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Construction materials and non-metallic mineral products sector analysis

Republic of Moldova



EU4GREEN RECOVERY EAST (700002623)

RECOVERY THROUGH A CIRCULAR ECONOMY AND POLLUTION REDUCTION IN THE EASTERN PARTNERSHIP COUNTRIES

Implementing partners:



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About this report

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About EU4Green Recovery East

The EU4Green Recovery East programme is a regional programme supporting the EU's Eastern Partnership countries on their path towards a greener, more resilient, and competitive economy.

With an EU-contribution of EUR 21.3 million (2025-2028), it builds on the results of a decade of EU support for better water management and green economy adoption and focuses on five key components:

- (1) promoting a circular economy,
- (2) ensuring water is managed as a critical resource,
- (3) advancing legal approximation with EU environmental legislation,
- (4) strengthening integration into EU-wide environmental cooperation and data exchange, and
- (5) fostering cross-border environmental cooperation.

The programme is implemented by five partners: Expertise France with the French International Office for Water (OiEau), OECD, UNECE, UNIDO, and the Environment Agency Austria (UBA), as the consortium coordinator.

<https://www.eu4greenrecoveryeast.eu>

Contents

List of abbreviations	5
1. Executive Summary.....	6
2. Introduction	8
2.1. Purpose	8
2.2. Main Objectives	8
2.3. Methodology	8
3. Core sector diagnosis.....	9
4. Priority product groups for circular economy intervention.....	13
4.1. Priority product group 1: CPC 375- Articles of concrete, cement and plaster.....	14
4.2. Priority product group 2: CPC 371-Glass and glass products	15
4.3. Other product groups.....	15
4.4. Trade exposure of the priority product groups	15
5. Circularity bottlenecks	16
6. Core circularity priorities	18
6.1. Main entry points for a realistic circular transition	20
6.2. Preliminary outlook for scaling methods.....	21
6.3. Gender inclusion in the sector.....	22
Annex 1. Value Chain Canvas for the construction materials and non-metallic mineral products sector.....	24
Annex 2. Direct Trade in Construction Materials, by Product (HS 6-digit), 2023–2025.....	30

List of abbreviations

B2B – Business-to-Business

BIM – Building Information Modelling

CAEM – Classification of Economic Activities of Moldova

CBAM – Carbon Border Adjustment Mechanism

CDM – Construction Demolition Material

CDW – Construction and Demolition Waste

CE – Circular Economy

CO₂ – Carbon Dioxide

CPC – Central Product Classification

DfD – Design for Disassembly

DIY – Do-It-Yourself

EPR – Extended Producer Responsibility

EU – European Union

EU ETS – European Union Emissions Trading System

GOST – State Standard (Gosudarstvennyy Standart)

GPP – Green Public Procurement

HS – Harmonized System (trade classification)

LC3 – Limestone Calcined Clay Cement

MDL – Moldovan Leu

NBS – National Bureau of Statistics

R&D – Research and Development

RDF – Refuse-Derived Fuel

SME – Small and Medium-sized Enterprise

UNIDO – United Nations Industrial Development Organization

USD – United States Dollar

UTM – Technical University of Moldova

VAT – Value Added Tax

VET – Vocational Education and Training

1. Executive Summary

This report was developed to provide the evidence base for Component 1 of the EU4Green Recovery East (EU4GRE) Programme "Promote Circular Economy & Resource Efficiency" in the Republic of Moldova.¹ The construction materials and non-metallic mineral products sector was identified as one of Moldova's priority sectors for circular economy interventions based on the sector screening. Its selection reflects its economic relevance, high material and energy intensity, significant emissions profile, and strong potential to substitute virgin mineral resources with recovered secondary materials.

CORE CIRCULAR ECONOMY BOTTLENECK — The construction materials sector has limited access to quality-assured secondary mineral inputs: construction and demolition waste is poorly traced and recovered, while missing end-of-waste criteria for recycled aggregates restrict their use in new construction materials and their market uptake.

The sector remains an important and expanding component of Moldova's industrial economy. In 2025, Manufacture of other non-metallic mineral products comprised 322 enterprises and generated approximately MDL 8.76 billion in manufactured output, up from around MDL 7.66 billion in 2024 and representing approximately 9.2% of total industrial output. Growth is particularly visible in concrete-based products, with the production value of articles of concrete, cement and plaster increasing by around one-third in 2025, reinforcing this segment as an important entry point for circular economy intervention². The sector combines a relatively small number of large cement and glass producers with a much broader network of companies manufacturing concrete products, prefabricated elements and other mineral-based construction materials.

At the same time, this sector is resource, energy and carbon-intensive, accounting for a substantial share of Moldova's industrial energy consumption and industrial-process greenhouse gas emissions, with cement production as the dominant source. Its continued dependence on primary mineral resources means that circularity is directly linked not only to waste reduction, but also to resource efficiency, industrial decarbonisation and competitiveness.

The sector's circularity performance must be assessed beyond production data, particularly through construction and demolition waste (CDW) management. Only 3,539.61 tonnes of CDW were officially reported in 2024³, a very low level relative to the scale of construction activity, indicating major gaps in waste traceability, separate collection and selective demolition. These gaps limit the recovery of concrete, masonry, glass, gypsum and other materials as secondary resources. The issue is especially relevant for repair and renovation activities, which together accounted for 49% of construction works in 2025⁴. This makes them a key near-term intervention point, yet pre-demolition audits, selective dismantling and systematic material traceability are not standard practice.

¹ <https://www.eu4greenrecoveryeast.eu/>

² https://statbank.statistica.md/pxweb/pxweb/en/40%20Statistica%20economica/40%20Statistica%20economica_14%20IND_IND020/?rxid=9a62a0d7-86c4-45da-b7e4-fecc26003802

³ <https://www.undp.org/ro/moldova/publications/studiu-privind-deseurile-emergente-republica-moldova>

⁴ <https://statistica.md/>

To translate the sector-level diagnosis into a more focused intervention pathway, the analysis identified articles of concrete, cement and plaster and glass and glass products as the most relevant value chains for deeper assessment, given their economic relevance, circularity potential and direct opportunities to increase the use of recycled aggregates, strengthen secondary material recovery and improve overall material efficiency.

The priority is therefore to strengthen the integration of secondary mineral materials into domestic manufacturing. This requires more reliable and quality-assured supply of recovered materials from construction, demolition and renovation activities, supported by improved CDW traceability and separate recovery, pre-demolition and pre-renovation audits, end-of-waste criteria and quality standards for recycled inputs. On the demand side, Green Public Procurement, product standards and greater uptake of recycled content can help create stable markets for secondary materials in concrete, cement, plaster and glass production. Together, these measures can reduce dependence on virgin mineral resources, improve material efficiency and support the sector's industrial decarbonisation and competitiveness.

2. Introduction

2.1. Purpose

This report is developed as a foundational document to support Component 1 of the [EU4Green Recovery East](#) (EU4GRE) Programme “Promote Circular Economy & Resource Efficiency” in the Republic of Moldova. It aims to provide a comprehensive analysis of the construction materials and non-metallic mineral products sector, identifying the product groups and value chains with the highest potential for circular economy (CE) intervention. By establishing a robust, evidence-based understanding of the sector’s economic profile, material flows, trade dependence and circularity bottlenecks, the report serves as a critical reference point for guiding technical assistance, investment support and policy measures that help Moldovan businesses adopt circular models, reduce production costs and decrease reliance on imports. The findings herein will feed into the further activities of Component 1 – value chain mapping, pilot project design and policy recommendations ensuring that future interventions are grounded in robust evidence and tailored to the national context.

