WEC | Women Empowered in Construction

Research report on labour shortages and gender imbalances in construction

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Document Information
Project: Women Empowered in Construction (WEC)
Project Coordinator: Future Cast (Ireland)
Deliverable: Research Activities and Analysis: Labour Shortages and Gender Imbalance Report
Output Leader: Pannonia Consulting (Croatia)
Contributing Beneficiaries: VilTech (Lithuania); Outside Media & Knowledge (Germany); Future Cast (Ireland); Okret (Bosnia and Herzegovina); Zenos (Bosnia and Herzegovina); SGGS- CEG School (Montenegro); CRCA (Albania)

Document History:

Date	Version Nr	Deliverable Version and Changes
1.9.2025.	v.01	1st Version

Disclaimer
Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Copyright notice

WEC Women Empowered in Construction

Table of Content

1. Introduction

The construction industry stands as a fundamental pillar of economic development, accounting for a significant share of global GDP and employment. Within the European Union (EU), this sector contributes approximately 10.1% to GDP and 6.4% to total employment (FIEC - European Construction Industry Federation), positioning it as a crucial driver of sustainable growth. However, the industry is presently facing acute and interrelated challenges namely, persistent labour shortages and entrenched gender imbalances that threaten its long-term resilience and capacity to meet increasing demands for infrastructure development and the green transition. Recent analyses have shown that labour shortages in the construction sector have intensified considerably, reaching levels nearly three times higher than a decade ago (FIEC). This shortage is compounded by structural factors such as an ageing workforce, inadequate vocational training pathways, and rising demand for construction services driven by ambitious European infrastructure and environmental targets. The European Commission's *Employment and Social Developments in Europe 2023* report identifies construction as one of the sectors most severely affected by workforce deficits. In addition to these labour market pressures; the sector remains markedly gender segregated. Women continue to represent a disproportionately small share of the construction workforce, facing systemic barriers to entry, progression, and leadership roles. Scholarly research emphasizes that enhancing female participation is essential not only to address labour shortages but also to foster equity, innovation, and efficiency within the sector (Springer, 2020). Despite various initiatives, construction remains one of the most gender-imbalanced industries both in the EU and globally. The *Women Empowered in Construction (WEC)* project directly responds to these critical challenges. The project seeks to empower women across the Western Balkans and the EU by developing innovative vocational education and training (VET) programs that bridge skills gaps, promote gender equality, and support the sustainable development of the construction sector. Through comprehensive research, WEC aims to assess the scale and implications of labour shortages and gender disparities, identify their structural causes, and map existing policies and practices. The findings will serve as a foundation for designing curricula, educational resources, and training modules that are responsive to labour market needs while fostering inclusivity and diversity in the industry. The project aspires to create systemic change by equipping VET educators and institutions with tools to attract and retain women in construction, building cross-border networks of support, and fostering dialogue among policymakers, industry stakeholders, and training providers. By addressing these multifaceted issues, WEC contributes to a more sustainable, equitable, and competitive European construction sector.

2. Methodology

The methodological framework for the Women Empowered in Construction (WEC) research is designed to generate a rigorous and multi-dimensional understanding of labour shortages and gender imbalances in the European and Western Balkan construction sectors. The approach is grounded in established principles of mixed-methods research, combining quantitative data analysis with qualitative inquiry to ensure comprehensive coverage of structural and contextual factors influencing workforce dynamics.

The research is organized into four sequential yet interrelated phases:

Primary Data Collection from Institutional Sources

The first phase entails the systematic identification and engagement of key institutional stakeholders, including national employment bureaus, ministries of labour, trade unions, and professional construction associations. Each partner country is tasked with securing official datasets and reports that capture indicators such as workforce composition, employment rates, skill shortages, and gender representation in the construction sector. Data collection will adhere to standardized protocols to ensure comparability across countries. The extracted datasets will be subjected to descriptive statistical analysis, enabling the quantification of labour market trends and disparities with a focus on cross-national variation.

Policy Framework and Literature Review

To complement primary data, this phase conducts a structured review of secondary sources, including academic research, government strategies, EU-level frameworks, and industry publications related to construction labour markets and women's participation. The review critically examines existing policies, strategic interventions, and documented best practices aimed at mitigating workforce shortages and enhancing women's inclusion in the sector. Using thematic coding, findings are synthesized to reveal patterns, transferable insights, and gaps in current approaches. These outputs inform evidence-based curriculum design and policy recommendations tailored to the needs of the construction industry.

Qualitative Stakeholder Interviews

Recognizing that labour market dynamics cannot be fully captured through quantitative metrics alone, the third phase incorporates qualitative inquiry. Semi-structured interviews will be conducted with a minimum of two stakeholders per partner country, selected for their direct involvement in or oversight of construction workforce development. Interview protocols are designed to elicit nuanced perspectives on systemic barriers, gendered experiences, and the efficacy of existing labour policies and training initiatives. Interviews will be transcribed and analyzed using qualitative content analysis to distill emergent themes and cross-country patterns of challenges and opportunities.

Country-Level Synthesis and Comparative Analysis

The final phase involves the integration of quantitative and qualitative findings into country-specific analytical reports. Each report will present a synthesized account of labour shortages and gender imbalances, identifying underlying structural, cultural, and

policy-related determinants. Comparative analysis across participating countries will be conducted to discern regional commonalities and divergences. The outputs of this phase will feed into a consolidated transnational research report (D2.1), serving as an empirical foundation for the subsequent development of the D3.2 vocational training curriculum.

This methodological design is informed by the need for methodological triangulation ensuring validity and depth by cross-verifying findings from multiple data sources and analytical techniques. The integration of quantitative labour market data, qualitative stakeholder perspectives, and comparative policy analysis allows for a holistic understanding of workforce dynamics in the construction sector. The study's outcomes will thus provide robust, evidence-based recommendations for educational program design, gender mainstreaming in vocational education and training, and strategic policymaking aimed at enhancing labour market inclusivity and sustainability within the European and Western Balkan construction industries.

