



## COMPLIANCE WITH THE ENVIRONMENTAL ASPECTS OF THE APPAREL MANUFACTURERS IN THE REPUBLIC OF MOLDOVA

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**Abstract:** *compliance with environmental aspects is the first step to be undertaken by the apparel manufacturers to reduce the environmental footprint. In the Republic of Moldova, the apparel manufacturing industry is based on several international cooperation practices, which leads to increased levels of environmental pollution, mainly through the generated waste. The manufacturing processes and the applied technologies increase electricity consumption and generate significant amounts of waste. Obviously, many companies do not know the basic responsibilities and environmental obligations, nor do they know how they can be applied. Under these conditions, the development of proactive practices becomes a natural approach, especially to prevent sanctions for non-compliance with mandatory requirements. The article highlights the steps to be undertaken by the factories to ensure maximum compliance with mandatory requirements imposed by the authorities and the voluntary requirements selected autonomously, in respect to the environmental issues reflected by the legal provisions of the Republic of Moldova harmonized with the European Union law. The authors conducted a qualitative analysis of all requirements and reflected how several apparel factories from the Republic of Moldova apply these practices in their activities. The results of the analysis provide valuable and useful insights for application and will generate several beneficial effects, such as awareness and compliance with environmental issues, control of economic activity in terms of environmental impact, and confidence to create and provide sustainable value to stakeholders. The presented materials provide a framework through which apparel manufacturers in the Republic of Moldova will take responsibility for their contribution and impact on the ecosystem in which they operate.*

**Key words:** *requirements, obligations, environmental protection, clothing, analysis, pollution, waste.*

### 1. INTRODUCTION

The amount of clothes bought in the EU per person has increased by 40% in just a few decades, driven by a fall in prices and the increased speed with which fashion is delivered to consumers. Environmental impacts of EU consumption of textiles and clothing are difficult to estimate due to their diversity and the fact that they occur around the globe. Clothing accounts for between 2% and 10% of the environmental impact of EU consumption. This impact is often felt in third countries, as most production takes place abroad [1]. This is characteristic to the Republic of Moldova, the country where most garment factories provide services for the manufacture of clothing for famous European brands.

Apparel manufacturing implies a significant amount of energy consumption for sewing, gluing, welding, and seam taping, which has a direct impact on the environment. The cut-offs that



are left over after the patterns for the clothes have been cut out are also responsible for about 20% of the industry's fabric waste [1].

In this context, we consider that Moldovan apparel manufacturers should align to the United Nations sustainable development goals, and namely to the goal no. 12 “Responsible consumption and production”, to reduce the environmental impact generated as result of apparel manufacturing activities. One of the first steps to be taken in this direction includes the analysis of the environmental compliance obligations. According to the explanation offered by the ISO 14001:2015 standard “Environmental management systems. Requirements with guidance for use”, compliance obligations are legal requirements to which an organization is obliged to comply and other requirements to which an organization is obliged or chooses to comply [2]. The standard states that compliance obligations may arise from mandatory requirements, such as applicable legal and regulatory requirements, or voluntary commitments, such as organizational and sectoral standards, contractual relationships, codes of good practice, and agreements with community groups or non-governmental organizations.

The basic purpose of this article is to provide an analysis of the applicable legal and regulatory requirements, the voluntary commitments and those arising from the contractual clauses of the apparel factories in the Republic of Moldova with respect to environmental issues. Apparel factories should take a strong stand in protecting the environment and responding to changes in environmental conditions, while also responding to the socio-economic needs. To ensure a great contribution to the sustainability pillar, apparel factories must demonstrate an increased awareness towards environmental issues.

## 2. THE DETERMINED OBLIGATIONS OF THE APPAREL FACTORIES TOWARDS THE ENVIRONMENT

### 2.1 The apparel industry of the Republic of Moldova and its trends

Moldova's Apparel Industry is a key sector of the Moldovan economy, building on strong longstanding manufacturing traditions that date back more than 75 years ago.

It is among the most important, largest, and best-performing industry of the Moldova's manufacturing industry (5+ percent), table no.1.

*Table 1. Dynamics of the value of industrial production manufactured by types of activities*

Indicators	2015	2016	2017	2018	2019
Manufacture of wearing apparel, million MDL	1 973,3	2 257,2	2 528,4	2 653,4	2 628,7
Volume indices of industrial production, manufacture of apparel (previous year =100)	111,7	114,4	112,0	104,9	99,1
Manufacturing industry, million MDL	37 706,6	39 654,3	43 931,5	46 486,9	49 862,3
The share of Apparel Industry in total Manufacturing Industry, %	5,23	5,69	5,76	5,71	5,27

Source: National Bureau of Statistics of the Republic of Moldova [www.statistica.md](http://www.statistica.md)