2.2. Main Objectives

The primary objective of this report is to map and evaluate the construction materials and non-metallic mineral products sector in the Republic of Moldova in order to identify where circular economy intervention can deliver the greatest impact. Specifically, the report seeks to:

- map and evaluate the current status of the within the construction sector – market size, enterprise structure, production and trade flows – building on official statistics and trade data;
- identify the priority product groups with the highest circular economy potential through a CPC-based screening (CPC 375 – articles of concrete, cement and plaster, CPC 371 – glass and glass products, CPC 374 – plaster, lime and cement, CPC 379/376 – other non-metallic mineral products);
- identify the main circularity bottlenecks and define core circularity priorities with concrete entry points and scaling methods relevant to Moldovan market conditions;
- support the objectives of Component 1 – helping businesses adopt circular models, create new jobs, reduce costs and decrease reliance on imports – by providing a decision-ready evidence base for pilot interventions and policy recommendations.

2.3. Methodology

The analysis draws on the evidence base developed under UNIDO’s framework within EU4Green Recovery East. The selection of priority sectors for the circular economy was carried out through a participatory Multi-Criteria Decision Analysis of the national economic sectors, and the construction materials sector was identified and validated as a national priority together with key sector actors and the Ministry of Environment and the Ministry of Economic Development and

Digitalisation⁵. Building on this sector-level selection, a detailed product-level analysis was conducted for each priority sector, applying the UN Central Product Classification (CPC) methodology⁶ to identify the product groups with the highest circular economy potential. The analysis was complemented by fieldwork, including 13 survey responses and semi-structured interviews with economic operators from the sector. The preliminary results were examined in a working session⁷ held in an interactive circular canvas format, with the participation of sector stakeholders, to jointly analyse and validate the value chain canvas and the proposed circular economy interventions. Building on this evidence, the present report provides the full sector-specific analysis: the structural diagnosis, the priority product groups, the circularity bottlenecks, and the core circularity priorities with entry points and scaling methods, supplemented by the value chain canvas and trade annexes.

3. Core sector diagnosis

Moldova's construction materials manufacturing sector (CAEM C23 – Manufacture of other non-metallic mineral products) is a key component of the country's industrial economy, supplying the concrete, cement, glass and other mineral-based products used throughout the construction value chain. Its relevance for the circular economy stems both from the resource-intensive nature of its production processes and from its close link to downstream construction and demolition activity, which drives demand for its products and generates the waste stream that offers the greatest potential for material recovery.

In 2025, CAEM C23 comprised 322 enterprises and generated approximately MDL 8.76 billion in production value, representing around 9.2% of total industrial output. The sector combines a relatively small number of large cement and glass producers with a much broader network of companies manufacturing concrete products, prefabricated elements and other mineral-based construction materials.

Table 1. CAEM C23 Production Value by Sub-Activity (2025)

Name	CAEM-2 Code	Comp anies	Value of manufactured production in current prices of the corresponding year, thousand MDL	Share of total industry, %
Manufacture of other non-metallic mineral products	C2300	322	8.762.063	9,2
Manufacture of glass and glass articles	C2310	44	2.366.913	2,5
Processing and shaping of flat glass	C2312	21	392.892	0,4
Manufacture of glass articles	C2313	13	1.700.239	1,8
Manufacture of glass fibres	C2314	3	221.656	0,2
Manufacture of technical glassware	C2319	7	52.127	0,1
Manufacture of clay building materials	C2330	4	119.605	0,1
Manufacture of other ceramic and porcelain articles	C2340	4	1.563	0,0

⁵ <https://www.eu4greenrecoveryeast.eu/index.php/news-opportunities-eu4greenrecoveryeast/78-moldova-identifies-priority-regions-and-sectors-to-advance-circular-economy-activities-with-eu-support>

⁶ <https://unstats.un.org/unsd/classifications/Econ/cpc>

⁷ <https://e-circular.org/economie-circulara/cartografierea-lanturilor-valorice-pentru-accelerarea-tranzitiei-moldovei-catre-economia-circulara-in-cadrul-programului-eu4green-recovery-east/>

Manufacture of ceramic articles for household and ornamental use	C2341	4	1.563	0,0
Manufacture of cement, lime and plaster	C2350	14	1.636.724	1,7
Manufacture of cement	C2351	6	1.110.034	1,2
Manufacture of lime and plaster	C2352	8	526.691	0,6
Manufacture of articles of concrete, cement and plaster	C2360	179	3.343.911	3,5
Manufacture of concrete products for construction	C2361	94	1.101.746	1,2
Manufacture of ready-mixed concrete	C2363	48	1.993.757	2,1
Manufacture of mortar	C2364	5	46.502	0,1
Manufacture of other articles of concrete, cement and plaster	C2369	28	165.613	0,2
Cutting, shaping and finishing of stone	C2370	53	95.555	0,1
Manufacture of other non-metallic mineral products n.e.c.	C2390	22	1.185.609	1,3
Manufacture of other non-metallic mineral products, n.e.c.	C2399	22	1.185.609	1,3

Source: National Bureau of Statistics, Main industrial indicators by type of economic activity (including secondary industrial activities of non-industrial sectors), 2025.

Note: The Share of total industry column should not be summed across rows. Parent 3-digit CAEM groups (C231, C235, C236, C239) already include their listed 4-digit sub-activities; C239 has only one sub-activity (C2399), which is therefore identical to the group total.

Table 2. Value of industrial production by economic activity, CAEM C23 groups, 2022–2025 (thousand MDL)

	2022	2023	2024	2025
C23 Manufacture of other non-metallic mineral products	7.623.894	7.806.381	7.656.399	8.762.063
C231 Manufacture of glass and glass articles	2.584.656	3.106.254	2.557.986	2.366.913
C233 Manufacture of clay building materials	256.501	172.919	183.764	119.605
C234 Manufacture of other ceramic and porcelain articles	1.202	1.382	1.242	1.563
C235 Manufacture of cement, lime and plaster	1.488.757	1.322.892	1.569.763	1.636.724
C236 Manufacture of articles of concrete, cement and plaster	2.209.459	2.090.708	2.513.976	3.343.911
C237 Cutting, shaping and finishing of stone	113.945	115.213	137.235	95.555
C239 Manufacture of other non-metallic mineral products n.e.c.	968.644	996.063	689.735	1.185.609

Source: National Bureau of Statistics of the Republic of Moldova, Industrial Production Statistics 2022–2025.

This manufacturing base operates within a wider construction economy that is itself a key driver of Moldova's economic development. According to the National Bureau of Statistics, in 2024, 3,536 enterprises had construction (CAEM F41–F43) as their main activity, employing on average 28,885 people. In 2024, the total value of construction works and services reached MDL 28,248.3 million, of which MDL 12,313.3 million (43.6%) was construction of buildings (F41), MDL 7,920.2 million (28.0%) was civil engineering (F42), and MDL 8,014.8 million (28.4%) was specialised construction activities (F43). This sustained level of building activity confirms continued demand for the materials produced under C23 and, at the end of the building lifecycle, generates the construction and demolition waste stream that represents the sector's principal circularity opportunity (discussed in Section 3).

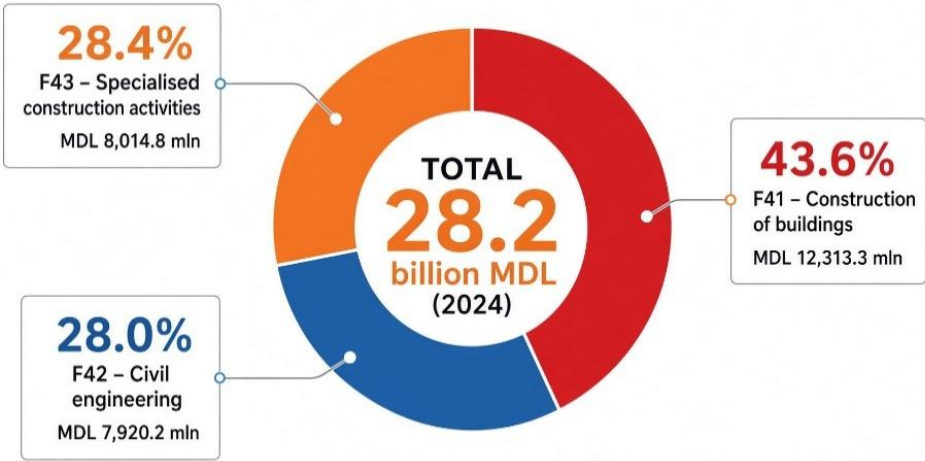


Figure 1. Distribution of construction activity value by CAEM division, 2024
Source: National Bureau of Statistics, Annual Structural Survey of Enterprises, 2024.