3. Data Collection from Institutional Sources

The primary data collection phase of this research constitutes a systematic effort to capture authoritative and country-specific information on labour shortages and gender imbalances within the construction sector across Ireland, Croatia, Germany, Lithuania, Montenegro, Bosnia and Herzegovina, and Albania. This process involved structured engagement with national and regional employment bureaus, ministries of labour, construction trade unions, and professional associations to obtain official datasets and reports directly relevant to workforce dynamics. The collected data provide a quantitative foundation for assessing workforce availability, identifying critical skill shortages, and evaluating the representation of women in construction. Differences in institutional structures, data availability, and reporting mechanisms across participating countries necessitated the adoption of standardized collection protocols to ensure methodological consistency and comparability. Preliminary findings reveal notable variations in labour market characteristics, with some countries exhibiting acute shortages of skilled workers while others face structural underemployment. Gender imbalances are a persistent challenge throughout the region, reflected in significantly lower female participation rates compared to EU averages. This stage of research not only supplies the empirical baseline for subsequent analyses but also illuminates systemic institutional gaps and regional disparities that hinder workforce inclusivity. The insights derived from this primary data collection will be instrumental in informing targeted vocational education and training interventions designed to enhance labour market resilience and promote gender equality within the European and Western Balkan construction industries.

3.1 Ireland

The construction sector is a central pillar of Ireland's economic development, contributing significantly to national infrastructure expansion and employment creation. Despite sustained growth and a strong forecast for future expansion, the sector faces persistent and interlinked challenges: a critical shortage of labour and substantial gender imbalances. These structural issues not only threaten productivity and the timely delivery of major infrastructure projects but also impede broader policy objectives related to gender equality, social inclusion, and sustainable development. This research represents the initial stage of a comprehensive study aimed at producing evidence-based insights through the systematic collection and analysis of official data from relevant Irish institutions.

1. Key Institutions

Addressing workforce shortages and gender disparities in Ireland's construction industry requires a detailed understanding of national labour market dynamics and the institutional frameworks that govern workforce planning. As of late 2024, the sector employs approximately 130,000 workers. To meet upcoming housing and public infrastructure demands, an additional 80,000 workers will be required a projected 47% increase in labour demand (SOLAS, 2023). The industry is expected to grow from €11.1 billion in 2024 to €15.38 billion by 2029, further intensifying workforce pressures (CIF, 2023). With unemployment levels in the sector at less than 1.5%, local labour supply remains severely constrained. The foundational stage of this research involved identifying institutions holding relevant, disaggregated employment data. Key entities included the Department of Enterprise, Trade and Employment (DETE), SOLAS (the national authority for Further Education and Training), the Construction Industry Federation (CIF), and trade unions representing skilled trades. These institutions provide complementary datasets on employment levels, skills shortages, apprenticeship enrollment, and gender participation in the sector. Additionally, Eurostat and the European Institute for Gender Equality (EIGE) offer cross-national data on gender pay gaps and labour force composition, allowing comparative analysis.

2. Data Collection and Access to Official Statistics

Upon identifying the key institutions, the research team accessed official statistical databases, reports, and labour market analyses. The data collection focused on workforce size, recruitment needs, occupational shortages, gender representation, apprenticeship participation, and wage disparities. According to SOLAS and CIF, the Irish construction sector is experiencing acute recruitment challenges, with 63% of companies reporting difficulties in sourcing skilled labour. Shortages are evident across a wide skills spectrum:

- Trades: plumbers, electricians, steel erectors, roofers, insulation operatives
- Semi-skilled roles: dry liners, concrete workers, steel fixers
- Professional positions: quantity surveyors, planners, architectural technologists

Over 60% of apprenticeships are concentrated in electrical trades, leading to an imbalance and deepening shortages in plumbing, carpentry, and other essential trades.

Gender-disaggregated data reveal that, despite a threefold increase in female participation over the past decade, women account for only 10.2% of the construction workforce approximately 18,000 workers in total. Within skilled trades, female representation is critically low at 5%, and fewer than 1.5% of apprentices are women. At senior levels, female representation remains limited, with major companies like Mercury Engineering reporting only 14.3% female leadership roles. The average gender pay gap in the sector stands at 21%, with some firms reporting disparities as high as 30% (Eurostat, 2023; EIGE, 2022).

To address shortages, Ireland has increasingly relied on migrant labour, with DETE reporting an 84% rise in non-national workers since 2021, reaching 27,500 in Q4 2023. Flexible visa schemes and employment permits have been introduced to sustain workforce levels. However, occupational segregation persists, with women primarily occupying support and administrative roles. Social perceptions and limited visibility of construction career paths in schools and vocational institutions continue to deter female entrants.

Government and industry initiatives aimed at alleviating these challenges include expanded apprenticeship schemes, updated Sectoral Employment Orders, recruitment campaigns (e.g., “Women in Construction” events), and diversity-promoting policies introduced in VET curricula and schools.

Indicator	Value
Total workforce (2024)	~130,000
Additional workers needed	80,000 (+47%)
Female workforce (2024)	18,000 (10.2%)
Female skilled trades share	5%
Female apprentices	~1%
Gender pay gap (sector avg.)	21%
Migrant workers (Q4 2023)	27,500

3. Summary of Findings

The data indicate that Ireland’s construction sector, employing approximately 130,000 individuals, faces a substantial labour shortage requiring an additional 80,000 workers to meet national infrastructure goals. Despite recent progress, women remain markedly underrepresented, comprising only 10.2% of the workforce (~18,000 workers) and less than 5% of skilled trades. Apprenticeships remain heavily male-dominated, with female participation below 1.5%. The sector exhibits a persistent gender pay gap averaging 21%, compounded by occupational segregation and limited career visibility for women. Migrant workers, numbering 27,500 in Q4 2023, have become increasingly vital to meeting labour needs, reflecting an 84% increase since 2021. While the sector is forecasted to expand significantly from €11.1 billion in 2024 to €15.38 billion in 2029 these gains will be undermined unless systemic barriers to gender inclusion, skill diversification, and sustainable workforce planning are addressed through targeted policy interventions and educational reforms.