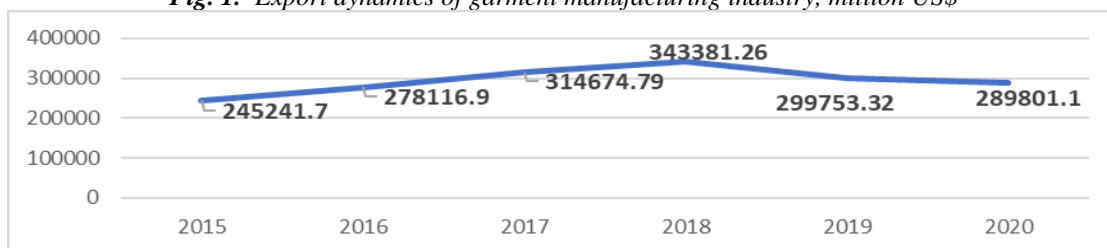
The apparel manufacturing industry has experienced a continuous increasing trend during the last five years (2015-2019) from 1,973.3 to 2,628.7 million MDL or approx. 1.3 times growth, mostly due to export of services provided to international clients.

As of 2019, this mature and women-centric industry accounts an average annual number of

employees of about 16,000 or about 20% of all manufacturing industry. Over 90 percent of the jobs are held by women. This makes light industry an important employment generator, especially for unqualified women with few employment options in rural areas.

Over the last five years, the industry experienced a continuous growth trend in exports of over 10% annually, except for 2019, when the industry registered an 11% decrease compared to the previous year, due to the reduction of orders from European customers. Figure 1.

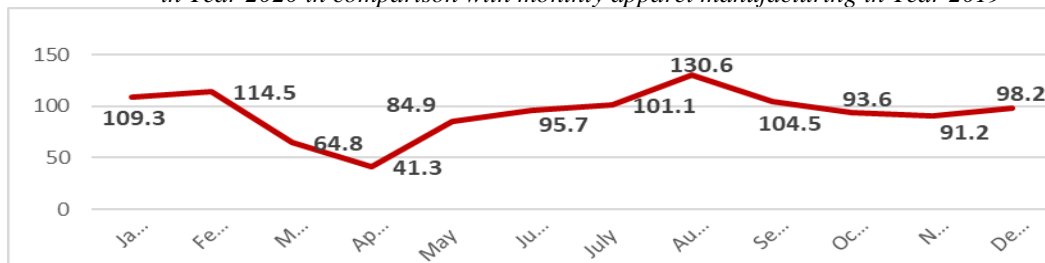
*Fig. 1. Export dynamics of garment manufacturing industry, million US\$*



Source: National Bureau of Statistics of the Republic of Moldova [www.statistica.md](http://www.statistica.md)

The Moldovan apparel manufacturing went through a difficult year in 2020 due to the COVID-19 pandemic, which led to a 12% decrease in exports in comparison with 2019. Since May, the industry has experienced a recovery trend. Figure 2.

*Fig. 2. Volume indices of monthly apparel manufacturing in Year 2020 in comparison with monthly apparel manufacturing in Year 2019*



Source: National Bureau of Statistics of the Republic of Moldova [www.statistica.md](http://www.statistica.md)

## 2.2 Determining compliance obligations.

The first step in ensuring compliance with environmental issues lies in the apparel factory's ability to determine and access these compliance obligations, as well as to understand their applicability.

Apparel factories can have two types of compliance obligations: mandatory legal requirements and voluntary commitments.

The mandatory legal requirements are provided by the authority responsible for implementing the state policy in the field of environmental protection. In the Republic of Moldova, this authority is the Environment Agency, subordinated to the Ministry of Agriculture, Regional Development and Environment. The Environment Agency ensures the implementation of the environmental legislation, harmonized with the European Union legislation established in the Association Agreement between the Republic of Moldova and the European Union, in the chapters "Environment", "Climate change" and "Trade and trade-related issues" (about 50 EU directives, regulations and decisions). The Agency is responsible for the implementation of new environmental tools such as: the creation, maintenance and management of the environmental impact assessment



system deriving from economic activities, the strategic environmental assessment system, the integrated environmental information system, the monitoring system of the quality of the environment, the monitoring system of natural resources, the integrated environmental authorization system, etc. [12]. The official website of the Environment Agency provides links to the current legislative and normative acts referring to environmental protection, which considerably simplifies the mechanism of searching and studying the legal provisions valid for an apparel factory.

To determine its voluntary commitments towards the environment, an apparel manufacturer may select:

- the international standards it intends to implement to reduce its environmental footprint. The category of these standards may include the standards of the ISO 14000 series, issued by the International Organization for Standardization;
- the contractual clauses from international customers regarding apparel manufacturing. This practice is characteristic for European customers who aim to manufacture wearing apparel under their own label in conditions that minimize the impact on the environment;
- the requirement of business partners to implement social audit, according to one of the amfori BSCI or SMETA methodologies, which includes elements of compliance with the environmental requirements.
- the formalization of the environmental commitment by approving the factory's Environmental Policy, in alignment with its purpose and context, including the nature, scale and environmental impacts of the factory's activities, products and services, in compliance with environmental protection requirements, including pollution prevention.

