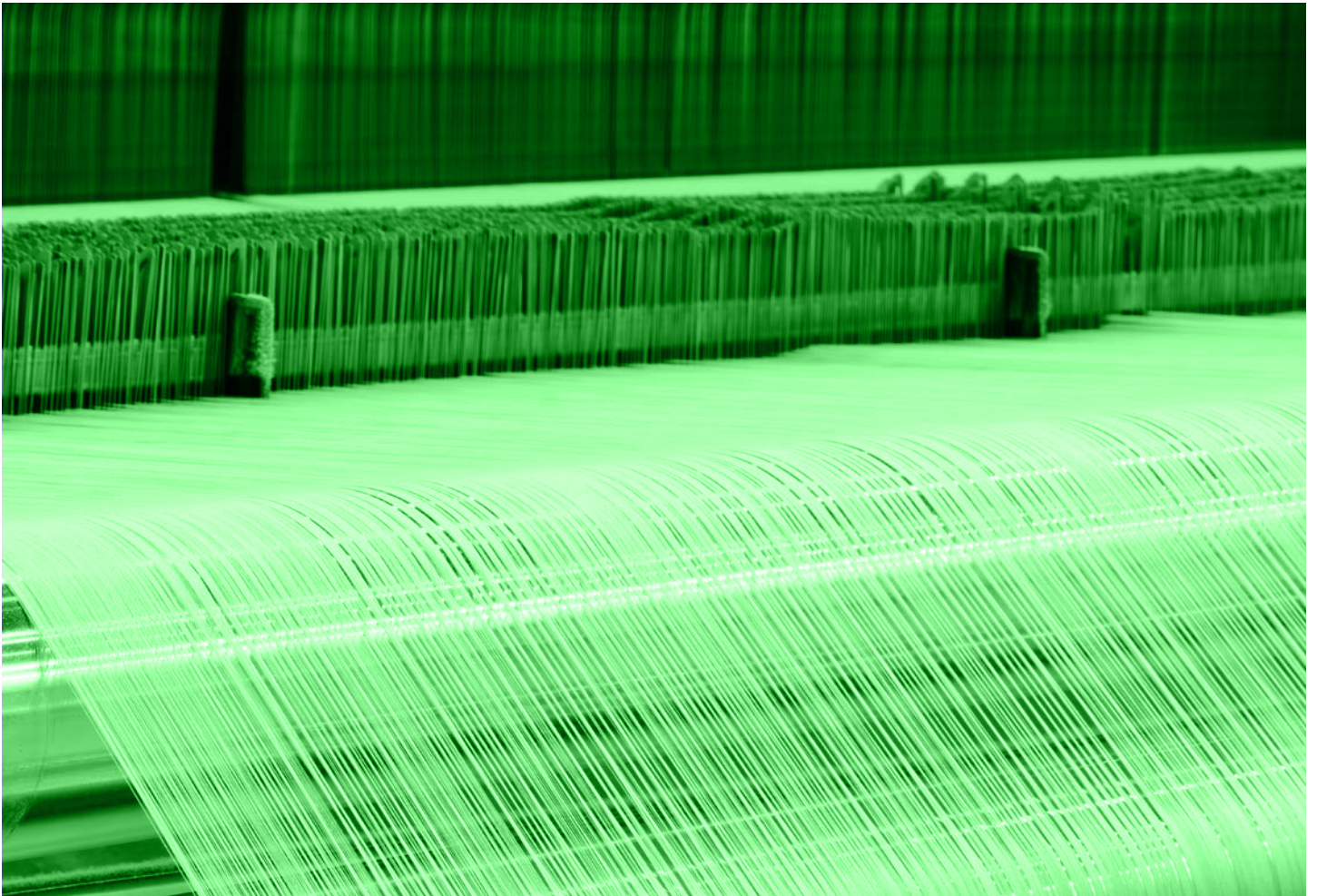


National Roadmap for Safer Chemical Management in the Textile and Garment making Industry

SwitchMed II – Industry component (MED TEST III)

Tunisia



Co-funded by:

Funded by the European Union, with co-funding from the Government of Italy and the Government of Catalonia, the SwitchMed Programme is being implemented under the leadership of the United Nations Industrial Development Organization (UNIDO) in partnership with the United Nations Environment Programme (UNEP) Economy Division and MedWaves, the United Nations Environment Programme Mediterranean Action Plan (UNEP/MAP) and Regional Activity Centre for Sustainable Consumption and Production (formerly known as SCP/RAC). The initiative is being carried out in close collaboration with the European Commission's Directorate-General for Neighbourhood and Enlargement (DG NEAR).

Each implementing organization contributes specialized experience and tools to partner with the eight beneficiary countries on policy development, capacity building, business support services, demonstration activities and networking.

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This publication has been produced without formal United Nations editing as part of the SwitchMed programme and with financial assistance from the European Union. The contents of this publication are the sole responsibility of the author, and do not reflect the views of the European Union. The opinions, figures and estimates presented are the responsibility of the authors and should not be considered as endorsements.

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Executive summary

As part of the European Union (EU) funded SwitchMed Programme, the United Nations Industrial Development Organization (UNIDO) launched a textile initiative aimed at improving chemical management in the textile finishing sector across Morocco, Tunisia, and Egypt. In the third phase of this initiative, the focus was on providing training and technical support to a group of companies to help them achieve the Foundational level of compliance set by the Zero Discharge of Hazardous Chemicals (ZDHC) program. This involved conducting gap analyses, delivering training on safer chemical management, using online tools for sustainable practices, and developing a roadmap to scale up the outcomes of pilot activities on chemical management at the national level, as outlined in this document.

The document examines Tunisia's textile industry, exploring the opportunities and obstacles encountered within the specified project framework. The project context provides insights into the scope, methodology, and phases of the initiative for safer chemical management in textiles. Key findings and lessons learned from pilot projects inform subsequent sections, as well as a detailed proposal for a National Roadmap.

The development of the National Roadmap is a vital process that includes consultations with key stakeholders such as the ZDHC, the Tunisian Federation of Textile and Garment (FTTH) and the Technical Center for the Textile (CETTEX). Input from these key players helps to identify challenges and gaps within the industry and develop actionable projects aimed at promoting sustainable chemical management in Tunisia.

The implementation plan of the National Roadmap outlines specific actions and timelines, that provide a strategic guide for promoting sustainable chemical management in Tunisia. The National Roadmap places a strong emphasis on raising awareness through seminars, events, and the integration of sustainable practices into educational programs. Capacity building is a priority, involving the development and implementation of "Training for Trainers" programs at FTTH, alongside training programs for interested bodies and laboratories seeking ZDHC approval. Economic incentives and financial support from the Tunisian government will further incentivize chemical formulators and textile manufacturers to adopt sustainable practices. The National Roadmap also prioritizes the development of a chemical phase-out list, targeting non-compliant substances that are still in use.

Finally, modifications to policies and regulations within the Regulatory Framework will establish and enforce regulations, modernizing criteria for wastewater testing to ensure safer chemical management practices.