3.2 Croatia

The construction sector plays a vital role in Croatia's economic development, contributing significantly to employment and national infrastructure growth. However, the sector is facing two critical and interconnected challenges: a persistent shortage of labour and a pronounced gender imbalance. These challenges are not only undermining productivity and innovation in the sector but also hindering progress toward the broader goals of social inclusion, gender equality, and a green transition aligned with the European Union's priorities. This research outlines the initial phase of a broader study aimed at generating evidence-based insights through the systematic collection and analysis of official data from relevant Croatian institutions.

1. Key Institutions

Addressing labour shortages and gender disparities in the Croatian construction sector requires a grounded understanding of the national labour landscape and the roles of institutional actors in monitoring and shaping employment trends. The construction sector, employing approximately 125,000 workers as of December 2024, representing 8.5% of all employees in Croatia and expanding at an exceptional rate with annual growth exceeding 15%, operates within a complex framework of public institutions, regulatory bodies, and professional associations. Its contribution to GDP stands at approximately 6.3% (Vecernji.hr , HGK). The foundational step in this research process involved identifying institutions with access to detailed and disaggregated employment data. Among the most relevant were the Croatian Bureau of Statistics (DZS), the Croatian Employment Service (HZZ), the Ministry of Labour, Pension System, Family and Social Policy, and the Ministry of Science and Education. Each of these institutions holds distinct but complementary datasets relevant to construction-sector employment trends, labour shortages, and gender-related imbalances. In addition to public authorities, the Croatian Chamber of Economy (HGK) and sector-specific organizations such as the Croatian Builders Association provided valuable insights into occupational demand, skill gaps, and current initiatives targeting women's participation in the industry. These institutions were crucial not only for their statistical data but also for sectoral perspectives on employer needs and workforce development.

2. Data Collection and Access to Official Statistics

After identifying the key institutions, the research team establishes contact and collects relevant data on employment structures and labour demand. This process involves reviewing publicly available databases, analyzing official publications, and, where necessary, requesting specific statistical tables. The data collection focuses on workforce size, age distribution, vacancy rates, skill shortages, gender representation, the education pipeline, and wage differences. Official statistics from HZZ revealed that the construction sector currently lacks approximately 9,000 workers. Despite the sector's remarkable growth, this labour shortage continues to be one of the most critical bottlenecks for sustaining infrastructure projects and economic development. Gender-disaggregated data from DZS and reported by the HGK Construction Sector shows that in 2024, there were 10,845 women employed in Croatia's construction sector, accounting for 10.22% of the total workforce in the sector (out of 106,050 workers at the time of data collection). It is important to note that although there has been a 35% increase in the number of women employed in construction compared to 2017, when the number stood

at 8,041, gender disparities remain highly visible. However, the occupational roles of women in construction are heavily skewed towards administrative and office-based positions. The number of women directly engaged in on-site construction work remains negligible. According to HGK data from those who are directly engaged in on-site construction work, 40% of the women are engaged in building construction (high-rise), 38.5% in specialized construction activities (e.g., electrical work, finishing trades), and 21.5% in civil engineering (low-rise). Specifically, only 4,339 women are employed directly in building construction activities, highlighting the significant underrepresentation of women in technical and physically demanding roles. Data from the Ministry of Science and Education reinforce these findings. Enrollment figures in construction-related vocational and higher education programs remain heavily male-dominated. In vocational education tracks directly linked to construction trades, female enrollment rates are still below 5%, while in civil engineering university programs, women account for approximately 20–23% of students, depending on the institution. This weak presence of female students in construction-related disciplines directly influences the gender composition of the workforce, perpetuating disparities across the sector. Wage data obtained from the Ministry of Labour shows that while construction wages have been rising, the average gross monthly wage for construction workers continues to trail the national average. In July 2024, construction workers earned approximately 1.072 euro netto, compared to the national average of 1.315 euro (DZS, 2024). Although detailed data on the gender pay gap specifically within the construction sector is limited due to the small female sample size, it is broadly acknowledged that vertical segregation (men in technical and leadership roles, women in administrative roles) contributes to gender-based earnings differentials.

3. Summary of Findings

The data confirm that Croatia's construction sector, employing around 125,000 individuals (8.5% of the workforce), is expanding rapidly but faces a critical shortage of approximately 9,000 workers. Despite a 35% increase in female employment since 2017, women constitute only 10.22% of the sector's workforce, predominantly occupying administrative and non-manual roles. Direct participation of women in technical and site-based construction work remains marginal. Low female enrollment rates in construction-related vocational and higher education programs further perpetuate these imbalances. Wage levels in construction lag behind the national average, with occupational segregation contributing to gender-based earnings disparities. Addressing labour shortages and gender imbalances requires targeted interventions across education, recruitment, and sectoral policy to secure the sector's sustainable growth.

3.3 Lithuania

Labour shortages and gender imbalances have become pressing issues in the construction sector across Europe. Like many countries, Lithuania faces a dwindling supply of construction workers due to factors such as an ageing population, outward migration, and declining interest among youth[1]. At the same time, the sector remains heavily male-dominated, with women constituting only a small fraction of the workforce

[1]Could 6-day working week solve Lithuania's labour shortage problems? https://www.lrt.lt/en/news-in-english/19/2328665/could-6-day-working-week-solve-lithuania-s-labour-shortage-problems

(in Lithuania, *women represent roughly 8–9% of construction workers*[2]). This research report focuses on the case of Lithuania, examining the extent of labour shortages in construction and the stark gender disparity, and exploring the causes behind these trends. The study follows a multi-step research approach – gathering data from institutions, conducting desk research, and interviewing stakeholders – to provide a comprehensive understanding of the challenges and potential solutions.

1. Key Institutions

This section summarises the collected and analysed data from national and local sources including Lithuania's public Employment Service, statistical agencies, and industry bodies to quantify labour shortages in the construction sector and assess gender imbalances. The data collected paint a clear picture: Lithuania's construction industry is experiencing significant worker shortages amid a persistent dominance of male employment.