The structure of construction works provides an additional indication of circularity opportunities for construction materials and non-metallic mineral products. In 2025, new construction accounted for 48.5% of the value of construction works, while capital repairs (22.9%) and maintenance and current repairs (26.1%) together represented almost half of total activity⁸. This substantial repair and renovation segment creates recurring demand for construction materials, but also generates recoverable flows of concrete, masonry, glass, gypsum and other mineral-based materials. It therefore represents an important entry point for circular economy interventions, particularly through selective dismantling, improved segregation and traceability of construction and demolition waste, reuse of components, and the recovery of mineral fractions as quality-assured secondary inputs for domestic manufacturing.

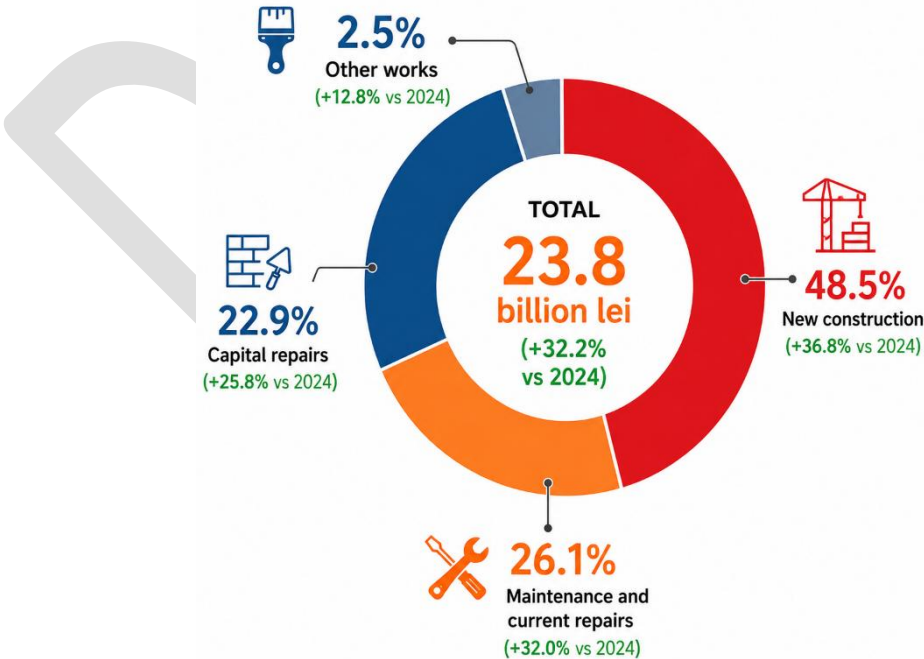


Figure 2. Construction Works Executed by Type of Work, 2025
Source: National Bureau of Statistics, Construction works carried out.

⁸ https://statistica.gov.md/ro/lucrari-de-constructii-executate-9803_60313.html

In 2022, gravel, pebbles and flint represented the largest material flow used in construction (3.26 million tonnes), followed by sand (2.09 million tonnes) and building stone (1.67 million tonnes). By 2025, gravel, pebbles and flint had risen to 3.96 million tonnes (+21.5% vs 2022, with +16.3% in the most recent year alone) and sand stood at 2.46 million tonnes (+17.5% vs 2022, though down from a 2023 peak of 2.60 million tonnes); building stone fell to 1.35 million tonnes. These figures underline the importance of improving resource efficiency and increasing the use of secondary construction materials to reduce pressure on virgin resources and support circular material flows.

Table 3. Production of the main industrial products used in construction, thousand tonnes (2021–2025)

Product	2021	2022	2023	2024	2025
Gravel, pebbles and flint (total)	3896.9	3259.8	3268.1	3403.2	3958.9
Sand (total)	2108.9	2089.7	2599.7	2549.6	2455.9
Slag and industrial waste mixtures	2262.0	1513.2	1635.0	2227.5	1986.9
Other building stone	1242.4	1671.2	1040.1	1053.6	1352.7
Stone granules, chips and dust	1652.9	1245.9	857.4	810.4	1026.7
Crushed stone for concrete, roads and rail ballast	524.6	503.4	477.8	473.7	491.6
Other clays	—	—	90.6	169.0	173.7
Limestone and other calcareous stone	104.4	101.6	50.5	54.7	48.9
Sandstone	80.3	2.2	3.3	1.6	44.5

Source: National Bureau of Statistics, *Production of main industrial products in physical terms, 2019–2025*.

Note: Reinforcing steel bars (rebar) are produced at the Moldova Steel Works in Rîbnița, in the Transnistrian region. However, production data from economic operators located in this region are not currently covered by the statistical data collected by the National Bureau of Statistics. Consequently, rebar production could not be reflected in Table 3 due to the lack of comparable official national data.

Moldova's reliance on imported building materials is confirmed by direct trade data. Across the main construction-related product categories tracked in customs statistics — glass, ceramics, cement, plaster, concrete articles, construction stone, and related plastic, wood and metal building components — imports reached USD 302.7 million in 2025 against exports of just USD 38.2 million, a trade deficit of USD 264.5 million that has widened by 61% since 2023 (Table 4). This growing import dependency reinforces the strategic case, developed throughout this report, for expanding domestic production of secondary and recycled construction materials.

Table 4. Direct trade in construction materials, Republic of Moldova, 2023–2025 (thousand USD)

	2023	2024	2025	Change 2023–2025
Export (thousand USD)	39,727.6	36,638.4	38,197.2	-3.9%
Import (thousand USD)	204,255.0	251,820.7	302,657.8	+48.2%
Trade balance (thousand USD)	-164,527.5	-215,182.3	-264,460.6	+60.8%

Source: authors' calculations based on direct construction-materials trade statistics (HS 6-digit, UN Comtrade), 2023–2025

Beyond material flows, C23 is also one of the most energy- and emissions-intensive segments of Moldova's industrial base. It accounted for 45.5% of national final industrial energy consumption in 2024 (3,962 TJ), the single largest share among all industrial sectors, ahead of food and beverages (35.0%) and 54.6% of national IPPU (industrial processes and product use) greenhouse gas emissions, with cement production identified as the dominant source category. This resource and emissions profile reinforces the sector's strategic relevance for decarbonisation and circular economy interventions alongside its economic weight. Production statistics further illustrate the sector's dependence on primary mineral resources. These figures underline the importance of improving resource efficiency and increasing the use of secondary construction materials to reduce pressure on virgin resources and support circular material flows.

This sector profile has at least two direct implications for circular economy policy:

1. **Resource efficiency at the production stage.** The manufacturing sector's strong dependence on virgin mineral resources, combined with its outsized share of industrial energy use and IPPU emissions, highlights the need to improve resource efficiency, increase the use of secondary raw materials, and reduce material losses within C23 production processes.
2. **Whole-lifecycle circularity.** The scale of downstream construction activity and material consumption reinforces the importance of strengthening circular approaches across the entire building lifecycle, including sustainable design, low-carbon production, renovation, selective demolition and the recovery of construction and demolition waste, which in turn feeds secondary materials back into C23 production.

4. Priority product groups for circular economy intervention

To move from a sectoral to a value-chain level of analysis, the Central Product Classification (CPC) codes within CAEM C23 were screened against three quantitative criteria: production value (2024), number of active enterprises, and availability of a consistent product-level series for 2020–2024, combined with a qualitative assessment of circular economy potential, strategic relevance and feasibility of enterprise-level data collection. Four CPC codes were retained for in-depth analysis: **CPC 375** (concrete, cement and plaster products), **CPC 371** (glass and glass products), **CPC 374** (cement, lime and plaster), and **CPC 379/376** (other non-metallic mineral products and construction stone). The screening was conducted using the latest consistent product-level evidence available at the time of the assessment; Table 5 is updated to present the corresponding 2024–2025 sector profile.