The document concludes by emphasizing the importance of collective efforts in achieving a sustainable and responsible textile industry in Tunisia.



1. Introduction

The textile industry in the Mediterranean region plays an essential role in shaping the region's economic landscape, contributing significantly to job creation and export revenues. However, this vital sector faces challenges that impact its competitiveness and sustainability. The industry is undergoing a major transformation as it copes with cheaper imports and adapts to consumer preferences for goods that are sustainably produced.

One of the significant challenges in the textile and garment sector is the extensive use of chemicals in processes such as dyeing, finishing, and printing. Managing and reducing the reliance on hazardous chemicals is essential for enhancing the industry's overall sustainability performance. As consumers become more aware of the environmental impact of their purchases, there is a growing urgency for the industry to adopt more sustainable and eco-friendly practices. While these chemical substances contribute to textile product innovation, concerns regarding their impact on the environment and health call for a thorough examination of industry practices.

In this context, the SwitchMed Program, initiated in 2014 and funded by the European Union, the governments of Italy and Catalonia, aimed to support eight countries in the southern Mediterranean region in advancing sustainable consumption and production patterns. Beginning in 2019, UNIDO launched a textile initiative in Egypt, Tunisia, and Morocco, focusing on advancing resource efficiency, circular economy practices, and chemical management in the textile and fashion value chain. The textile initiative in the three countries was structured around two main axes of intervention:

- i. the creation of a localized value chain for valorizing pre-consumption textile waste;
- ii. the introduction of safer chemical management protocols in collaboration with the ZDHC Foundation. The implementation of the latter was carried out in three phases:

Phase I - focused on training companies on chemical management in the textile industry, with an emphasis on ZDHC Guidelines.

Phase II - focused on implementing a full-scale technical assistance programme for six industrial facilities to adopt the ZDHC Guidelines and protocols.

Phase III - focused on extending training and technical assistance to a group of 15 companies, guiding them toward achieving the ZDHC Foundational level of compliance. This included gap analysis, training in safer chemical management, and the use of online tools for sustainable practices. It also included the development of a roadmap for scaling up the results of the pilot activities on chemical management at the country level.

Based on the results from Phase III, a National Roadmap for each of the three countries has been developed. The respective roadmap aims to provide strategic guidance on how to enhance sustainability and promote compliance with international standards, fostering a safer and more environmentally friendly textile industry. It has been created to encourage and facilitate discussions, among stakeholders regarding the steps, objectives, and timeframes for developing and implementing a strategic plan. It presents a framework for coordinating actions among stakeholders involved in representing industry interests conducting business operations and participating in research, development, policy formulation, and implementation.

This document draws on insights and knowledge gained from UNIDO's textile initiative during the SwitchMed textile initiative, which was implemented between 2019 and 2023 and covered all aspects of the textile and garment value chain.

Furthermore, the National Roadmap incorporates experience derived from projects and policies that focus on promoting the adoption of safer chemical practices and sustainability, within the textile sector.

2. Current state of the textile and garment industry in Tunisia

The textile and garment industry is a strategic sector for the Tunisian economy and the primary manufacturing industry in terms of exports, employment, and added value¹.

The sector positions itself as a pillar of the Tunisian industry and maintains a prominent place in the national economy, contributing significantly to the socio-economic balance of Tunisia and is among the top 15 garment suppliers in the world and its proximity to Europe makes Tunisia the eighth-largest supplier to the European Union².

2.1 Industry outlook

The textile sector in Tunisia enjoys multiple advantages that make it highly competitive in the region and make Tunisia one of the most favorable sites for foreign direct investment³.

The sector in Tunisia offers a range of promising opportunities that contribute to the country's economic growth and development. These include:

Proximity to Europe: Tunisia's geographical proximity to Europe gives the textile sector a significant advantage. This proximity facilitates efficient supply chain management, supporting "just-in-time" production processes and minimizing transportation costs.

Competitive production costs: Tunisia offers a cost-effective production environment, with lower labor and operational costs compared to many other countries. This cost competitiveness is a significant factor in attracting foreign direct investment and maintaining a global market presence.

Skilled workforce: Tunisia boasts a skilled workforce enriched by years of experience and expertise in various aspects of the textile industry, from design and production to quality control. This skilled workforce is capable of handling intricate designs and complex production processes, adding immense value to the industry. The availability of a qualified labour pool contributes to the industry's efficiency and high-quality output.

Modernization initiatives: The sector's ongoing modernization and computerization programs demonstrate a commitment to staying at the forefront of technological advancements. Embracing digital transformation and automation improves efficiency, productivity, and competitiveness.

Adherence to high-quality standards: The Tunisian textile industry places a strong emphasis on maintaining high-quality standards in line with international requirements. This commitment to quality contributes to building a positive reputation and securing a position in global markets.

Training and education programs: Tunisia has established comprehensive training and support structures, including specialized educational institutions and professional development programs. This infrastructure ensures a continuous supply of skilled professionals, promoting innovation and industry growth.

Social and environmental responsibility: Increasing global awareness of sustainable practices creates an opportunity for the Tunisian textile sector to align with eco-friendly and socially responsible initiatives. Embracing sustainable manufacturing processes can improve market appeal and meet evolving consumer preferences.

Government support and preferential trade agreements: Tunisia has signed several preferential trade agreements, such as the Free Trade Agreement with the European Union, which provides fiscal and customs benefits to Tunisian companies. The Tunisian government offers tax incentives to investors in the textile and garment sector, such as tax reductions on profits and subsidies for investments in research and development.

1 Reference: [Challenges.tn](#)

2 Reference: <http://www.cettex.com.tn/storage/668/Importations-d%27habillement-de-l%27UE-3-mois-2023.pdf>

3 Reference: [Invest in Tunisia](#)

2.2. Sustainability and chemical management within the textile sector in Tunisia

The chemical management practices within Tunisia's textile sector are commendable. They showcase several notable strengths, including the establishment of robust regulations governing chemical management and ensuring strict adherence by textile companies to standards in handling, using, and disposing of chemicals. This commitment promotes environmental sustainability and improves worker safety across the industry.

Furthermore, many Tunisian textile companies have embraced sustainable practices, including the adoption of eco-friendly dyes and chemicals, along with investments in wastewater treatment facilities to minimize environmental impact.

In the same direction, Tunisian companies have invested significantly in machinery to improve their environmental impact. They're dedicated to reducing the sector's environmental footprint. These include using innovative technologies such as lasers replacing sandblasting for fading jeans and ozone machines optimizing chemical usage.

Additionally, collaboration and knowledge sharing among stakeholders, such as government agencies, industry associations, and academic institutions, play an important role in exchanging best practices and technologies related to chemical management.

Moreover, Tunisia's skilled workforce is proficient in chemical management and textile production, facilitating effective implementation and compliance with regulations and quality standards. This proficiency ensures that Tunisian textile companies maintain high standards of chemical management, thereby gaining access to international markets that prioritize sustainability and environmental responsibility.

Furthermore, the sector's readiness to innovate and adopt new technologies in chemical management enhances efficiency, reduces waste, and improves product quality.