2. Data Collection and Access to Official Statistics

As of 2022, approximately *10.8% of Lithuania's employed population worked in the construction sector*[3]. In absolute terms, this translates to roughly 126–130 thousand people employed in "narrow" construction (not counting related fields like architecture or real estate)[4]. Construction is among the top four employment industries in the country.

However, it is also one of the most male-dominated. *Men account for about 91.4% of construction sector employees in Lithuania, while women comprise only about 8.6%*[5]. This imbalance is the largest gender disparity of any major economic sector – by contrast, sectors like health or education are predominantly female[6]. Such data underscore that women remain a tiny minority in Lithuanian construction, highlighting a significant gender gap.

Labour Shortages Indicators

Multiple indicators signal that the construction sector is facing labour shortages. The job vacancy rate in construction was *1.8% in 2023*, up from 1.1% in 2019[7]. While this vacancy rate may seem modest, it is important to note that it nearly doubled over four years, indicating rising demand for construction labour. Moreover, it is comparable to the national average vacancy rate (around 2.0% in 2023)[8], despite construction traditionally having lower turnover. The Employment Service of Lithuania and EURES reports have identified construction trades as shortage occupations. According to the latest (2023) EURES labour market report, *59 occupations in Lithuania are in shortage*, many of them

[2]Labour Market in Lithuania (edition 2023). https://osp.stat.gov.lt/en/darbo-rinka-lietuvoje-2023/uzimtumas-nedarbas-ir-laisvos-darbo-vietos/uzimtumas
[3]Labour Market Information: Lithuania. https://eures.europa.eu/living-and-working/labour-market-information-europe/labour-market-information-lithuania_en
[4]EURES (EURopean Employment Services) https://single-market-economy.ec.europa.eu/document/download/41c29a07-73ed-44fa-8a1f-12c6ed5e6c78_en?prefLang=et#:~:text=In%202020%2C%20there%20were%20195%2C047,sectors
[5]https://osp.stat.gov.lt/en/darbo-rinka-lietuvoje-2023/uzimtumas-nedarbas-ir-laisvos-darbo-vietos/uzimtumas
[6]https://osp.stat.gov.lt/en/darbo-rinka-lietuvoje-2023/uzimtumas-nedarbas-ir-laisvos-darbo-vietos/uzimtumas
[7]https://eures.europa.eu/living-and-working/labour-market-information-europe/labour-market-information-lithuania_en
[8]https://eures.europa.eu/living-and-working/labour-market-information-europe/labour-market-information-lithuania_en

in construction and related crafts[9]. Shortage occupations include building frame and finishing trades – for example, *building electricians, plumbers and pipe-fitters, concrete workers, bricklayers, roofers, and civil engineering technicians are all listed among the roles with insufficient workers*[10]. Likewise, construction managers and supervisors are in shortage, suggesting a lack of personnel at both trades and site-management levels[11].

Vacancies and Demand by Occupation

Data from the Lithuanian Employment Service (Lithuanian PES) further detail the specific roles in demand. Construction companies are consistently seeking a wide range of skilled and semi-skilled workers, and many positions go unfilled for lack of candidates. The highest demand in construction is for *skilled manual trades and operators*. For instance, employers report acute needs for plumbers, pipe fitters, road workers, concrete placers/finishers, painters, electricians, bricklayers, heavy equipment operators (excavator/paver operators), and house builders[12]. These roles correspond to core construction activities (structural work, finishing, infrastructure, etc.), indicating broad-based shortages across the sector's occupations. In regional breakdowns, similar patterns emerge in every county of Lithuania, construction jobs like masons, carpenters, or machine operators are among those with plentiful vacancies and not enough jobseekers[13]. Employers also cite difficulty finding specialists such as construction engineers and project managers, although the trades-level shortage is more pronounced.

Foreign Workers Filling Gaps

One consequence of these shortages is a growing reliance on foreign workers to fill construction jobs. In 2023, after the government relaxed labour immigration rules, the number of foreigners working in Lithuania nearly doubled – rising from about 100,000 to 190,000, now roughly *7.5% of the country's population*[14]. Many of these migrant workers are employed in sectors like transportation and construction. Official data show that *most foreigners in Lithuania work in occupations such as truck driving, welding, concrete placing, metal construction assembly, cooking, and building work (e.g. house builders, electricians, plumbers, bricklayers)*[15]. This aligns with the shortage list and suggests that without foreign labour, the construction sector's shortages would be even more severe. For example, employers have been known to recruit construction crews from countries like Ukraine, Belarus, and other non-EU nations. In 2023, Lithuanian authorities set a quota allowing over *40,000 third-country workers to be hired to alleviate labour shortages* (across all sectors)[16]. Many of those permits were utilized in construction and related industries (notably, this quota was later reduced to 24,800 for 2024 as policies tightened[17], reflecting some political concerns).

[9] https://schengen.news/most-in-demand-jobs-in-lithuania-eus-2nd-easiest-country-to-get-a-work-visa/
[10]https://schengen.news/most-in-demand-jobs-in-lithuania-eus-2nd-easiest-country-to-get-a-work-visa/
[11]https://thinkeurope.de/blog/most-in-demand-jobs-in-lithuania-the-eu-s-second-easiest-country-for-obtaining-a-work-visa
[12]https://eures.europa.eu/living-and-working/labour-market-information-europe/labour-market-information-lithuania_en
[13]https://eures.europa.eu/living-and-working/labour-market-information-europe/labour-market-information-lithuania_en#:~:text=
[14]https://www.lrt.lt/en/news-in-english/19/2568150/how-lithuania-opened-doors-to-labour-immigration-lrt-investigation
[15]https://eures.europa.eu/living-and-working/labour-market-information-europe/labour-market-information-lithuania_en
[16]https://www.lrt.lt/en/news-in-english/19/2568150/how-lithuania-opened-doors-to-labour-immigration-lrt-investigation
[17]https://www.lrt.lt/en/news-in-english/19/2568150/how-lithuania-opened-doors-to-labour-immigration-lrt-investigation

Unemployment and Regional Aspects

The general unemployment rate in Lithuania has been relatively low (around 6–7% in recent years) and roughly on par with EU averages[18]. Within the construction sector, unemployment is hard to measure directly, but given the high vacancy rates and employer complaints, it can be inferred that unemployment among construction-skilled workers is very low – essentially, most qualified construction workers who want jobs have them. Indeed, employers frequently report that they cannot find enough local workers to meet demand[19]. Regionally, the capital region (Vilnius) faces the most acute labour shortages; OECD data show *Vilnius has 91% more vacancies per unemployed person than the national average*, indicating a particularly tight labour market there[20]. However, other regions also report shortages in construction trades, especially as many workers migrate internally to higher-paying projects or abroad. This regional dynamic means rural areas might lose workers to cities, exacerbating local skill gaps.