It is worth noting that this value-chain screening covers exclusively the C23 manufacturing base. The downstream construction economy (CAEM F41-F43) as the source of demand for these materials and of the construction and demolition waste stream was not itself subject to CPC-level screening, and none of the four value chains analysed below represent construction activity as such.

Table 5. Quantitative Profile of CPC Codes within CAEM C23 (2024-2025)

CPC	Product/service	CAEM	Companies 2025	Value 2024 MDL mln	Value 2025 MDL mln	Share 2024 %	Share 2025 %
375	Articles of concrete, cement and plaster	C2360	179	2,514.0	3,343.9	2.92	3.52
371	Glass and glass products	C2310	44	2,558.0	2,366.9	2.98	2.49
374	Plaster, lime and cement	C2350	14	1,569.8	1,636.7	1.83	1.72
379	Other non-metallic mineral products	C2390	22	689.7	1,185.6	0.80	1.25
376	Cutting, shaping and finishing of stone	C2370	53	137.2	95.6	0.16	0.10

Source: authors' calculations based on National Bureau of Statistics, main industrial indicators by type of economic activity

4.1. Priority product group 1: CPC 375- Articles of concrete, cement and plaster

CPC 375 – Articles of concrete, cement and plaster represents the largest and most diversified construction materials value chain in the Republic of Moldova in terms of enterprise base, while also offering the greatest potential for circular economy interventions. In 2025, the corresponding CAEM C2360 activity generated approximately MDL 3.34 billion in production value and comprised 179 enterprises, making it the strongest entry point for improving resource efficiency and circularity within the construction sector.⁹

The value chain covers the manufacture of ready-mixed concrete, precast concrete elements, mortar and a wide range of concrete, cement and plaster products used in residential, commercial and infrastructure projects. Production data indicate continued growth in ready-mixed concrete, increasing from approximately 1.89 million tonnes in 2020 to 2.32 million tonnes in 2024, reflecting sustained demand for construction activities. In contrast, the production of prefabricated concrete elements declined during the same period, suggesting changes in market demand and production patterns.¹⁰

From a circular economy perspective, CPC 375 offers the greatest opportunity to retain material value within the construction sector. The main material flows include natural aggregates, cement, water and chemical additives, while the principal waste streams consist of returned concrete, wash-water sludge, dust and construction and demolition waste. Increasing the use of recycled aggregates, recovering process water, reducing material losses during production and expanding prefabrication can substantially improve resource efficiency while reducing the consumption of virgin raw materials.

The strategic importance of CPC 375 extends beyond manufacturing. It is directly connected to the management of construction and demolition waste, making it the key value chain for introducing selective demolition, recycled aggregate certification, quality standards for secondary materials and Green Public Procurement. Together, these measures can improve material circularity, reduce embodied carbon and strengthen the competitiveness of Moldova's construction materials industry while supporting the transition towards a more resource-efficient built environment.

⁹ statistica.md

¹⁰ statistica.md

4.2. Priority product group 2: CPC 371-Glass and glass products

CPC 371 – Glass and glass products also represent high economic significance and strong circular economy potential. In 2025, the corresponding CAEM C2310 activity generated approximately MDL 2.37 billion in production value and comprised 44 enterprises. Although the sector has a more concentrated industrial structure than CPC 375, its strategic importance is reinforced by the high value of production and the energy-intensive nature of glass manufacturing.

The value chain includes the manufacture of flat glass, processed glass, glass products, glass fibres and glass packaging. Production data show a significant increase in the manufacture of glass bottles and flasks between 2020 and 2024, while insulating glass production has fluctuated, reflecting changes in construction activity and market demand. These trends demonstrate that the value chain serves both the construction sector and other manufacturing industries, creating additional opportunities for cross-sectoral circularity.

From a circular economy perspective, CPC 371 offers considerable opportunities to reduce resource consumption and greenhouse gas emissions through increased use of recycled glass (cullet) as a secondary raw material. Greater recovery of flat glass from demolition activities, improved separate collection systems and higher-quality recycling can reduce energy demand during glass production while lowering dependence on virgin raw materials. Future interventions should therefore strengthen glass collection and recycling systems, improve end-of-life management for insulating glass, and encourage the integration of recycled glass into new production processes.

4.3. Other product groups

CPC 374 – Plaster, lime and cement represent one of the most carbon- and energy-intensive segments of the construction materials industry. With approximately MDL 1.64 billion in production value and 14 enterprises in 2025, the value chain is strategically important because cement is the principal binder used throughout the construction sector. Circular interventions should focus on increasing energy efficiency, promoting the use of alternative fuels, reducing clinker content through supplementary cementitious materials, recovering mineral waste and supporting quarry rehabilitation. These measures can significantly reduce the carbon footprint of construction materials while improving resource productivity.

CPC 379/376 – other non-metallic mineral products and stone complement the priority value chains by supporting the sustainable use of mineral resources and stone. Although their economic contribution is smaller, these activities provide opportunities to improve resource efficiency through better utilisation of mineral by-products, increased recovery of construction materials and wider application of secondary raw materials in construction products. Together, these value chains strengthen the resilience of Moldova's construction materials industry and complement the interventions proposed for concrete, cement and glass production.

4.4. Trade exposure of the priority product groups

Direct trade data confirm that Moldova is a net importer across all five CPC codes underlying the four priority product groups analysed in this section (CPC 379 and 376 are treated jointly as one product group above, but are reported separately here since customs data are only available at individual CPC/HS level), and the deficit is widening rather than stabilising. CPC 374 (cement, lime and plaster) shows the largest deficit among the five codes in 2025 (USD

21.1 million) and the sharpest deterioration: exports fell by more than half between 2023 and 2025 (from USD 15.9 million to USD 7.0 million) while imports more than doubled (from USD 13.7 million to USD 28.0 million), turning a broadly balanced position into a substantial deficit. CPC 379 (mineral wool and asphalt-based construction articles) follows closely, with a deficit of USD 20.6 million in 2025 that has grown steadily since 2023. Table 6 summarises the trend for all five codes; the full product-level breakdown is provided in Annex 2.

This import exposure strengthens the economic case for the circular interventions proposed in Section 6: every tonne of recycled aggregate, cullet or secondary binder that displaces an equivalent import also reduces Moldova's external trade deficit.

Table 6. Net trade position of the priority CPC groups, 2023–2025 (thousand USD)

CPC group	Exp. 2023	Exp. 2024	Exp. 2025	Imp. 2023	Imp. 2024	Imp. 2025	Net 2025
CPC 375 – Concrete, cement and plaster articles	2,742.9	2,972.8	6,328.7	18,079.7	18,299.5	21,527.9	-15,199.2
CPC 371 – Glass and glass products	284.2	91.9	114.7	13,180.4	14,612.2	17,584.0	-17,469.3
CPC 374 – Plaster, lime and cement	15,850.8	11,509.5	6,952.7	13,685.1	12,811.0	28,011.2	-21,058.5
CPC 379 – Other non-metallic mineral products, including mineral wool and asphalt-based construction articles	126.0	35.2	67.9	13,760.2	18,166.3	20,664.3	-20,596.4
CPC 376 – Construction stone	424.5	354.6	509.2	7,067.1	8,241.2	8,644.8	-8,135.6

Source: authors' calculations based on direct construction-materials trade statistics (HS 6-digit), 2023–2025; product-to-CPC correspondence indicative, mapped by the authors (see Annex 2). Exp. = Export, Imp. = Import, thousand USD.

5. Circularity bottlenecks

The main circularity challenge for the Manufacture of other non-metallic mineral products sector is not a problem the manufacturing sector generates itself, but one it inherits: limited access to secondary raw materials, rooted primarily in the inefficient management of construction and demolition waste generated by downstream construction and demolition activity (CAEM F41-F43). If properly recovered, the mineral fraction of this waste stream could feed back into the priority product groups analysed in Section 4. The sector does not operate in isolation: it supplies a downstream construction economy of 3,536 enterprises (2024) that completed works worth MDL 28.2 billion in 2024, and demand is rising, with ready-mixed concrete output growing 54.5% between 2020 and 2025. That same building activity generates, at the end of its lifecycle, the waste stream that represents the sector's principal circular economy opportunity, yet the constraints preventing that opportunity from being realised are presented below in the sequence in which they bind, since the evidentiary and legal barriers must be resolved before the economic and infrastructure barriers that follow them can respond to any policy intervention at all.