3. Project Context

3.1 Scope and Methodology

As part of the SwitchMed Programme, UNIDO launched a textile initiative aimed at promoting circular business models in the textile and garment industry, specifically in Tunisia, Morocco, and Egypt. This initiative focused on improving the management of pre-consumer textile waste and introducing valorization business models within the textile value chain in these three countries. In addition, the initiative also encouraged the adoption of best practices for safer chemical management in textile finishing. Working together with the ZDHC Foundation, local textile federations and international brands, the textile initiative successfully conducted training modules on safer chemical management for over 48 companies, enhancing their skills in chemical inventory management, the substitution of harmful products, and wastewater control.

3.2 Description of the textile initiative for safer chemical management

3.2.1 Phase I

At the beginning of the project, there was a significant lack of awareness about the ZDHC Guidelines⁴ and requirements among sector representatives the participating countries. To address this knowledge gap, the project launched a targeted training initiative aimed at wet-processing textile and garment companies in Tunisia, Morocco, and Egypt.

The training program had three distinct modules:

Module 1: Introduction to Chemical Management in the Textile Industry

Module 2: Top 10 Issues of Chemical Management

Module 3: Wastewater Management

UNIDO collaborated closely with the ZDHC Foundation and major global fashion brands to engage local suppliers from tier one and two, particularly those involved in dyeing and finishing processes. The aim was to encourage these suppliers to participate in SwitchMed training activities focused on effective chemical management. The brands supported this effort by raising awareness and motivating their key suppliers to join the training. Participating companies were invited to express interest and nominate candidates for each module. In turn, UNIDO selected the most promising companies to benefit from the program. The roadmap included conducting two training cycles in each country, with around 25 participants per module. Upon completing each module, participants had the chance to take the ZDHC exam, further validating and certifying their expertise.

The training sessions were delivered online and followed a structured schedule.

June 2020: the participation of six Tunisian companies.

July 2020: three additional Tunisian companies.

September 2020: two Moroccan and four Tunisian companies.

December 2020: further engaged three Moroccan companies, one Tunisian company, and CETTEX⁵.

March 2021: extended the initiative to six Egyptian companies in collaboration with the Industrial Modernization Center (IMC).

June 2021: participation of ten Egyptian companies.

The table below presents the results of the training sessions during phase I for the three countries:

| Parameter | June 2020 | July 2020 | Sept. 2020 | Dec. 2020 | March 2020 | June 2020 |
|---|------------|------------|------------|------------|------------|------------|
| N. of Trainees | 62 | 68 | 88 | 55 | 77 | 88 |
| N. of ZDHC Academy training certificates issued | 59 | 57 | 79 | 31 | 51 | 51 |
| Success rate | 95% | 84% | 90% | 56% | 66% | 64% |

Table 1: Final indicators for the training conducted during phase I

⁴ Zero Discharge of Hazardous Chemicals ZDHC: This is a program initiated by a group of major fashion brands and retailers with the goal of eliminating the use of hazardous chemicals in the textile, leather, and footwear value chain. The ZDHC program develops guidelines, tools, and trainings to drive the adoption of safer chemical management practices. This includes establishing protocols for wastewater discharge and chemical use, promoting more sustainable practices across supply chains, and working towards a vision where harmful chemicals are no longer released into the environment.

⁵ CETTEX: The Textile Technical Center (CETTEX) is a Tunisian public institution of economic interest established in 1991. It operates under the Ministry of Industry and provides counseling and expertise to industrialists in the Textile and Garment sector and to public authorities

This phased approach not only facilitated tailored learning experiences for industry stakeholders but also fostered a continuous and progressive engagement with the ZDHC Guidelines and best practices in chemical management within the textile industry

A total number of 238 company employees were trained, with some of whom attending more than one training module, 501 exams were taken, 377 out of which achieved ZDHC Academy training certificates passing the final exam.

3.2.2 Phase II

Following the completion of the awareness-raising phase, two companies per country were identified from those that attended training sessions to receive customized technical assistance in formulating their individual roadmaps toward ZDHC compliance. The pilot companies, nominated by major brands, were encouraged by their primary customers to participate in the pilot initiative.

The technical assistance provided involved tailored one-to-one guidance for each company, covering specific aspects including:

- **Chemical Purchasing Policy and Procedures:** Offering guidance on the formulation of policies and procedures for the procurement of chemicals.
- **Preparation of a Chemical Inventory List:** Aligning with the ZDHC template, assistance was provided in creating a comprehensive Chemical Inventory List.
- **Roadmap for Chemicals Substitution:** This involved the development of a roadmap for substituting chemicals, including a risk assessment of existing chemicals.
- **Chemical Storage Management Audit:** Conducting an audit to assess and improve the management of chemical storage facilities.
- **Wastewater Assessment:** Evaluating wastewater management practices to ensure environmental compliance.
- **Effluent Treatment Plant Management:** Providing guidance on the management of effluent treatment plants.

Upon completing the technical assistance phase, companies were expected to have implemented all the necessary parameters for safer chemical management. Consequently, they were encouraged to apply for the Foundational level. Companies were also encouraged, on a voluntary basis, to undergo wastewater treatment to confirm compliance. In cases where non-conformities were identified, companies received support in developing corrective action plans.

The entire technical assistance process lasted approximately one year for each company, reflecting the systematic and detailed nature of the guidance provided.

By the end of this phase, five out of the six pilot companies assisted, achieved the ZDHC Foundational level. The results of the pilot projects are published in a set of [SwitchMed case studies](#).

3.2.3 Phase III

A pool of 15 companies—comprising eight from Tunisia, six from Egypt, and one from Morocco—was selected by UNIDO in collaboration with local textile federations and international brands. These companies received support to create their accounts on the ZDHC Supplier to Zero Platform. Following this, their current performance in chemical management was assessed against the ZDHC Supplier to Zero Foundational Level. A gap analysis was conducted for each of the 15 companies to determine what was needed to reach the ZDHC Foundational Level.

Based on the identified gaps and training needs, Leadership & Sustainability (L&S) delivered a training program to the 15 companies, consisting of a package of training sessions on safer chemical management requirements, comprising the following five modules:

- **Chemical Management System Technical Industry Guide:** This training provides practical guidance for the implementation of CMS TIG minimum requirements for sustainable chemical management and best practices.
- **Wastewater Management:** This training is designed to improve the company's understanding of Wastewater Management.
- **Effluent Treatment Plant Management:** This training introduces the latest ZDHC Wastewater Guidelines, including sampling and testing requirements.
- **Resource Efficiency:** This training covers strategies and best practices for using resources more efficiently throughout the supply chain, with a focus on reducing waste, conserving energy, and optimizing resource utilization.
- **Use of ZDHC on-line tools:** This training provides an overview of how ZDHC Guidelines, Platforms and Solutions can support the development and implementation of a Sustainable Chemical Management System.

The training sessions aimed to support the companies in developing their internal skills, educate related people working in these factories to understand how to implement safer chemical management standards, eliminate hazardous chemicals, and draw their specific roadmap to fill existing gaps.