Gender Disparities in Data

The gender imbalance in construction is stark in the institutional data. According to Statistics Lithuania, *construction has the highest share of male workers of any sector - 91.4% in 2022*[21]. This has barely changed over time and reflects long-standing trends. Women make up under 9% of construction workers in Lithuania, a figure that includes all roles (from labourers to engineers). It is worth noting that women in construction are often concentrated in certain job types, such as administrative roles, design/engineering, or finishing works, rather than manual trades. For instance, studies in other countries have found women more represented in office jobs or as architects/engineers, and much less so as onsite craft workers[22]. In Lithuania, detailed breakdowns are not readily available in the public data, but it is telling that the *"most male-dominated" occupations nationally are plant operators and craft trades, which are 84% and 77% male respectively*[23] – these occupational groups include many construction jobs. Conversely, women dominate sectors like education or healthcare (over 80% female)[24]. This segregation suggests cultural and educational patterns steering men and women into different fields.

Policies and Data on Gender in Construction

While there are generally no gender-specific hiring policies in the sector, the Lithuanian government and EU have broader gender equality strategies. For example, the European Institute for Gender Equality (headquartered in Vilnius) has noted that Lithuania's overall gender equality index is improving but still below the EU average[25]. In construction specifically, there have been a few initiatives (often NGO or EU-funded projects) to encourage women's participation, but statistical data on their impact is

[18] https://eures.europa.eu/living-and-working/labour-market-information-europe/labour-market-information-lithuania_en
[19] https://www.lrt.lt/en/news-in-english/19/2568150/how-lithuania-opened-doors-to-labour-immigration-lrt-investigation
[20] https://www.oecd.org/en/publications/job-creation-and-local-economic-development-2024-country-notes_ad2806c1-en/lithuania_390d694b-en.html
[21] https://osp.stat.gov.lt/en/darbo-rinka-lietuvoje-2023/uzimtumas-nedarbas-ir-laisvos-darbo-vietos/uzimtumas
[22] https://www.conexpoconagg.com/news/women-in-construction-week-celebrates-diverse-work
[23] https://osp.stat.gov.lt/en/darbo-rinka-lietuvoje-2023/uzimtumas-nedarbas-ir-laisvos-darbo-vietos/uzimtumas
[24] https://osp.stat.gov.lt/en/darbo-rinka-lietuvoje-2023/uzimtumas-nedarbas-ir-laisvos-darbo-vietos/uzimtumas
[25] https://www.baltictimes.com/lithuania_makes_progress_in_gender_equality_but_still_trails_eu_average/

scarce. The data collected did include any available statistics on women in vocational training for construction – these indicate that relatively few women choose construction-related trades in education. According to a national report, *young men vastly outnumber young women in engineering and construction studies*, whereas the opposite is true in fields like health or teaching[26]. This educational pipeline issue contributes to the low share of women on construction sites.

3. Summary of Findings

The institutional data confirms that Lithuania's construction sector is facing a labour shortage: there are rising vacancy rates, numerous designated shortage occupations, and employers increasingly resorting to foreign recruitment. Simultaneously, the sector is characterized by a severe gender imbalance, with women holding less than one in ten jobs.

3.4 Montenegro

The construction sector in Montenegro represents a vital yet constrained component of the national labour market. As of 2024, it employs approximately 21,300 workers, representing about 7% of the active workforce (MONSTAT, ZZZCG). However, women remain markedly underrepresented, accounting for under 10% of the sectoral workforce and largely concentrated in design, supervision, and administrative roles rather than on-site positions. This gender imbalance is coupled with persistent and acute shortages of skilled labour in site-based trades such as masonry, carpentry, reinforcement, and finishing. Vacancy rates for these occupations remain high, while wage levels, though rising, still slightly trail the national average a factor that continues to deter new entrants.

1. Key Institutions

Labour market data and insights were collected from several national institutions including the Statistical Office of Montenegro (MONSTAT), the Employment Agency of Montenegro (ZZZCG), the Ministry of Labour and Social Welfare, the Ministry of Capital Investments, the Chamber of Economy, and leading education providers such as the Faculty of Civil Engineering in Podgorica and the JU Srednja građevinsko-geodetska škola "Inž. Marko Radević". Additional input was gathered from employer associations, trade unions, and NGOs working on gender equality and occupational safety.

2. Data Collection and Access to Official Statistics

Employment in the construction sector has steadily increased from 18,200 workers in 2019 to 21,300 in 2024, while the share of women rose from 7.5% to 9.0% over the same period. Average monthly wages in construction have also improved, from around €800 in 2023 to €984 by April 2025, slightly narrowing the gap with the national average (which stood at €1,009). Educational pathways remain male-dominated overall, though gender patterns differ across levels: in 2024, women made up 47.83% of undergraduate students at the Faculty of Civil Engineering in Podgorica and 58.12% of students in

[26] https://ccwestt-ccfsimt.org/wp-content/uploads/2023/06/Lithuania-National-Programme-for-Equal-Opportunities-for-Women-and-Men-2010-2014.pdf

construction VET programmes at the JU Srednja građevinsko-geodetska škola. Despite these promising enrolment figures, the transition of female graduates into site-based jobs remains limited.