This framing is consistent with the European Commission's 2014 Communication on Resource Efficiency Opportunities in the Building Sector (COM(2014) 445 final, 1.7.2014), which centres

on the use of material indicators across a building's full life-cycle — from raw material extraction to end-of-life — rather than on production-stage efficiency alone. Applied to Moldova, this life-cycle perspective reinforces why the sector's circularity performance cannot be assessed through C23 production data in isolation, but must account for the downstream construction activity (CAEM F41-F43) analysed throughout this section.¹¹

The main circularity challenge in Moldova is the inefficient management of construction and demolition waste (CDW). The strongest justification for intervention lies in the significant gap between estimated CDW generation and officially reported waste. National¹² estimates indicate that approximately 1.4 million tonnes of CDW were generated annually as early as 2010, with projections reaching around 2.6 million tonnes by 2027. Applying the average EU¹³ benchmark of 0.68 tonnes of CDW per capita suggests that Moldova currently generates approximately 1.62 million tonnes of CDW each year. By contrast, official reporting for 2024 recorded only 3,539.61 tonnes (Environment Agency, SIA „Managementul Deșeurilor”, reporting under Government Decision No. 501/2018), revealing a substantial level of underreporting and a severe lack of material traceability. This discrepancy makes it difficult to plan effective recycling systems and significantly limits the recovery of valuable secondary materials. Similar challenges have been recognised across Europe, where construction and demolition waste is identified as the largest waste stream and improved traceability, selective demolition and high-quality recycling are considered essential for advancing circular construction (European Commission, Construction and Demolition Waste).

A second bottleneck concerns the limited integration of circular economy principles throughout the construction value chain. Circular design approaches such as Design for Disassembly (DfD), Building Information Modelling (BIM), Material Passports and pre-demolition audits remain at an early stage of implementation. Consequently, buildings are rarely designed to facilitate future reuse, refurbishment or material recovery, reducing opportunities to retain material value over multiple life cycles. This is consistent with international evidence¹⁴ showing that decisions taken during the design stage determine much of a building's environmental performance, resource efficiency and future recovery potential.

C23 accounts for 45.5% of industrial final energy consumption, some 3,962 TJ, and for 54.6% of national industrial process emissions, in both cases dominated by cement. With the EU Carbon Border Adjustment Mechanism's definitive regime — in force for cement since 1 January 2026, with certificate purchase obligations beginning in 2027 — circularity here is simultaneously a decarbonisation and a market access question. Clinker substitution and increased use of cullet act on energy intensity, process emissions and export exposure at the same time, which makes them the highest-return interventions on the manufacturing side.

This manufacturing-side exposure has a mirror image on the demand side. Direct trade statistics show Moldova running a growing deficit in construction materials — USD 264.5 million in 2025, up 61% since 2023 — with every one of the five priority CPC codes a net importer (Section 4, Table 6). Imported cement, glass, ceramic tiles and mineral wool compete directly with the secondary materials this report identifies as circular economy opportunities,

¹¹ European Commission, Communication on Resource Efficiency Opportunities in the Building Sector, COM(2014) 445 final, Brussels, 1.7.2014. <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:52014DC0445>

¹² [Study on emerging waste in the Republic of Moldova, UNDP](#)

¹³ [Construction and demolition waste, European Commission](#)

¹⁴ [EU construction & demolition waste management protocol including guidelines for pre-demolition and pre-renovation audits of construction works, EU Publication](#)

meaning that import substitution, not only waste diversion, is part of the economic case for domestic recycling capacity.

The sector also faces important industrial and regulatory barriers. High energy consumption in cement and glass production, fragmented technical standards, limited testing and certification capacity for innovative construction materials, and increasing compliance requirements related to European climate and environmental legislation reduce the pace of circular innovation. At the same time, the limited use of recycled aggregates and other secondary raw materials reflects both technical and market barriers that continue to favour virgin materials over recovered resources. International experience also highlights that improving material efficiency, increasing the use of secondary construction materials and extending building lifecycles are among the most effective measures for reducing both resource consumption and greenhouse gas emissions in the built environment.

Despite these challenges, the construction sector offers significant opportunities for circular transformation. Better management of construction and demolition waste, wider use of secondary construction materials, improved material traceability, greater adoption of circular design principles and stronger Green Public Procurement can significantly improve resource efficiency while supporting industrial competitiveness and reducing environmental impacts across the construction value chain.

This scale warrants intervention. Under a central scenario — 1.62 million tonnes of CDW, a 60% mineral fraction and a 70% recovery rate — Moldova could recover around 680,000 tonnes of aggregate a year: 12.7% of the sand and gravel extracted in 2022, 9.6% of all construction minerals extracted (7,122.3 thousand tonnes), and roughly 38% of the aggregate consumed by the ready-mixed concrete industry (scenario range: 486,000–1,164,000 tonnes). These are planning assumptions, but the precedent is domestic, not theoretical: slag and industrial waste mixtures alone supplied 1,513.2 thousand tonnes of construction material in 2022 — 21.2% of virgin extraction by volume, and roughly 72 times the CDW officially reported that same year (20,937.62 tonnes). This secondary mineral stream has kept growing since: 1,635.0 thousand tonnes in 2023, a peak of 2,227.5 thousand tonnes in 2024, and 1,986.9 thousand tonnes in 2025 (+31.3% vs 2022) — confirming an active, expanding market rather than a one-off data point.

6. Core circularity priorities

The sector's circular transition should be explicitly structured around the three strategic priorities presented in Table 7. As visible in the table, each row links one priority to a corresponding barrier and a corresponding opportunity, forming a clear intervention logic: Priority → Barrier → Opportunity. This table should be treated as a central organizing framework in the summary, not merely as supporting material.

Table 7. Top 3 priorities, barriers and opportunities in manufacture of other non-metallic mineral products sector

#	Priority	#	Barrier		Opportunity
P1	Develop circular management of construction and demolition materials and increase	B1	Construction and demolition waste (CDW) is largely landfilled due to insufficient collection,	O1	Adopt end-of-waste criteria for recycled aggregate under Law No. 209/2016 — currently the single

	secondary material use in concrete, cement and plaster products (CPC 375 & CPC 374).		sorting and recycling infrastructure. Recycled aggregates are rarely certified or used, and circular requirements are not integrated into public investment projects.		legal gating constraint preventing processed aggregate from being sold as a product or specified in public tenders. Alongside this, establish a national CDW framework including pre-demolition audits, selective demolition, recycled aggregate certification, and mandatory consideration of recycled materials in Green Public Procurement (GPP).
P2	Accelerate circular construction through digitalisation, material traceability and longer building lifecycles	B2	Limited integration of circular economy principles in building design; lack of material traceability; weak incentives for building renovation and reuse; fragmented standards and certification systems. In 2025, repair and renovation activities accounted for 49.0% of construction works, yet they remain insufficiently regulated from a circularity perspective, with no pre-demolition audit or waste management plan attached to it.	O2	Introduce BIM-based Material Passports for public buildings, promote adaptive reuse of underutilised public buildings, support renovation over demolition, and develop digital tools to improve traceability and future recovery of construction materials — with renovation-stage requirements treated as a near-term priority alongside new-build design standards.
P3	Strengthen resource efficiency, innovation and low-carbon production in construction materials industries (glass, cement, lime and concrete products)	B3	High energy consumption, fragmented standards and testing capacity, limited circular innovation, and insufficient policy framework for sustainable extraction and use of mineral resources.	O3	Increase the use of alternative fuels and clinker substitution in cement production, a measure already practised internationally, where fossil fuels are partially replaced with combustible waste of positive net calorific value, and raw material inputs are part-substituted with

					recovered CDW, ground glass cullet and blast furnace slag (materials Moldova currently imports rather than sources domestically). Improve glass recovery and recycling specifically within the flat-glass/construction segment; adopt a modern Geological Code supporting sustainable extraction and quarry rehabilitation; and establish a national centre for testing, certification, innovation and technology transfer in circular construction and sustainable building materials.
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Taken together, these three priorities establish a practical roadmap for Moldova's construction materials manufacturing sector (CAEM C23). P1 strengthens the management of construction and demolition material flows, P2 improves circularity throughout the building lifecycle, and P3 accelerates industrial transformation towards more resource-efficient and low-carbon construction materials. Their combined implementation would support both environmental objectives and the long-term competitiveness of the sector.