The table below presents the results of the training sessions delivered during this phase:

| Parameter | Tunisia | Morocco | Egypt | Total |
|---|---------|---------|-------|-------|
| Companies trained | 8 | 1 | 6 | 15 |
| Personnel trained | 23 | 2 | 16 | 41 |
| Number of ZDHC Academy training certificates issued | 33 | 2 | 16 | 51 |
| Number of non ZDHC Academy training certificates issued | 51 | 3 | 18 | 72 |

Table 2: Final indicators for the training conducted during phase III

After providing the training, the L&S team worked on specific assistance for each company to guide them in implementing specific elements of their roadmap to fill in the gaps and reach the ZDHC Foundational level. The technical support assistance averaged three working days per company, depending on the level of assistance needed.

The table below presents the ZDHC self-assessment scores achieved by the Moroccan facility participating in the third phase of the project, before and after the technical assistance received for achieving the Foundational level of the Supplier to Zero Platform.

| Supplier to Zero Aspect | Score before technical support from UNIDO | Score after technical support from UNIDO |
|-------------------------|---|--|
| Policy | 50% | 100% |
| Strategy | 67% | 100% |
| Assessment | 100% | 100% |
| Health & Safety | 88% | 100% |
| Chemical Inventory | 80% | 100% |
| Storage & Handling | 100% | 100% |
| Output Management | 100% | 100% |
| Air emissions | 33% | 100% |
| Continuous Improvement | 0% | 100% |
| Employee training | 100% | 100% |
| Process Control | 50% | 100% |

Table 3: Scores on the Supplier to Zero Platform before and after assistance

The tables below present the consolidated results of all the training sessions conducted under this project (with the three phases) for the three countries:

| Parameter | Tunisia | Morocco | Egypt | Total |
|--|---------|---------|-------|-------|
| N. of companies trained | 21 | 6 | 21 | 48 |
| N. of personnel trained (including CETTEX and IMC) | 119 | 29 | 88 | 236 |

Table 4: Consolidated number of companies and personnel trained during the three phases

| Parameter | June 2020 | July 2020 | Sept. 2020 | Dec. 2020 | March 2021 | June 2021 | July 2023 | Total |
|---|------------|------------|------------|------------|------------|------------|------------|------------|
| N. of Trainees | 62 | 68 | 88 | 55 | 77 | 88 | 71 | 501 |
| N. of ZDHC Academy training certificates issued | 59 | 57 | 79 | 31 | 51 | 51 | 49 | 377 |
| Success rate | 95% | 84% | 90% | 56% | 66% | 64% | 69% | 75% |

Table 5: Final indicators for the training conducted during the project with three phases

The findings of the technical assistance provided to the companies participating in the project can be analyzed based on the identified gaps in practices and procedures. This analysis highlights areas that require significant improvement to align with international best practices and standards, particularly those set by the ZDHC:

Policy for Chemical Management: Currently, there is an absence of a specific policy for chemical management that covers the latest ZDHC Manufacturing Restricted Substances List (MRSL) and Wastewater and Sludge Guidelines.

Documented Chemical Management Strategy: The absence of a structured and documented approach to managing chemicals poses considerable risks. Without a clear strategy, the likelihood of mishandling chemicals and subsequent hazards increases. A well-documented strategy is essential not only for regulatory compliance, but also for ensuring the health and safety of employees, minimizing environmental impact, and maintaining operational efficiency and industry reputation. By implementing such a strategy, organizations can establish clear guidelines, enhance accountability, and facilitate consistent practices across the sector.

Safety Data Sheets (SDS) Management: The absence of a documented procedure for maintaining and regularly reviewing SDS for all chemicals points to potential gaps in information accessibility and chemical safety knowledge among workers.

Air Circulation and Extraction Systems: Inadequate air circulation and extraction in areas where hazardous chemicals are used can lead to poor air quality and increased health risks for workers.

Reviewing CMS Performance: The lack of a standard operating procedure for reviewing Chemical Management System (CMS) performance indicates a shortfall in ongoing evaluation and improvement of chemical management practices.

CMS Performance Review and Incident Management: Without a complete CMS performance review, including incident logs, root cause analyses (RCAs), and corrective action plans (CAPs), there is a missed opportunity for learning from past incidents and preventing future occurrences.

Regular CMS Reviews: The absence of regular CMS reviews to measure progress against the goals set in the CMS strategy suggests a lack of continuous improvement and adaptation in chemical management practices.

Document and Record Control: The lack of a standard operating procedure to control documents and records can lead to disorganization and inefficiency, potentially impacting compliance and traceability.

Finally, each country received a detailed plan, presented to national stakeholders, that highlights the potential benefits and necessary steps for upgrading the entire textile finishing sector to meet ZDHC best practices for safer chemical management.

3.3 Lessons learned

The observations gathered from the training sessions and exam results from all project phases can be summarized as follows:

Regional interest disparities: Tunisian enterprises showed a remarkable enthusiasm and high engagement in the training session subjects. The engagement levels of the participating pilot companies played a pivotal role. Many of these demonstrated a proactive willingness to embrace change and adhere to new requirements and guidance. They expressed commitment to implementing the corrective plans outlined for the future. In some cases, companies were motivated to participate when brands and customers expressed interest and made requests. However, challenges emerged when a pilot company lacked similar demands, which could lead to deviations from the established process and objectives. Maintaining close monitoring and assistance became crucial in these scenarios, particularly in promoting a new culture within the factory.

Success rate: Tunisian trainees exhibited a higher success rate compared to their counterparts from Egypt and Tunisia. This success can be attributed to language proficiency and familiarity with the ZDHC Guidelines.

Module-specific engagement: Notably, there was a decline in both interest and participant numbers for the Top 10 Issues of Chemical Management and Wastewater Management modules of the training compared to the initial module “Introduction to Chemical Management in the Textile Industry”. This observation suggests the need for targeted strategies to maintain engagement throughout the entire training program.

Impact of brand affiliation: Companies affiliated with the ZDHC contributing brands exhibited a notably higher success rate in the training and exams compared to those not associated with these brands. This highlights the influence of brand affiliation on the commitment and success of participating companies.

In Tunisia, major brands are encouraging local companies to embrace more rigorous protocols for overseeing chemical products. Consequently, many companies seized the opportunity presented by the SwitchMed initiative to participate in the training. In this case, any increase in costs for the replacement of chemical products is clearly perceived by local companies as necessary for maintaining their export market position and good client relationship.

Diverse company readiness and challenges in navigating chemical management phases: The varying levels of preparedness, commitment, and capability to navigate the distinct phases were evident among the participating companies. For instance, some lacked a comprehensive chemical management policy, while others had policies that required refinement. Similarly, disparities existed in the adoption of Chemical Inventory Lists (CIL), ranging from companies relying on basic spreadsheets to those seamlessly integrating detailed CILs into their ERP systems, tailored to align with ZDHC templates. Consequently, each company faced its own set of challenges, and these were carefully recorded in individual reports.