Year/Month	Construction (EUR)	National Avg (EUR)	Gap (EUR)
2023 (avg)	800	838	-38
2025-01	976	1,004	-28
2025-04	984	1,009	-25

Table: Average wages in construction vs. national average, 2023–2025.

Employment has grown steadily since 2019. Female participation increased marginally but remains below 10%. Average wages rose in 2024–2025, slightly reducing the gap versus the national average. Education pipelines continue to be male dominated.

Year	Total Employment (construction)	Women (%)
2019	18,200	7.5
2021	19,000	8.1
2023	20,500	8.6
2024	21,300	9.0

Table: Employment in construction by sex, 2019–2024 (source: MONSTAT, ZZZCG).

Education Pipelines

While the overall construction workforce remains male-dominated, gender patterns within education show more balanced participation in some programmes. In 2024, women made up 47.83% of undergraduate students at the Faculty of Civil Engineering in Podgorica and 58.12% of students enrolled in construction VET programmes at the JU Srednja građevinsko-geodetska škola. Despite these encouraging enrolment levels, their transition into site-based construction roles remains limited.

Institution	*Programme*	*Women (%)*	*Men (%)*	*Year*
Faculty of Civil Engineering, Podgorica	*Undergraduate*	*47.83*	*52.17*	*2024*
JU Srednja građevinsko-geodetska škola	*Construction VET programmes*	*58.12*	*41.88*	*2024*

Table: Female enrolment in construction education pipelines (selected).

Analytical Notes and Additional Observations

Labour demand is pulled by EU-aligned infrastructure pipelines (transport corridors, energy efficiency retrofits), public–private investments, and a steady flow of residential

and tourism-related construction. Skill bottlenecks are most acute in site trades and technical supervision, while digital and green construction skills are in particularly short supply. Gender imbalance persists due to entrenched stereotypes, limited role models, and uneven workplace adaptation (such as sanitary facilities and PPE sizing). Wage convergence with the national average is ongoing but incomplete, which affects the sector's attractiveness for new entrants, especially women. The broader regional context (Croatia, Bosnia and Herzegovina, Albania) shows similar shortages, suggesting active regional labour mobility and competition for talent

3.Summary of Findings

The evidence indicates that Montenegro's construction sector is expanding but hampered by skill shortages and gender imbalances. Demand is fuelled by EU-aligned infrastructure pipelines particularly transport corridors and energy-efficiency retrofitting yet training capacity in green and digital construction skills lags behind labour market needs. Cultural stereotypes, limited female role models, a shortage of gender-sensitive personal protective equipment (PPE), and the lack of adapted workplace facilities continue to hinder women's participation on sites. Employers and public agencies emphasise the urgency of building new talent pipelines and integrating gender criteria into recruitment, training, and public procurement. Addressing these challenges will require a coherent package of measures, including targeted scholarships and apprenticeships for women, gender-sensitive OSH standards, site adaptation, mentorship schemes, and partnerships between schools, ZZZCG, and leading firms. Without such interventions, the sector will remain constrained by structural shortages and an underutilised female talent pool despite its significant growth potential.

3.5 Germany

The German construction sector ("Bauwirtschaft") is a significant employer. In 2023 it accounted for roughly 2.6 million workers, about 5 - 6% of all employed persons. This workforce is spread across ~360,000 construction enterprises, generating around €430 billion in annual turnover (2023). The vast majority (over 75%) of construction workers are employees in socially insured jobs, with the remainder being self-employed. The industry's employment grew steadily through the 2010s amid a long building boom, but growth has recently decelerated (only +0.5% in 2023).[27]

1. Key Institutions

In Germany, multiple institutions collectively shape the construction sector's labour market, training system, and efforts toward gender inclusion. The Federal Statistical Office (Destatis) and the Federal Employment Agency (Bundesagentur für Arbeit, BA) monitor industry employment and training trends, providing official data and analysis on the construction workforce. Vocational education and training policy is guided by the Federal Institute for Vocational Education and Training (BIBB), a national centre of excellence that anticipates skill needs and develops modern training standards for construction trades. Labour conditions and industry regulation fall under the Federal Ministry of Labour and Social Affairs (BMAS), which steers employment policy and

[27] Sources: statistik.arbeitsagentur.de, bauindustrie.de, demografie-portal.de

worker protections in the sector. A dedicated Ministry for Housing, Urban Development and Building (BMWSB) further oversees construction policy and has actively championed initiatives to attract more women into construction occupations. Additionally, the German Construction Industry Federation (Hauptverband der Deutschen Bauindustrie – HDB) collaborates with these public bodies in workforce development – it compiles sector statistics and runs programs (such as the "FrauenNetzwerk-Bau" for women in construction) – underscoring a broad alliance of state and industry institutions addressing employment, training, and gender equality in construction

2. Data Collection and Access to Official Statistics

Gender Breakdown – Persistent Imbalance

Women remain severely underrepresented in German construction. Only about 14% of the construction workforce is female as of 2024. In core construction trades (the *Bauhauptgewerbe*, e.g. structural and civil engineering firms), the share is even lower – roughly 11%, the lowest female participation of any major economic branch. On building sites and manual trades, women are a rarity: just 1.9% of skilled trade workers on construction sites are female, a figure that has inched up by only ~0.6 percentage points in the last decade. This indicates that traditional gender roles persist strongly in field occupations. Female participation is *slightly* higher among apprentices and entrants, but still very low – women made up only 3.5% of apprentices in main construction crafts recently (circa 2.8% a few years earlier). In contrast, women are better represented in planning, engineering and management roles associated with construction. About 27% of professionals in construction planning and supervision (e.g. architects, site managers) are female, up from ~21% a decade ago. Similarly, women comprise roughly 28% of civil engineers working in construction companies (and as high as 46% of civil engineers in public sector roles). The talent pipeline has been improving: 30% of civil engineering students in Germany were female in 2023, compared to ~22% twenty years prior. Furthermore, in architecture and real estate degree programs women are now near or above parity (45–58% of students). These figures show gradual progress in gender diversity among technical professionals, yet on the building site itself the workforce remains overwhelmingly male. Notably, a historical legal ban contributed to this imbalance: in West Germany women were barred by law from many construction site jobs until as late as 1994. Though that restriction is gone, cultural norms and workplace conditions have continued to deter women from trades careers, leaving a "nearly women-free zone" on German building sites.[28]