6.1. Main entry points for a realistic circular transition

The sector and CPC-level assessment indicates that the transition towards a more circular construction materials economy should focus on product groups where material intensity, economic relevance and opportunities for secondary material recovery are greatest. Rather than proposing generic measures for CAEM C23 as a whole, this study identifies targeted circular entry points for two priority value chains — articles of concrete, cement and plaster (CPC 375) and glass and glass products (CPC 371), both closely linked to construction and demolition waste (CDW) flows and offering significant opportunities to substitute virgin raw materials and strengthen domestic markets for quality-assured secondary materials.

Circular entry points for articles of concrete, cement and plaster (CPC 375):

- Pre-demolition audits, selective dismantling and source separation to improve the volume and traceability of concrete, masonry and other mineral CDW streams reaching recyclers.

- Technical standards and quality criteria for recycled aggregates that enable their safe, predictable use in concrete products, road works and other construction applications.
- Investment in sorting, crushing, testing and certification capacity for mineral CDW, developed jointly with construction companies, demolition operators and cement/concrete producers through industrial-symbiosis arrangements that create stable secondary-material supply chains.
- Green Public Procurement criteria for public construction and infrastructure projects, requiring recycled-content materials and verified secondary aggregates where technically appropriate, to anchor demand for the streams above.

Circular entry points for glass and glass products (CPC 371):

- Separate collection of flat glass and other high-quality glass streams from construction, renovation and demolition activities, avoiding contamination that limits recycling potential.
- Closed-loop recovery systems linking demolition companies, window and façade producers, glass processors and recyclers to domestic glass manufacturing, supported by dedicated sorting, cleaning and cullet-processing capacity.
- Quality specifications and certification procedures for recovered glass cullet, and design-for-disassembly standards for windows, façades and glazing systems that make glass easier to separate from frames and sealants at end of life.
- Public procurement and investment support to stimulate demand for products containing recycled glass, strengthening the domestic market for certified cullet.

6.2. Preliminary outlook for scaling methods

Achieving a circular transition in Moldova's construction materials manufacturing sector (CAEM C23) requires coordinated actions that enable successful pilot initiatives to be replicated and scaled across the industry. Based on the sector analysis, three complementary scaling methods have been identified across the two priority product groups.

SECTOR: Construction materials and non-metallic mineral products sector analysis		
Scaling method	Value Chain #1 Articles of concrete, cement and plaster (CPC 375)	Value Chain #2 Glass and glass products (CPC 371)
Scaling Out (replication)	Replicate selective demolition practices and recycled aggregate production across additional municipalities and construction companies. Expand the use of recycled concrete products in public infrastructure and private construction projects.	Replicate separate collection, sorting and recycling systems for construction and flat glass. Expand the use of recycled glass (cullet) in glass manufacturing and construction products.
Scaling Up (system change)	Introduce standards and certification schemes for recycled aggregates, mandatory pre-demolition audits, and Green Public Procurement criteria for construction materials. Promote low-carbon cement and concrete production and strengthen material traceability through the gradual adoption of BIM and Material Passports.	Strengthen quality assurance and certification for recycled glass, integrate recycled-content requirements into Green Public Procurement and building specifications, and support investments in glass collection, recovery and processing infrastructure. Foster collaboration between demolition contractors, recyclers and glass manufacturers to develop local markets for recycled glass.

Scaling Deep (cultural change)	Promote a shift from demolition to renovation, adaptive reuse and Design for Disassembly (DfD). Increase confidence in recycled construction materials through professional training and awareness programmes, encouraging buildings to be viewed as long-term material banks rather than short-lived structures.	Promote a shift from demolition to renovation and adaptive reuse in glass-intensive refurbishment. Encourage architects, developers and public authorities to specify recycled and reusable flat glass products in new construction and renovation projects. Increase confidence in recycled construction glass as a valuable secondary raw material through awareness and knowledge-sharing initiatives, distinct from the higher-recycling-rate glass packaging market.
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Scaling Out = replication of a circular model across firms, markets, or regions.

Scaling Up = policy and market reforms that allow circular models to grow.

Scaling Deep = changes in values, behaviours, and trust that support long-term circular adoption

6.3. Gender inclusion in the sector

Construction materials manufacturing (C23) has a strong gender disparity – 22.3% women against a 52.1% manufacturing average, which is even more pronounced downstream: in the construction and civil-works activities (F41–F43) that consume these materials and generate most construction and demolition waste, female participation falls to 9.6–15.4%. Because the circularity loop analysed in this report spans both the manufacturing stage and the construction/demolition activity that feeds it, the relevant labour pool is consistently male-dominated across it. The disparity is concentrated at the heavy-machinery stages quarrying, cement, concrete and glass production, where the sector’s own diagnosis already flags a severe shortage of specialists (engineers, technicians and geologists), which reframes gender inclusion here as a labour-supply response to a binding constraint, not solely an equity objective.

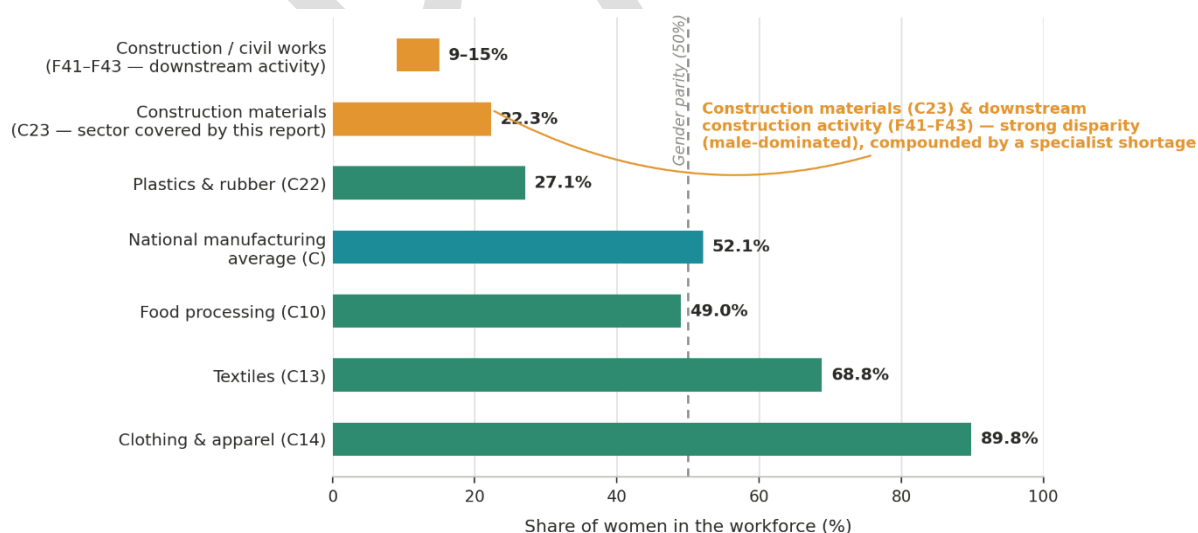


Figure 3. Share of women in the workforce: construction materials compared with other circular-economy-relevant sectors, Moldova (2024)

Source: NBS

The transition towards more circular construction is also creating or expanding technical and professional functions in areas such as BIM-based design optimisation, pre-demolition and pre-renovation audits, material assessment, and the quality assurance, safety and certification of secondary construction materials. These roles offer greater scope for diversifying participation as new skills profiles and professional pathways are developed.