On the other hand, exploring [the company case studies](#) provides valuable perspectives on integrating safer chemical management practices within the fashion value chain. These cases present a rich variety of experiences, providing a comprehensive understanding of the challenges faced. They also shed light on the effective strategies adopted by these companies. Several key lessons can be gathered from their experience:

Flexibility and adaptability: Tunisian companies have shown flexibility and adaptability to changing industry requirements by modifying existing systems to align with globally recognized standards, such as the ZDHC Guidelines.

Establishing an effective chemical management system: Implementing a robust chemical management system, from purchase to disposal, is becoming increasingly imperative for Tunisian companies. This includes developing and reviewing procedures, enforcing a purchasing policy aligned with industry guides, and integrating hazard evaluations as a crucial decision-making criterion in the procurement process.

Employee training: Tunisian companies have invested in the capability of employees through comprehensive training to ensure that employees possess the necessary knowledge and skills. This contributes to a safer and more environmentally friendly workplace.

Chemical supplier involvement: There has been noted resistance among chemical suppliers to have proper Material Safety Data Sheet (MSDS) for all their chemicals and convincing them to carry out the necessary tests for product registration on the ZDHC Platform due to the additional costs involved.

Chemical substitution: Companies face challenges in substituting hazardous chemicals and phasing them out based on risk analysis because substitution requires time, resources, and extra costs.

Wastewater testing: Some companies are unaware of the significance of wastewater testing to identify non-conformities and ensure proper wastewater discharge.

Documentation and records: Maintaining records of training sessions, chemical inventory lists, and Standard Operating Procedures (SOPs) is not well implemented within certain companies.

Certification and recognition: The companies are unaware of the significance of achieving certifications, such as the ZDHC Supplier to Zero assessment, and reaching the Foundational level despite that these certifications demonstrate a commitment to sustainable chemical management and providing tangible tools for implementing safer chemical management practices.

In conclusion, proactive engagement, continuous improvement, and adherence to industry standards are crucial for achieving safer and more sustainable chemical management practices in the fashion value chain.



4. Development of the National Roadmap

The National Roadmap for Tunisia's textile industry outlines a detailed and dynamic strategy focused on promoting sustainability and aligning with global standards. It provides strategic guidance to make the industry safer and more environmentally conscious. The primary purpose of the National Roadmap is to promote structured exchange among various stakeholders, including manufacturers, educational institutions, and organizations to outline the necessary steps, objectives, and timelines necessary for developing and implementing a strategic sustainability plan.

This development process is collaborative, incorporating diverse perspectives from different industry players. A key part of this process involves identifying and evaluating the challenges that inhibit the adoption of safer chemical management practices within the industry.

To tackle these challenges, the National Roadmap proposes a multifaceted approach. This includes creating targeted training and capacity-building programs designed to equip industry professionals with essential skills and knowledge for sustainable practices. In addition to educational efforts, the strategy involves active stakeholder engagement through collaborative efforts. It emphasizes forming partnerships with brands, chemical formulators, policymakers, and local communities to advance a collective commitment to sustainable chemical management.

By combining education, collaboration, and communication, the roadmap aims to transform Tunisia's textile industry into a model of sustainability and safety, compliant with international standards.

4.1 Stakeholders Involvement

The key players who have been consulted in drawing this roadmap and who can play a key role in the implementation of the roadmap are listed hereafter.

The Technical Center for Textiles (CETTEX), is a key institution dedicated to providing technical expertise, support, and resources to the textile industry. The center focuses on research, development, and innovation within the sector, helping companies adopt best practices, improve processes, and stay updated on technological advancements.

The Tunisian Federation of Textiles and Apparel (FTTH) is a federation in Tunisia that serves as the representative body for companies operating in the textile and garment sector. The federation plays an important role in promoting the interests of member companies, advocating for policies that support the industry's growth, and promoting collaboration among stakeholders. FTTH contributes to the development of the sector by facilitating dialogue, providing a platform for knowledge exchange, and addressing collective challenges faced by textile and garment producers in Tunisia.

The Zero Discharge of Hazardous Chemicals (ZDHC) is a program initiated by a group of global fashion brands and retailers to eliminate the use of hazardous chemicals in the textile, leather, and footwear value chain. The ZDHC program develops guidelines, tools, and trainings to drive the adoption of safer chemical management practices. This includes establishing protocols for wastewater discharge and chemical use, promoting more sustainable practices across supply chains, and working towards a vision where harmful chemicals are no longer released into the environment.

The United Nations Industrial Development Organization (UNIDO) is a specialized agency of the United Nations. UNIDO was established in 1966 by the UN General Assembly to assist countries in economic and industrial development. UNIDO advocates that inclusive and sustainable industrial development is the key driver for the successful integration of the economic, social and environmental dimensions, required to fully achieve sustainable development for the benefit of our future generations. UNIDO strengthens international trade norms and standards by assisting developing countries and transition economies in upgrading production and processing systems to enhance the quality of local products, through the adoption of improved technologies, and help them conform to the standards required by international markets. UNIDO builds capacities in both public and private institutions to formulate trade policies and strategies based on economic and statistical analysis.

4.2 Key challenges and implementation gaps

The current state of chemical management practices in the textile finishing sector in Tunisia reflects a positive beginning marked by capacity building activities and implementation projects. These initiatives, primarily led by the SwitchMed Program and UNIDO in collaboration with ZDHC Accredited Training Providers, have set a foundation for sustainable practices.

The key challenges in implementing sustainable chemical management practices in Tunisia textile finishing sector have been collected through consultation with the national key institutions (FTTH, CETTEX, etc.), ZDHC as well as by compiling observation by the L&S team consolidated during their work in companies (gap analysis and technical assistance support for implementing safer chemical management practices):

Adapting to industry dynamics: Companies face the challenge of keeping up with evolving rules and regulations, meeting the changing needs and desires of the market, and making the most of new technologies as they emerge. This requires a deep understanding of predicting how the market might change and using new technologies to improve how chemicals are managed. It's also about creating a workplace culture where flexibility and learning are valued, where everyone is ready to adjust and improve as needed.

Global standards integration: Meeting the challenge of aligning with International Chemical Management Standards. This involves harmonizing existing systems with globally recognized benchmarks, such as the ZDHC Guidelines. Companies must carefully review and adjust their procedures, procurement policies, and hazard evaluation protocols to ensure seamless alignment.

Limited brand engagement: The need for greater involvement of major international brands in promoting and implementing sustainable practices within their supply chains in Tunisia.

Capacity building of local institutions and centers: There's a clear need to improve the skills and knowledge of educators and trainers in Tunisian textile institutions to build in-house expertise.

Lack of accredited laboratories and service providers: The issue of the lack of accredited laboratories and service providers in Tunisia, particularly for wastewater testing, is a significant challenge. Tunisian facilities find themselves in a position where they must send their wastewater samples to foreign countries for testing certain parameters. This reliance on external entities can lead to increasing the time taken for results and adding logistical complexities and costs.

Workforce empowerment: Companies face challenges in ensuring that employees possess the necessary knowledge and skills to handle chemicals safely and responsibly. Overcoming these challenges requires a commitment to regular training sessions covering work instructions, safety measures, and proper use of Personal Protective Equipment (PPE).