Vocational Training and New Entrants

A worrying trend is the decline in young entrants to construction careers in recent years, exacerbating future labour shortages. New apprenticeship contracts in construction trades fell by 4.7% in 2023 - 24, marking the second consecutive annual decline in trainee intake. Similarly, the number of students beginning civil engineering degrees dropped ~1.8% in 2023. The construction industry faces difficulty attracting youth: there are now more than two apprenticeship positions for every one applicant in construction, far higher than the economy-wide ratio (~1.3 jobs per applicant). In other words, training slots are going unfilled. Surveys by SOKA-Bau (the industry's social fund) confirm that *lack of suitable candidates* is the primary hurdle – many firms report few or no qualified young people applying, and some have had poor experiences with trainees (e.g. high

[28] Sourcses: rkw-kompetenzzentrum.de, rkw-kompetenzzentrum.de, bmwsb.bund.de,

dropout rates). Despite an uncertain market, 75% of construction firms still plan to train apprentices in 2024 (only one-quarter expect to forgo hiring trainees)bauindustrie.de, indicating employers' strong demand for talent. Industry leaders stress that the need for new skilled workers is enormous, and companies are eager to "give everyone a chance" in training. In fact, the sector has bolstered apprenticeship incentives: the latest collective bargaining agreement raised pay for apprentices, now offering *the highest training stipends of any industry* in Germany. There are also ongoing efforts to tap new talent pools, for example recruiting more young people with migrant backgrounds or refugees. Notably, 3,630 people from war-and-crisis-affected countries began a construction apprenticeship in 2023, a sharp rise from only ~1,100 such trainees in 2016. This reflects integration initiatives to channel refugees into construction careers as one remedy for skill shortages.[29]

Labour Shortages and Foreign Workforce

Even before the recent dip in construction activity, German builders have faced persistent skilled labour shortages, which remain a critical challenge. In late 2024, over 53% of construction firms reported difficulty filling vacancies (and as many as 61% in civil engineering sub-sector). Another survey found fully 80% of building contractors still struggling to hire despite a slight economic slowdown - a testament to how structural the skill gap is. The unemployment rate in construction trades is now extremely low: on average in 2024 only about 50,000 construction-skilled workers were registered unemployed, which is *80,500 fewer* than in 2009.This dramatic decline in available labour since the late-2000s trough underscores that the sector has effectively "run out" of domestic skilled labour reserves. Vacancies remain high - nearly half of all job postings for skilled workers in Germany are in officially designated shortage occupations, a category that includes many construction and craft roles. The Federal Employment Agency (BA) continues to list construction and skilled trades among fields with acute hiring difficulties. In 2024, Germany still had approximately 1.5 million total job openings across the economy (down from 1.8m the year prior), and construction makes up a significant share of these unfilled jobs.[30] To meet demand, the sector has grown increasingly reliant on foreign labour. Immigrant and foreign workers now constitute roughly 24% of the construction workforce (main construction sector, 2023), up from only 8% in 2009. In absolute terms, over 200,000 more foreign nationals are working in German construction than a decade ago. In addition, German firms make heavy use of posted workers from abroad: about 86,000 workers were posted to German construction sites in 2024, a number that has surged by 67% since 2009. These posted workers (often from other EU countries in Eastern Europe) fill short-term needs but also highlight structural shortages of domestic labour. Across Europe, reflecting in Germany as well, the flip side of reliance on foreign labour are concerns about working conditions – the industry has seen cases of exploitation and wage undercutting via complex subcontracting chains and cross-border postings. Nonetheless, sustaining output has clearly required tapping international labour pools, given the insufficient supply of local skilled workers. Even with foreign help, the sector faces a shortfall of up to 100,000

[29] bauindustrie.de; https://www.bauindustrie.de/pm/bau-in-der-nachwuchsklemme#:~:text=Zum%20zweiten%20Mal%20in%20Folge,auch%20auf%20die%20Nachwuchssituation%20durchschl%C3%A4gt;

[30] https://www.reuters.com/markets/europe/labour-shortages-ease-germanys-economy-survey-shows-2024-12-19/#:~:text=demand%20for%20personnel%20and%20at,same%20time%20reduces%20labour%20shortages; https://www.bauindustrie.de/zahlen-fakten/publikationen/brancheninfo-bau/verdienste-in-der-bauwirtschaft#:~:text=neben%20einem%20Nachholeffekt%20,vergangenen%20Jahres%20befragten%20Bauunternehmen%20an; https://www.arbeitsagentur.de/presse/2025-25-qualifizierte-fachkraefte-weiterhin-gesucht; https://www.reuters.com/markets/europe/labour-shortages-ease-germanys-economy-survey-shows-2024-12-19/#:~:text=companies%20are%20having%20difficulty%20finding,DIHK%20said%20in%20its%20report;

skilled workers by 2030 if current trends persist. This forecast, published by industry leaders, underscores that attracting new talent - especially women - is not simply about diversity but an economic necessity. Indeed, the HDB (BAUINDUSTRIE)'s vice-president Jutta Beeke bluntly stated that the industry "cannot afford to leave half the (female) talent on the sidelines" in face of such shortages.[31]