Targeted recruitment, technical training and certification pathways can therefore help broaden participation in these emerging functions while addressing existing skills shortages. Integrating gender considerations into workforce development from the outset would help ensure that the expansion of circular activities contributes to a more diverse and resilient skills base rather than reproducing existing participation patterns.

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Annex 1. Value Chain Canvas for the construction materials and non-metallic mineral products sector¹⁵

STAGE	STAKEHOLDERS	KEY RESOURCES	LOSSES & PROBLEMS	SOLUTIONS & OPPORTUNITIES
1. DESIGN <i>Architectural design, BIM, urban planning</i>	- Architects and project designers - Academic institutions and BIM technical experts - Civil society associations active in circular construction - International cooperation projects (e.g., Interreg DANUBE 2021–2027) - Public authorities responsible for procurement and building regulations	BIM (Building Information Modelling) and Digital Twins as design and resource-optimisation tools - Innovation capacity within architecture and engineering firms - Existing legislative-change proposals advocating CE principles in design - Active international circular-construction projects supporting local capacity (e.g., DigiBuild Interreg DANUBE)	Public procurement does not yet include circular-economy performance criteria for contractor selection BIM and Digital Twins applied only at very small scale — limiting resource optimisation and transparency potential - No mandatory minimum recycled-content requirements in new construction projects Public Procurement Law does not include binding CE provisions for material and works procurement - Limited integration of CE design principles in architecture curricula	Amend the Public Procurement Law to include binding CE provisions for materials and works contracts Mandatory minimum recycled-content quota for construction materials in new public buildings (CPC 375) Scale up BIM and Digital Twins for new public infrastructure projects to optimise resource use Ecological education in academic and professional institutions — embed CE modules in architecture and engineering Design-for-disassembly (DfD) principles mandated for public buildings (CPC 375, 374) - Adopt European CDM (Construction Demolition)

¹⁵ This Value Chain Canvas was developed based on a participatory mapping exercise conducted with key stakeholders from the construction materials sector during the National Kick-off Workshop on Value Chains Mapping, held in Chişinău on 19.05.2026.

Implementing partners:



				Materials) framework at design stage
2. MATERIALS <i>Raw materials extraction, primary inputs, imports</i>	• Large construction materials producers (cement, concrete, glass — CPC 374, 375, 371) • Quarry operators and mining companies (limestone, sand, gravel) • Material importers (for specialised products) • State and private companies in construction materials • Equipment suppliers for extraction operations	• Domestic quarries and mines — limestone, sand, gravel, gypsum (inputs for CPC 374, 375, 376) • Extraction equipment owned by quarry and cement operators • Imported raw materials (specialised cement additives, technical glass) • Existing integrated supply chains of large cement and concrete producers • Glass cullet (secondary raw material — CPC 371)	• Lack of a national "Geological Code" — no coherent framework regulating extraction and rehabilitation • Coexistence of old GOST standards and European Eurocodes, applied inconsistently across producers • No "bio" or "eco" labelling for construction raw materials • Weak separate collection of construction waste by type, limiting secondary material availability • Limited communication between academia, business, and society on responsible material sourcing • Insufficient public awareness of the environmental impact of unsustainable extraction	• Adopt a national "Geological Code" regulating extraction, rehabilitation, and waste management at quarries • Harmonise national standards with European Eurocodes, phasing out outdated GOST references • Introduce "bio" / "eco" labelling for construction raw materials • Mandate separate collection of construction waste by type (concrete, glass, gypsum, metal, wood) • Strengthen academia–business–society dialogue on responsible sourcing through joint platforms • Promote use of glass cullet (CPC 371) as secondary raw material in new production
3. PRODUCTION <i>Cement, concrete, glass, prefabricated elements</i>	• Cement producers (CPC 374 — ~14 enterprises) • Concrete and prefab producers (CPC 375 — ~179 enterprises) • Glass producers (CPC 371 — ~44 enterprises) • Stone and other mineral product producers (CPC 376/379 — ~75 enterprises) • Technical universities (R&D, GREEN TECH HUB UTM)	• Skilled industrial workforce (where available) • Water resources for process cooling and washing • Students, teaching staff and researchers as a talent and innovation pipeline • Existing R&D platforms (GREEN TECH HUB UTM) for green construction technology • Modernised cement-kiln capacity at large producers (CPC 374)	• Severe specialist shortage — engineers, technicians, geologists, surveyors • High energy consumption in cement and glass production (CPC 371, 374) • Need to implement EU ETS / CBAM carbon-pricing instruments — significant cost shock expected • Need to adapt national norms and standards to EU requirements	• Circular procurement of inputs — recycled aggregates in concrete production (CPC 375) • Energy recovery — reuse thermal energy from kilns for drying alternative fuels (RDF) • Alternative fuels (RDF) from municipal and industrial waste co-processed in cement kilns (CPC 374) • Clinker substitution with supplementary cementitious

	• Students, teaching staff, vocational educators, researchers • International technical partners	• Manufacturing processes and equipment for CPC 375 (concrete mixing, prefabrication)	• Rising costs of utilities (water, gas, electricity) compressing margins • Geographical placement of plants creating logistical disadvantages • Local innovative solutions cannot be certified due to insufficient laboratory capacity → replaced by imports • High clinker-to-cement ratio → high embodied CO₂ (CPC 374)	materials (limestone flour, slag, fly ash) • Glass cullet reintegration as secondary raw material for melting (CPC 371) — reduces energy by ~30% • Invest in certification laboratories so local innovations can be tested and brought to market • VET programme for technical specialists — engineers, geologists, surveyors • Strengthen GREEN TECH HUB UTM as a national green construction R&D anchor
4. DISTRIBUTION <i>Logistics, retail networks, B2B supply</i>	• Logistics service providers • Construction materials retail chains (DIY and B2B) • Concrete batching plants supplying contractors • Large producers operating own distribution networks • Road and rail freight operators	• Retail network of construction-material stores (proximity coverage) • Truck fleet for ready-mix concrete and bulk materials • Human resources for sales and logistics • Existing B2B logistics infrastructure connecting producers and contractors	• Competition from low-price imports undercutting locally produced materials • Technical limitations in transporting the final product — short setting time of fresh concrete (CPC 375) constrains delivery radius • Lack of rail transport infrastructure for bulk construction waste flows (between demolition sites and recycling plants) • Single-use plastic packaging dominant for bagged materials (cement, plaster) • Limited reverse logistics for unsold or returned products	• Strengthen verification of competitors through legislative compliance checks (quality, certification, fair-trade rules) • Develop rail transport infrastructure for construction waste streams between demolition and recycling sites • Optimise delivery radii for ready-mix concrete to reduce technical losses (CPC 375) • Reusable bulk-bag schemes for cement and plaster (CPC 374) • Green Public Procurement prioritising local sustainable producers over low-price imports
5. USE	• Real-estate developers • Road builders and infrastructure contractors	• Existing stock of buildings and infrastructure as a material bank for the future	• Uncontrolled use of raw materials on construction sites	• Mandate pre-demolition / pre-renovation audits assessing reusable, recyclable and

