

## Adopting safer chemical management in the fashion value chain

### Business case:

# Giza Spinning & Weaving Company, Egypt

## Context

As part of the regional EU-funded SwitchMed programme, the MED TEST III project supports industries in the Southern Mediterranean to improve both their environmental performance and competitive advantage. Together with the Zero Discharge of Hazardous Chemicals (ZDHC) Foundation, a mission-driven multi-stakeholder initiative for the textile, apparel, leather and footwear industry, the United Nations Industrial Development Organization (UNIDO) has undertaken pilot projects in Egypt, Morocco and Tunisia to demonstrate the way forward for phasing out hazardous chemicals in the textile industry's value chain.

This project aimed to demonstrate and document the business case for implementing a sustainable Chemical Management System (CMS) according to the ZDHC Guidelines in the textile-finishing sector. An initial training (2020-2021) on ZDHC Sustainable Chemical Management and ZDHC Wastewater Management for company staff targeted 37 production facilities in the three countries. This was followed by the launch of six industry pilot projects (2021-2022) that provided technical assistance to improve chemical and wastewater management systems in the production facilities. To expand the adoption of the ZDHC Guidelines throughout the textile-finishing sector of the region, additional 15 companies have received support through training and capacity-building actions.

## Company overview

### Main production processes:

Knitting, dyeing, printing, readymade garment and washing

**Number of employees:** 3,550

**Number of staff trained:** 13

Giza Spinning & Weaving Co. is a leading Egyptian Ready Made Garments exporter boasting fully integrated operations and a well-diversified portfolio of renowned international brands. The company is one of the biggest manufacturers and most trusted names in the textile sector in Egypt.

The company was established as a family business in 1979 by Mr. Mohamed Marzouk. Since then, it grown its operations organically by adding many internationally renowned brands to its customer portfolio and expanding across several facilities to include spinning, dyeing, knitting, printing, cutting, sewing, washing and finishing activities. Giza has also ventured into retailing activities in the local market, selling its products through a growing chain of 20 stores located across Egypt.

## Improving the chemical management system, policies and safety procedures

Initially, the project faced some starting challenges at Giza, despite a request from some brands that the company should participate in the ZDHC training and pilot activities offered by UNIDO. At the onset, the company struggled to assign their employees responsibilities or motivate them to embark on a new CMS. The initial delay resulted in a slow uptake of ZDHC requirements by the company, but with added support, the company is now on track to maintain continuous improvements in their CMS.

“

We at Giza decided to join the SwitchMed project to improve our environmental footprint, and to conserve the natural resources for future generations.

Fadel Marzouk, Chairman and CEO  
Giza Spinning & Weaving

”

Setting a chemical Purchasing Policy and Standard Operating Procedure (SOP) for purchasing and managing chemicals is the cornerstone for successful chemical management. Thanks to guidance from the project consultants, coupled with the commitment from top management, the chemical purchasing policy of Giza was aligned to the ZDHC Technical Industry Guide (TIG), and the company has communicated to their suppliers to only use chemical products that are in conformance with the ZDHC Manufacturing Restricted Substances List (MRSL). This is a list of chemicals restricted from intentional use by manufacturing facilities during the textile, apparel, leather and footwear production process.

While developing a Chemical Inventory List (CIL), Giza faced some challenges due to the broad spectrum of production processes they engage in, with different responsibilities and priorities among the company line managers. This situation, paired with the absence of professional software allowing multiple users to simultaneously edit the file, prolonged the preparation of a unified CIL. The resulting CIL in line with the ZDHC CIL template is currently being used systematically, relying on a server-based shared drive for easy accessibility.

Through the SwitchMed demonstration project, the company has prepared SOPs for the Wastewater and the Effluent Treatment Plant (ETP). The results have guided employees in applying the correct practices for maintaining the ETP, sampling, reviewing pollution parameters, and analyzing any deviation in those parameters to understand the root causes of deviations and take necessary corrective actions.



## Visit SwitchMed.eu

As part of the EU-funded SwitchMed programme, UNIDO demonstrates in the MED TEST III project pathways for industries in the Southern Mediterranean to become more resource efficient and to generate savings for improved competitiveness and environmental performance.

This publication has been produced with the financial assistance of the European Union (EU) and SwitchMed co-funding partners. The contents of this publication are the sole responsibility of UNIDO and can in no way be taken to reflect the views of the EU.

SwitchMed is co-funded by:

As for the safety procedures, the chemical storage was organized and secondary containers were introduced to reduce contamination and safety hazards. Safety Data Sheets (SDS) were prepared in the local language and are now correctly displayed. Also, relevant team members involved in chemicals “warehouse, transportation, users” received training from the company’s in-house Health and Safety department on topics related to Personal Protective Equipment (PPE), emergency plans, spill management and waste management.