### 2.3 Analysis of the determined obligations' method of application

The next step in determining apparel manufacturers' degree of compliance with the environmental aspects includes assessing the validity and applicability of the selected compliance obligations. The results of the analysis of the applicability of the environmental obligations for the apparel factories provided by the legislation of the Republic of Moldova are presented in table no.2.

*Table 2. Analysis of the apparel factories' applicability of the environmental obligations*

No. d/o	Category of environmental obligations	Name of the environmental obligations	Basic provisions	Applicable	Non-applicable	No information	Comments on compliance with environmental obligations
1	2	3	4	5	6	7	8
1	Legislation of the Republic of Moldova	Law no. 1515-XII of June 16, 1993 about environmental protection	Description of the economic agents' obligations	X	<input type="checkbox"/>	<input type="checkbox"/>	Assessment of electricity consumption. Measurement of environmental pollution indicators
		Law no. 1540 of February 25, 1998 about payment for environmental pollution	Establishes how to calculate and make payments for pollutant emissions	X	<input type="checkbox"/>	<input type="checkbox"/>	EMPOLDEP Report (Pollutant Emissions, Discharges and Waste Disposal)

**Table 2** (continued)



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FASCICLE OF TEXTILES, LEATHERWORK**

1	2	3	4	5	6	7	8
		Law no. 209 of July 29, 2016 on waste	Article 12. Extended producer responsibility. Article 14. Reuse and recycling of waste	X	<input type="checkbox"/>	<input type="checkbox"/>	Contract with the economic agent that recycles industrial waste (paper, fabric pieces, polyethylene, etc.)
		Law no. 1422 of December 17, 1997 about protection of atmospheric air	Obligation to request and obtain authorization for the emission into the atmosphere of pollutants from fixed sources of pollution from the Environmental Agency	X	<input type="checkbox"/>	<input type="checkbox"/>	Authorization to emit pollutants into the atmosphere from fixed sources
2	Government Decisions	Government Decision no. 99 of 30.01.2018 about the approval of the List of Waste	Establishes the list of wastes. It is applied for information purposes.	X	<input type="checkbox"/>	<input type="checkbox"/>	Selecting codes for accumulated waste
		Government Decision no. 501 of 29.05.2018 on approval of the Instruction for waste records keeping and reporting of information on the waste management	Basic responsibilities: 1. Monthly chronological evidence of the quantity, nature and origin of the waste generated. 2. Annual reporting of the total amount of waste generated and their management	X	<input type="checkbox"/>	<input type="checkbox"/>	Reports made by each company
3	Standards	Sedex Members Ethical Trade Audit (SMETA) Measurement Criteria Version 6.1 May 2019	The Measurement Criteria covers the mandatory 2 pillars of Labour Standards and Health and Safety, as well as the additional options of Environment and Business Ethics.	X	<input type="checkbox"/>	<input type="checkbox"/>	Compliance with measurement Criteria by Clause

*Source: elaborated by the authors*

Obviously, the list of legal requirements, which become the environmental obligations for apparel factories represented in table no. 2 is not complete, but it can certainly be used to assess



compliance through their application.

Following the results obtained in the analysis of the applicability of environmental obligations, apparel factories will have to develop action plans to increase compliance with environmental obligations and reduce the environmental impact if their compliance with the environmental requirements is not backed up by evidence of application or has insufficient information for analysis.

### 3. CONCLUSIONS

The general conclusion on the development trends of the apparel manufacturing industry in the Republic of Moldova focus on its key role in the development of the national economy, both in terms of employment (especially for women) and its contribution to the country's export. To ensure the export of garments to EU countries, Moldovan apparel factories must align their production systems to the sustainable growth models adopted by the European Commission. The development of ecological technologies is one of the EU's main competitive advantages, which determines the relevance of promoting sustainable development of apparel manufacturers in Moldova.

The study conducted by the authors allowed a detailed analysis of the elements of the apparel manufacturers' business, who are largely involved in the provision of raw material processing services for European brands. Determining compliance obligations and assessing their degree of applicability will increase the apparel factories' capacities to create sustainable value.

The JRC 2014 study on the Environmental Improvement Potential of textiles recommends several approaches to reducing the environmental impacts of the processing and manufacturing phase, including reducing the consumption of chemicals. It also recommends integral knitting, where a whole garment is produced in one piece without the need for cutting and sewing (however, the gains in lifecycle impacts may be offset by the high energy use of the integral knitting machines). Some companies are experimenting with different cuts, computer-controlled tools for pattern making to use more of the fabric with fewer cut-offs, garments with no or fewer seams, bonding or gluing instead of sewing, etc.

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