Collaborative supplier relations: Addressing the challenge of convincing chemical suppliers to conduct required tests for product registration on the ZDHC platform is a critical aspect of ensuring transparency and compliance within the industry. Many companies have encountered difficulties in this endeavor. The primary obstacle lies in the suppliers' reluctance, driven by concerns about the added expenses linked to the required testing processes. The added expense involved in conducting tests for product registration can create a barrier to entry for chemical suppliers, potentially inhibiting their willingness to comply with ZDHC guidelines. The financial implications, coupled with a lack of chemical data sheets for certain products, further aggravate the challenge. To navigate this challenge, companies must adopt a strategic and collaborative approach. Clear communication is essential to transmit the significance of ZDHC compliance not only in meeting industry standards but also in promoting a responsible and sustainable supply chain. Companies can explore incentive-based programs, such as offering support for testing costs or extending preferred partnerships, to motivate suppliers to undertake the required tests. Companies should work collaboratively with suppliers to explore cost-effective testing solutions, share best practices, and collectively address the financial concerns associated with compliance.

Substitution dilemma: Effectively dealing with chemical substitution involves overcoming challenges within this complex process. Companies must invest time and resources to identify, compare, and select safer alternatives for chemicals of concern. While substitution is essential for reducing health and safety risks, it demands a strategic approach, including risk analysis and phased implementation. Balancing the need for efficacy with sustainability goals presents an ongoing challenge in the chemical substitution landscape.

Lack of accredited hazardous waste management collectors: The Tunisian textile finishing sector faces a critical challenge due to a lack of accredited waste management collectors. This gap, particularly in the specialized collection and handling of chemical waste and sludge from wastewater treatment plants, poses environmental risks. Proper disposal and treatment of these hazardous materials are essential to prevent pollution and protect ecosystems. Addressing this issue by establishing certified collectors skilled in managing such waste is crucial for promoting sustainable and eco-friendly practices in the industry.

Effective documentation management: Maintaining records, including training sessions, chemical inventories, and Standard Operating Procedures (SOPs), is fundamental for compliance. Companies face challenges related to documentation accuracy, accessibility, and traceability. Overcoming these challenges demands the establishment of robust document and record control procedures. Ensuring the availability and accuracy of documentation not only supports compliance but also provides valuable insights during audits and evaluations.

Continuous improvement struggle: The pursuit of continuous improvement in chemical management practices is a persistent challenge. Companies must actively monitor and evaluate the effectiveness of implemented changes, identifying areas for improvement, adjusting strategies, and ensuring ongoing compliance.

Certification commitment: Committing to sustainable chemical management certifications presents distinct challenges. Achieving certifications such as the ZDHC Supplier to Zero assessment requires a dedicated effort. Companies must align their practices with stringent criteria, undergo rigorous assessments, and showcase a commitment to sustainable practices.

Inadequate communication and public awareness: This issue arises when information about industry events, developments, or significant topics fails to reach all relevant stakeholders or the broader community effectively. This can stem from a variety of factors such as using ineffective communication channels or failing to engage the audience's interest and emphasize the relevance of the information.

Meeting these challenges not only validates a company's dedication to responsible chemical management but also strengthens relationships with stakeholders, fostering a positive industry reputation.



5. Roadmap

The National Roadmap is structured into a set of actions aimed at promoting sustainable practices and ensuring the responsible use of chemicals.

The National Roadmap is structured into a set of actions, related to seven key objectives, aimed at promoting sustainable practices and ensuring the responsible use of chemicals in the Tunisian textile sector.

The initial phase involves a detailed National Survey to assess existing practices, setting the groundwork for subsequent improvements. Following this, a key milestone is the Roundtable discussion with influential organizations and brands to secure commitment, aligning stakeholders towards shared goals within a specified timeframe. The National Roadmap emphasizes broad industry engagement, encouraging major brands to participate and facilitating knowledge exchange through seminars and events. Educational transformation is integral, involving the integration of sustainable practices into academic programs and the development of targeted training initiatives for institutions. The focal point of this initiative is the pursuit of ZDHC approval,

accompanied by training and capacity building programs for manufacturers and chemical suppliers.

Furthermore, the National Roadmap strategically incorporates economic incentives and financial support from the Tunisian Government to the chemical formulators and textile manufacturers to foster industry compliance and encourage them to adopt and implement the ZDHC Guidelines. A critical step involves the development of a chemical phase-out list targeting non-compliant substances in manufacturing processes to ensure their elimination. The Regulatory Framework holds significant importance as it seeks to modernize and elevate standards such as laws related to wastewater testing. This aims to establish and enforce regulations that prioritize the promotion of safer chemical management practices.

Overall, this structured roadmap aligns actions with clear objectives, providing a systematic and holistic approach towards advancing chemical management practices in Tunisia's textile sector.

The roadmap's actions are summarized in the table below:

| No. | Key Objectives | Actions |
|-----|---|---|
| 1 | Establish sector baseline | National Survey of the textile sector in Tunisia |
| 2 | Stakeholder engagement | Collaborations and partnerships |
| 3 | | Brand's engagement |
| 4 | Awareness raising | Mainstreaming chemical management in education |
| 5 | Capacity building | Train the Trainers Programme |
| 6 | | Training of the textile Manufacturers. |
| 7 | Capacity building Establish economic instruments | Economic incentives for chemical formulators |
| 8 | | Incentives and recognition for textile manufacturers. |
| 9 | | Approval of laboratories according to the ZDHC requirements |
| 10 | Prioritize phase out of hazardous chemicals | Hazardous chemical phase-out list for the MED region |
| 11 | Regulatory framework upgrade | Policy instruments |
| 12 | | Accreditation of hazardous waste collectors |

Table 6: List of identified actions within the national scaling up roadmap

5.1 Roadmap actions

1 – National survey of the textile sector in Tunisia

| | |
|-------------------------|--|
| Description | <p>A National Survey to be initiated by FTTH aiming at evaluating chemical management practices in Tunisian textile factories.</p> <ul style="list-style-type: none">• The survey should include at least 150 of the over 1380 textile companies in Tunisia, as representative samples for the assessment.• The survey should also include a significant representation of the 96 chemical manufacturers located in Tunisia |
| Objective | <p>Assess current chemical practices in Tunisia's textile and garment industry. Identify areas for improvement.</p> <p>Set a baseline for monitoring progress over time, in order to ensure that the industry adapts to global standards and consumer expectations.</p> |
| KPIs | <ul style="list-style-type: none">• Coverage Rate: Percentage of targeted companies (both textile and chemical manufacturers) that participate in the assessment. This KPI measures the extent of engagement in the survey.• Number of certifications or audits passed related to environmentally responsible chemical management.• Scores of the factories on the Supplier to Zero and selected sections of Higg FEM.• Gap analysis summary. |
| Key stakeholders | UNIDO, FTTH, Textile Manufacturers, Chemical formulators, ZDHC. |