<i>Building construction, infrastructure, operation</i>	• General contractors and SMEs in construction services • Building owners and facility managers • Public authorities procuring construction works	• Real-estate sector activity providing continuous demand for materials • Public infrastructure investments (roads, social housing) as procurement leverage • Underutilised public buildings (e.g., the 9-storey dormitory of the Brătușeni Agricultural College) as reuse opportunities rather than demolition candidates	— over-ordering and on-site waste • No pre-demolition audit obligation to assess which materials could be reused/recycled vs. landfilled • No "material passport" for new public buildings — future end-of-life remains undocumented • Underperformance of buildings energetically (high heating losses); maintenance underfunded • Underutilised existing buildings demolished instead of being adaptively reused	- disposable fractions — aligned with EU CDW Protocol • Adaptive reuse of underutilised buildings (e.g., conversion case of the 9-storey Brătușeni dormitory) instead of demolition • Information system for the built environment — wear, seismic risk, energy efficiency, material composition • Renovation Wave Moldova — financing instrument for deep retrofits • Material Passport via BIM for new public buildings
6. REPAIR & REFURBISHMENT <i>Renovation, retrofit, adaptive reuse</i>	• Renovation specialists and façade repair contractors • Energy-retrofit companies • Building owners and condominium associations • Public authorities responsible for school, hospital and social-housing renovation • Vocational schools providing repair trade training	• Existing renovation contractor base (largely SME) • Strong technical case for adaptive reuse demonstrated at the Brătușeni dormitory (9 floors, full structural reuse potential) • Energy-retrofit market driven by rising utility costs • Public renovation funds for schools, hospitals, and social housing	• Renovation rate <1%/year (well below the EU 3% target for deep renovation) • Maintenance neglected, accelerating building deterioration • Skilled-trade shortage for traditional and energy-retrofit techniques • No fiscal incentives for deep renovation • Adaptive reuse rarely chosen despite lower CO₂ footprint vs. new-build	• National Renovation Wave programme aligned with EU targets • Adaptive reuse promoted as default option for underutilised public buildings • VET programme for renovation trades — masons, energy-retrofit technicians, restoration specialists • Fiscal incentives (VAT reduction, low-interest loans) for deep renovation • Public-sector demonstration projects showcasing adaptive reuse (e.g., Brătușeni dormitory) as replicable models
7. RECOVERY & COLLECTION	• Collective EPR operators (Eco-REP)	• CDW (Construction & Demolition Waste) streams —	• Severe lack of construction-waste collection infrastructure	• Natural resource savings through high CDW recovery rates

<i>Construction & Demolition Waste (CDW) sorting, recycling</i>	• Companies specialised in demolition waste valorisation • Cement producers (using CDW as alternative fuels / mineral inputs — CPC 374) • Energy-efficiency operators • Public administration (mayoralities, regional waste authorities) • Training centres for waste-sector specialists	concrete, brick, glass, metal, wood • Solid waste streams suitable for recycling • Trained personnel and training centres for sorting and recycling • Simulation laboratories and consumables for VET • Cement kilns as co-processing hosts for alternative fuels (RDF) and mineral CDW • Recovered materials from demolitions as potential secondary feedstock	• No sorting of materials at demolition sites • No drop-off points for CDW that could serve as alternative fuel feedstock • Very low rate of separate collection in the population • Importers and producers not informed of CDW recovery options • Lack of competent personnel for recovery operations • High costs for recovery operations relative to landfilling • Public disinterest in selective collection • Energy-efficient materials are cost-prohibitive for many construction SME • Inefficient implementation of existing law • Specialised equipment and dedicated territories required for recycling — both missing	• Lower costs for end products and utility bills through recovered materials • Less waste and pollution by diverting CDW from landfill • New green jobs in CDW recovery and recycling • Sustainability and local eco-materials strengthened • Concrete recycling as standard practice (CPC 375) • Thermal energy recovery from industrial and municipal waste in cement kilns (CPC 374) • National CDM (Construction Demolition Material) framework — target up to 98% material reuse from demolitions • Adopt Extended Producer Responsibility (EPR) for construction materials • Regional CDW sorting plants producing certified secondary aggregates (CPC 375) • Glass cullet collection scheme — link to wine sector synergy (CPC 371)
8. END-OF-LIFE / NEXT USE <i>Secondary aggregates, alternative fuels, material loops</i>	• Secondary aggregate producers (output of recycled CDW) • Glass cullet processors (CPC 371) • Cement producers using mineral CDW as raw-material substitute (CPC 374)	• Recycled concrete aggregates suitable for road sub-base and new concrete (CPC 375) • Glass cullet as a secondary input reducing energy needs by ~30% in melting (CPC 371)	• No certified secondary aggregates market — public buyers and contractors mistrust recycled materials • Most CDW landfilled or used as low-grade road fill, losing high-value applications	• National certified secondary aggregates standard — quality, safety, environmental compliance • Green Public Procurement quota for recycled aggregates in roads and public works • Mandatory selective demolition / pre-demolition

	• Energy operators co-processing RDF • Public procurement authorities purchasing recycled-content materials • Research institutes certifying secondary materials	• Mineral CDW (concrete fines, brick) as clinker substitutes (CPC 374) • Limestone flour and other supplementary cementitious materials • Plastic and textile residues experimented as additives in asphalt and concrete (cross-sector synergy with Sectors 2 & 4) • RDF from municipal/industrial waste as cement-kiln fuel	• No mandatory recycled-content threshold in public works contracts • Selective demolition not practised — mixed CDW streams unusable for high-grade recycling • Innovative recycled materials cannot be certified locally and are replaced by imports	• audit to enable high-grade recovery • National CDM framework targeting up to 98% material reuse from demolitions • Pilot LC3 (Limestone Calcined Clay Cement) to reduce clinker share by 50% (CPC 374) • Plastic / textile residue valorisation pilot in asphalt and concrete (cross-sector circular synergy) • Material Passport via BIM for new public buildings — enabling future-proof end-of-life • Certification laboratories for recycled construction materials
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Annex 2. Direct Trade in Construction Materials, by Product (HS 6-digit), 2023–2025

This annex ranks the highest-value HS 6-digit product lines in Moldova's construction-materials trade, regardless of sector, to benchmark the five priority CPC codes underlying the four priority product groups against the broader import/export landscape (metal, plastic and wood building components). Rows in bold correspond to the priority CPC groups analysed in Section 4; the remainder are shown for market context.

The “CPC relevance” column indicates, for each product, whether it corresponds to one of the five CPC codes that make up the four priority product groups analysed in Section 4 (CPC 375, 371, 374, 379, 376), to a raw material outside CAEM C23's manufacturing scope, or to a product manufactured by a different industrial sector (plastics, wood, metal or mixed).

HS code	Product description	CPC relevance	Exp. 2023	Exp. 2024	Exp. 2025	Imp. 2023	Imp. 2024	Imp. 2025
730890	Structures and parts of structures, of iron or steel, n.e.s.	Other sector (metal, CAEM C24/C25)	4,228.7	4,979.0	5,537.4	26,679.2	50,159.9	49,249.7
690721	Ceramic flags and paving, hearth or wall tiles	Not a priority CPC group (ceramic construction products)	1,239.5	954.0	198.3	30,938.6	34,820.2	40,794.3
392590	Builders' ware of plastics, n.e.s.	Other sector (plastics, CAEM C22)	6,547.1	7,564.9	9,570.6	12,293.6	14,515.8	18,018.3
252329	Portland cement (other than white)	CPC 374 – Plaster, lime and cement	6.2	2,169.1	1,203.9	9,847.9	8,760.3	22,854.8
441829	Wooden doors and their frames and thresholds	Other sector (wood, CAEM C16)	1,553.3	1,742.2	1,887.9	11,859.2	13,749.5	13,212.7
252020	Plasters (calcined gypsum or calcium sulphate)	CPC 374 – Plaster, lime and cement	15,507.7	8,952.9	5,467.0	1,677.5	1,864.0	3,006.5
680610	Slag wool, rock wool and similar mineral wools	CPC 379 – Other non-metallic mineral products	10.7	18.4	52.4	5,976.4	7,544.8	10,555.8
730830	Doors, windows and their frames, of iron or steel	Other sector (metal, CAEM C24/C25)	198.1	188.2	349.1	5,341.5	7,518.9	8,887.5
940690	Prefabricated buildings, not of wood	Other sector (mixed manufacturing)	858.3	1,645.1	1,119.6	3,980.0	6,499.4	7,526.7
—	Others (81 additional HS codes – see note below)	Various	9,575.7	8,421.8	12,804.4	87,414.1	94,719.8	111,463.4

Source: authors' calculations based on direct construction-materials trade statistics (HS 6-digit, UN Comtrade), 2023–2025; product-to-CPC correspondence indicative, mapped by the authors.

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