### Relationship with chemical suppliers and registration of chemicals on the ZDHC Gateway

The chemicals used in Giza’s production were, at the beginning of the project, to some extent already registered on the ZDHC Gateway, a world-renowned database of safer chemistry for the textile, apparel, leather and footwear industry. During the pilot project, Giza contacted ten chemical suppliers to request data sheets of chemicals that were not yet registered on the ZDHC Gateway but were still in use in the facilities.

Throughout the project, five of the contacted chemical suppliers reacted to Giza’s request and started the registration process of their chemical products on the ZDHC Gateway. All chemical products that are on the ZDHC Gateway are in conformance with the ZDHC MRSL. To proof the MRSL conformance, ChemCheck reports for each chemical product were created on the Gateway. The ChemCheck is a report that can be generated for every MRSL conformant product that chemical suppliers publish on the ZDHC Gateway, it is used to assure customers that a chemical product meets the ZDHC MRSL requirements. For those suppliers that declined to follow the ZDHC requirements by registering the chemical products on the ZDHC Gateway, Giza defined a roadmap to substitute noncomplying chemicals.

Giza witnessed an improvement in their relationship and communication with chemical suppliers on the following:

- Clear communication concerning the chemical selection and purchase policy.
- Document review: Technical Data Sheets (TDS), Safety Data Sheets (SDS), ChemCheck report, positive list, other certifications such as Blue Sign, OekoTex.
- Moving the chemical suppliers to register their products on the ZDHC Gateway, assuring MRSL conformance.

By the end of the SwitchMed pilot project, the percentage of ZDHC-certified chemicals has slightly increased, with seven chemical products newly registered on the ZDHC Gateway.

Chemical products registered on the ZDHC Gateway		Chemicals suppliers on the ZDHC Gateway	
Total and %	Substituted	Total	New
105 – 66.9%	4	15	0

### Substitution of high-risk hazardous chemicals

Substitution is a best practice solution for reducing health and safety risks from both chemical use and the subsequent discharge. However, substituting chemicals requires time. Therefore, in the meantime other actions that can further assist in reducing risks should also be taken into account and implemented. These include, among other actions, better handling and storage conditions, reducing the quantities of chemicals stored in the factory, better monitoring of wastewater testing, and better use of PPE.

### For more information contact:



United Nations Industrial Development Organization  
 Ms. Ulvinur Müge Dolun  
 Division of Circular Economy and Environmental Protection  
 Circular Economy and Resource Efficiency Unit  
 Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria  
 E-mail: u.dolun@unido.org Web: www.unido.org

During the pilot, the Giza team performed a risk analysis using a methodology with the following formula:

$$\text{Risk} = \text{Gravity} \times \text{Frequency}$$

This formula was established to assign a hazardous level score to each of their chemicals. The gravity score confirms if the product is registered on the ZDHC Gateway and, if so, at which level. In contrast, the frequency score is evaluated based on the use frequency, the stored quantity and the quality of available PPE for each hazard.

The resulting priority list revealed several instances for substituting chemical products. Although the substitution process was initially problematic for Giza, mainly due to the higher cost for alternative chemicals, Giza has, to date, performed external tests on ten chemicals to confirm their compliance with MRSL, **substituted four hazardous chemicals, and phased out 23 chemicals** from their processes according to the adopted purchasing policy and the ZDHC MRSL Guidelines.

### Wastewater testing and conformity

Wastewater testing was not part of and not required during the pilot project. Still, it is an essential component of the ZDHC Guidelines and is often requested by international brands independent of their involvement with the ZDHC Foundation.

Giza conducted two ZDHC wastewater analyses and the first analysis detected some non-conformities. With the guidance from the pilot project consultants, corrective actions were defined, and after their implementation, a second analysis was conducted to confirm the results. Through the analysis, the importance of a systematic approach in defining the causes of deviation in wastewater parameters became evident. The root cause was identified as accumulated contamination in the ground equalization tank, leading to updated SOPs and increased cleaning frequency. Daily and weekly monitoring procedures were also introduced.

### Brand relationship

One important driver for companies to implement a CMS is their stakeholder relationships, particularly with their clients. Giza is a vertically integrated company with a track record on quality and sustainability, and produces for several international brands.

Giza has strengthened its relationships with existing clients by demonstrating its dedication to safer chemical management, per the ZDHC guidelines. Although the number of customers hasn’t significantly increased, the pilot project has helped maintain and improve the company’s business and competitive position. While there hasn’t been a significant increase in the number of customers, the pilot project has helped maintain and even improve the company’s business and competitive standing.



The continuous change in consumer demand has pushed us to go for a better and more sustainable process, reducing energy and water consumption and following best practices in industrial applications. Otherwise, we will lose business and customers.

Mohamed Elhindy  
 General Manager Technical & Quality



ZDHC Foundation  
 Oudezijds Voorburgwal 316-B  
 1012 GM Amsterdam, The Netherlands  
 E-mail: training@zdhc.org Web: www.roadmaptozero.com