2 – Collaborations and partnerships

| | |
|-------------------------|---|
| Description | <p>Workshops with UNIDO, ZDHC, European Delegation in Tunisia (EUD), European Bank for Reconstruction and Development (EBRD), FTTH, and CETTEX and other development partners: Events to be organized to discuss the roadmap and secure the commitment from different organizations.</p> <p>FTTH in collaboration with manufacturers can organize seminars and events to share best practices and success stories. This will allow stakeholders to exchange insights, challenges, and lessons learned in the journey towards sustainable chemical management.</p> <p>ZDHC manufacturers forum: The forum can facilitate focused discussions on ZDHC guidelines, compliance, and emerging trends, ensuring that manufacturers are well-informed and aligned with global best practices. Experts within the ZDHC network can provide specialized insights, further enriching the knowledge-sharing experience for participating manufacturers.</p> <p>Social media, corporate websites, and industry platforms can also be effectively used to showcase success stories, innovative practices, and case studies, promoting a sense of industry-wide achievement and progress.</p> |
| Objective | Secure commitment from UNIDO, ZDHC, FTTH, and CETTEX to continue the engagement to support the process of improving the chemical management practices in the textile sector in Tunisia to raise awareness within Tunisian industry and society about the benefits and business prospects associated with the adoption of safer chemical management practices. |
| KPIs | <ul style="list-style-type: none">• Specific commitment and funding amount• Number of manufacturers engaged.• Number of events. |
| Key stakeholders | FTTH, CETTEX, ZDHC, Textile Manufacturers, EUD, EBRD, SAC. |

3 – Brands’ Engagement

| | |
|-------------------------|--|
| Description | <p>Engage major brands: A dialogue to be initiated by ZDHC in collaboration with FTTH, with major brands operating in Tunisia, highlighting the benefits of adopting safer chemical practices and specifically promoting activities in Tunisia.</p> <p>Identify major brands operating in the Tunisian textile industry by utilizing industry databases, market reports, and collaboration with industry associations.</p> <p>Initiate a dialogue to introduce the initiative and emphasize the benefits of adopting safer chemical practices.</p> <p>Advocate for major brands to actively implement ZDHC Programs within their Tunisian operations. Encourage them to integrate sustainability criteria into their procurement processes, prioritizing suppliers with a strong commitment to safer chemical practices</p> <p>Collaborate with brands to design and conduct training sessions, ensuring that their Tunisian suppliers gain practical insights into implementing safer chemical practices.</p> <p>Request ZDHC to organize Manufacturing Forums for Tunisian manufacturers, creating a platform for sharing best practices. Additionally, collaborate with SAC to organize an event dedicated to sustainable practices within the textile industry.</p> <p>Engage with industry partners, governmental bodies, and organizations to secure funding for research projects focused on chemical prioritization and sustainable practices.</p> |
| Objective | Secure commitments from major brands within Tunisia’s textile and garment industry to adopt and implement ZDHC guidelines within a specified time-frame. |
| KPIs | <ul style="list-style-type: none">• Number of major Brands committing to implement specific supplier programs in Tunisia.• Number of manufacturers engaged.• Number of people participating in ZDHC trainings. |
| Key stakeholders | FTTH, ZDHC, Textile Manufacturers, SAC, Brands. |

4 – Mainstream chemical management in education

| | |
|-------------------------|--|
| Description | <p>FTTH collaborates with relevant ministries of Education and the Ministry of Higher Education to integrate sustainable practices into relevant educational programs. Collaborative content development: Collaborate with industry experts, sustainability consultants, and educational specialists to ensure the educational module aligns with current industry standards and addresses emerging challenges.</p> <p>Research opportunities: Encourage and support student-led research projects focused on advancing sustainable chemical management within the textile industry.</p> <p>Industry collaboration: Encourage collaboration between students and industry professionals, providing students with valuable exposure to real-world challenges and opportunities through internship programs.</p> |
| Objective | Raise awareness through educational programs. |
| KPIs | <ul style="list-style-type: none">• Integration of safer chemicals management in the educational program of Textile universities and Textile training centers. |
| Key stakeholders | FTTH, Ministries of Education and Higher Education, industry experts, sustainability consultants, and educational specialists.. |

5 – Train the Trainers programme

| | |
|-------------------------|--|
| Description | <p>Develop and conduct training for training bodies and local service providers who are interested in ZDHC accreditation, with support from ZDHC & its Accredited Training Providers in collaboration with FTTH.</p> <ul style="list-style-type: none">• Work closely with ZDHC and its network of Accredited Training Providers to organize a ‘Training of Trainers’ program for the trainers of the Tunisian training bodies. The objective is to build in-house expertise and ensure that the knowledge transfer is sustainable.• During this training, hands-on workshops and seminars should be organized, where participants can apply what they have learned in real-life scenarios. Include interactive sessions, group discussions, and problem-solving exercises. |
| Objective | <p>Strengthen the skills, knowledge, and capabilities of the existing Tunisian training bodies to enable them to achieve ZDHC accreditation for training provision.</p> |
| KPIs | <ul style="list-style-type: none">• Number of trainees who received the training and successfully attained approval. |
| Key stakeholders | <p>FTTH, ZDHC, Accredited Training Providers, Tunisian training bodies and laboratories.</p> |

6 – Training of the Textile manufacturers

| | |
|-------------------------|---|
| Description | <p>FTTH can in collaboration with ZDHC and Accredited Training Providers plan a national training program for textile and garment manufacturers to promote the adoption of safer chemicals practices and the implementation of ZDHC requirements.</p> <p>The national training program is an initiative designed to address specific skill gaps and knowledge requirements within the finishing textile sector on a nationwide scale. With a focus on interactive and practical learning, the program aims to equip participants with the essential skills and insights necessary for success in their roles. Developed through a collaborative effort involving FTTH, industry experts, and trainers, the program covers a structured curriculum aligned with national goals. The program should be tailored to the identified needs of the target audience. Participants can expect hands-on workshops, expert-led sessions, and a supportive learning environment.</p> |
| Objective | <p>Capacity building</p> |
| KPIs | <ul style="list-style-type: none">• Number of companies active on the ZDHC platform• Number of trainees who received the training and success rate. |
| Key stakeholders | <p>FTTH, ZDHC, Accredited Training Providers, Textile Manufacturers.</p> |

7 – Economic incentives for Chemical Formulators

| | |
|-------------------------|--|
| Description | FTTH in collaboration with ZDHC provides support to chemical formulators seeking accreditation for their products on the ZDHC platform. Recognizing the complexity and importance of this process, FTTH and ZDHC develop a systematic approach to guide formulators through every step of the accreditation journey. The selection of accredited laboratories capable of conducting the necessary tests and offer guidance on sample collection and preparation procedures to ensure accuracy. The goal is to ultimately contribute to safer and more sustainable chemical management practices within the industry. |
| Objective | Encourage the chemical formulators to adopt and implement ZDHC guidelines. |
| KPIs | <ul style="list-style-type: none">• Number of chemical products registered in the ZDHC Gateway. |
| Key stakeholders | Chemical formulators, ZDHC, FTTH. |

8 – Incentives and recognition for Textile manufacturers

| | |
|-------------------------|---|
| Description | Economic incentives and financial support from the Tunisian Government to encourage the textile manufacturers to adopt environmentally friendly practices. These incentives can take various forms, such as tax breaks, subsidies, grants, low-interest-rate loans, or rebates, designed to make sustainable choices financially attractive. For instance, companies that invest in green technologies or adhere to environmentally friendly manufacturing processes may receive tax reductions or subsidies, reducing their overall operational costs. |
| Objective | Encourage the manufacturers to adopt and implement ZDHC guidelines. |
| KPIs | <ul style="list-style-type: none">• The total value of investments leveraged. |
| Key stakeholders | Manufacturers, Relevant Ministries, FTTH, Brands. |

9 – Approval of local laboratories according to the ZDHC requirements

| | |
|-------------------------|--|
| Description | <ul style="list-style-type: none">• Economic incentives and financial support from the Tunisian Government to upgrade training facilities and laboratories to meet the standards of ZDHC accreditation.• This may include acquiring new equipment, software, or learning materials. |
| Objective | Facilitate the implementation of ZDHC requirements for the laboratories. |
| KPIs | <ul style="list-style-type: none">• Amount of funds allocated and utilized. |
| Key stakeholders | FTTH, Training Providers, Laboratories, Relevant ministries, and governmental agencies. |

10 – Hazardous chemicals phase-out list for the MED region.

| | |
|-------------------------|---|
| Description | <p>Development of a chemical phase-out list specific to Tunisia: ZDHC in collaboration with FTTH can work together to identify the chemicals that need to be phased out (chemicals that are MRSL non-compliant and are still used in the manufacturing process) and establish clear and achievable timelines for the phase-out process. The phase-out list can then be made available to all relevant parties.</p> <p>National survey carried out during the first phase of this Roadmap, detox.live and InCheck reports, can be used to ensure alignment with established standards such as REACH or ZDHC, promote substitution strategies.</p> <p>Utilize computational tools e.g.: https://www.epa.gov/comptox-tools</p> <p>Utilize the SIN list https://sinlist.chemsec.org/</p> |
| Objective | Ensure the elimination of the most harmful chemicals that are still used in the manufacturing process. |
| KPIs | <ul style="list-style-type: none">• Creation of a phase-out list.• Implementation rate of the phase-out list year by year. |
| Key stakeholders | ZDHC, Textiles companies registering in ZDHC, Chemical suppliers, FTTH, Tfs. |

11 – Policy instruments

| | |
|-------------------------|---|
| Description | <p>FTTH in collaboration with policymakers works together to establish and enforce regulations that promote safer chemical management.</p> <p>Upgrade the existing Decree n° 2018-315 du 26 mars 2018, establishing general discharge limit values and setting the limit values for effluent discharge into the receiving environment (specifically within the textile sector).</p> <p>Tunisia has implemented a regulatory framework that mandates the assessment of industrial wastewater discharge across different sectors notably for the textile industry. This specialized regulatory framework addresses the unique characteristics and potential environmental impacts associated with textile manufacturing processes.</p> <p>It is recommended to update and elevate the criteria for wastewater testing, making them more stringent and in harmony with global standards.</p> |
| Objective | Reinforce the regulatory Framework to promote safer chemicals management. |
| KPIs | <ul style="list-style-type: none">• Implementation of regulations/guidelines. |
| Key stakeholders | FTTH, Policymakers. |

12 – Accreditation of hazardous waste collectors

| | |
|-------------------------|--|
| Description | <p>Addressing the challenge of the shortage of accredited waste collectors for effective hazardous waste management necessitates the implementation of a detailed strategy aimed at establishing a resilient infrastructure. This involves:</p> <ul style="list-style-type: none">• Close collaboration with key stakeholders, such as governmental bodies, environmental agencies, and industry stakeholders, to devise a structured framework for accrediting waste collectors specialized in managing chemical waste and sludge derived from wastewater treatment plants.• The strategy includes initiating targeted awareness campaigns and providing specialized training to these collectors, focusing on the adoption of safe and environmentally responsible disposal methods.• Incentivizing the active involvement of waste management entities through regulatory support.• Promote public-private partnerships that can significantly increase the efficiency and coverage of waste collection systems. |
| Objective | Establish a robust waste management infrastructure. |
| KPIs | <ul style="list-style-type: none">• Number of accredited waste collectors. |
| Key stakeholders | Government authorities, relevant Ministries, chemical suppliers, textile and garment companies, waste collectors, UNIDO, and environmental agencies in Tunisia. |

5.2 Implementation Timeline

The roadmap's execution is structured into phases based on the urgency of the intervention. Nearly all the actions represent short-term priority initiatives spanning from 2024 to 2027. Meanwhile, some of these actions are anticipated

to extend into the period from 2027 to 2030. This extended timeframe aims to generate the necessary impact for the comprehensive transformation of the adoption of safer chemicals into a contemporary and effective system.

National Roadmap - Actions

| Action | Timeline |
|---|-----------|
| A National Survey initiated by FTTH aimed at evaluating chemical management practices in Tunisian textile factories. | 2025-2026 |
| Workshops with the purpose of discussing the roadmap and securing the commitment from these organizations. | 2025-2027 |
| Engage major brands: A dialogue to be initiated by ZDHC with major brands operating in Tunisia, highlighting the benefits of adopting safer chemical practices and specifically promoting activities in Tunisia. | 2024-2027 |
| Mainstream chemical management education: FTTH collaborates with relevant ministries of Education and Higher Education to integrate sustainable practices into relevant educational programs. | 2027-2030 |
| Develop and conduct trainings "Training for Trainers" for existing training bodies with support from ZDHC and its accredited training providers in collaboration with FTTH to reinforce their capacity. | 2024-2025 |
| Train the trainers program where ESITH-approved trainers provide comprehensive training for the training bodies and laboratories who are interested in ZDHC approval. | 2025-2027 |
| Training and capacity building for the manufacturers: FTTH can in collaboration with ZDHC and Accredited Training Providers plan a national training program for textile and garment manufacturers to promote the adoption of safer chemicals practices and the implementation of ZDHC requirements. | 2025-2027 |
| Empower chemical formulators with the resources and expertise needed to navigate the approval process successfully and have their products registered on the ZDHC Gateway. | 2025-2030 |
| Economic incentives and financial support from the Tunisian government for the chemical formulators and textile manufacturers. | 2027-2030 |
| Approval of laboratories according to the ZDHC requirements: financial support from the Tunisian government to upgrade training facilities and laboratories. | 2027-2030 |
| Development of a chemical phase-out list of chemicals that are MRSL non-compliant and are still used in the manufacturing process in Tunisia. | 2025-2030 |
| Regulatory Framework: FTTH in collaboration with policymakers work together to enforce existing regulations that promote safer chemical management. A proposed recommendation is to contemporize and elevate the criteria for wastewater testing, making them more stringent and in harmony with global standards. | 2027-2030 |
| Accreditation of hazardous waste collectors | 2025-2030 |