Wages and Working Conditions

One outcome of the labour squeeze has been rising wages in construction. To attract and retain employees, construction pay has climbed significantly in the past decade. In April 2024 the average gross monthly earnings in main construction (Hoch-und Tiefbau) reached about €4,397 (excluding bonuses) roughly on par with the national average. These average masks a range from about €3,276 per month for entry-level helpers up to €7,272 for highly skilled "experts". Including bonuses and premiums, the amount rises above €4,900/month. Since 2007, construction wages have increased ~58% in nominal terms, outpacing wage growth in manufacturing and narrowing a historic pay gap. At one point in 2020, construction wages averaged 97% of manufacturing levels (up from ~85% in 2007), though this relative position has fluctuated with economic swings (during 2023 they dipped to ~88% of manufacturing pay as industry wages rebounded). In 2024, construction wages jumped nearly 10% year-on-year far above economy-wide wage growth - as firms competed for scarce workers. This above-average pay rise reflects both a catch-up effect after years of labour shortfalls and deliberate efforts by employers to make construction jobs more attractive. Notably, a survey by the ifo Institute found that even in mid-2024, four in five construction companies reported unfilled positions despite higher pay offers.32 It is worth noting that collectively bargained wage floors in the industry are high relative to many sectors. As of 2024, a qualified construction worker (with a 3-year apprenticeship) had a starting hourly wage around €25 (West Germany) under the main collective agreement. The highest wage bracket for qualified workers reaches about €28.60 per hour (≈€7,600 monthly) in western regions. East German rates, historically lower, are now nearly aligned due to recent agreements to close the gap. All construction workers enjoy a 40-hour week and 30 days paid leave by contract. The gender pay gap in the German construction sector remains notable. According to 2020 data, female construction employees earned approximately €42,163 on average, while male employees earned €45,044. This disparity is primarily attributed to women's underrepresentation in the highest-paid manual roles within construction. While women are more concentrated in administrative, planning, and managerial roles, these positions, although salaried, still offer lower pay compared to physical trades like carpentry, plumbing, or masonry, which command higher wages. It is important to highlight that the pay gap in construction could be less pronounced than in some other industries, but equal pay for equal work remains a significant issue that requires continued attention. Improving working conditions, such as providing appropriate sanitary facilities, anti-harassment policies, and gender-sensitive support structures, is crucial for creating a more inclusive environment that could attract more women into the sector.[33]

[31] https://www.bauindustrie.de/; https://buildbetterlives.eu/2023/11/15/blog-cant-be-a-renovation-wave-in-europe-without-workers/#:~:text=But%20the%20construction%20industry%20is,enforce%20existing%20legislation%20and%20collective; https://www.rkw-kompetenzzentrum.de/innovation/blog-1/frauen-am-bau/#:~:text=Themen%20wie%20Nachhaltigkeit%20und%20Ressourcenschonung,sind;

[32] https://www.bauindustrie.de/zahlen-fakten/publikationen/brancheninfo-bau/verdienste-in-der-bauwirtschaft#:~:text=Im%20Hoch,durchschnittliche%20Bruttomonatsverdienst%20vergleichsweise%20niedrig%20aus;

[33] https://www.destatis.de/DE/Themen/Arbeit/Verdienste/Tarifverdienste-Tarifbindung/TDB/_TDB/tarifinfo-baugewerbe.html#:~:text=Im%20Baugewerbe%20liegt%20der%20tarifliche,7%C2%A0662%20Euro%20beziehungsweise%207%C2%A0559%20Euro; https://blog.bluebeam.com/de/frauen-im-

3. Summary of Findings

German construction finds itself at a crossroads: it is a large and vital industry with high labour demand, but it faces chronic skills shortages and a stark gender imbalance. The workforce is aging and increasingly filled by migrant labour, while half of the domestic talent pool (women) remains largely untapped on site. The data suggests that without significant changes – from education outreach to workplace culture – the gap between labour needs and supply will widen, threatening the industry's capacity to deliver on housing, infrastructure, and climate targets. These challenges have prompted a range of strategies and initiatives at both national and EU levels, discussed next, to draw more people (especially young women) into construction and to up-skill the workforce for the future.

3.6 Bosnia and Hercegovina

Bosnia and Herzegovina consists of two entities: the Federation of Bosnia and Herzegovina and Republika Srpska, and the Brčko District. The Federation is further divided into 10 cantons, each with its own authority over labour and education. Women constitute a clear minority in the construction sector in Bosnia and Herzegovina. According to estimates, women account for approximately 10% of the total construction workforce. In 2020, 40,450 individuals were employed in the construction industry in BiH, implying that only a few thousand of them were women. Data from the entity of Republika Srpska illustrates a modest increase in female participation in recent years: in 2019, there were only 1,249 women employed in the construction sector in RS, and by 2024, this number had risen to 1,695. Nevertheless, despite this growth, women still comprise only a small fraction of the overall construction workforce. According to the latest data from the Agency for Statistics of Bosnia and Herzegovina, at the end of September 2023, a total of 40,813 people were employed in the construction sector in Bosnia and Herzegovina (including 4,291 women). Women employed in the construction sector are most commonly engaged in administrative, office-based, or technical support roles, while they are significantly less represented on-site as construction workers or site engineers. A report by the EBRD notes that female engineers make up around 10% of the sector's workforce, emphasizing that they are underrepresented in engineering and site-based roles, and are mainly concentrated in administrative functions.

1. Key Institutions

Addressing labour shortages and gender disparities in the Bosnian construction sector requires a grounded understanding of the national labour landscape and the roles of institutional actors in monitoring and shaping employment trends. The construction sector, employing approximately 40,800 workers as of September 2023, including 4,291 women, represents about 5.2% of total employment in Bosnia and Herzegovina and remains a sector with persistent skill gaps and low female participation (BHAS),

The foundational step in this research process involved identifying institutions with access to detailed and disaggregated employment data. Among the most relevant were

baugewerbe/#:~:text=Image%3A%20Durchschnittlicher%20Bruttojahresverdienst%20im%20Baugewerbe,auch%20im%20Baugewerbe%20ein%20Thema

the Agency for Statistics of Bosnia and Herzegovina (BHAS), the Federal Employment Institute, the Employment Service of Republika Srpska, cantonal employment bureaus, and the Ministry of Civil Affairs of BiH , alongside entity-level ministries for labour, education, and construction. Each holds distinct but complementary datasets relevant to construction-sector employment, labour shortages, and gender imbalances.

Each holds distinct but complementary datasets relevant to construction-sector employment, labour shortages, and gender imbalances.

Additional perspectives came from secondary technical schools, vocational training centres, and universities offering civil engineering programmes, such as the Faculty of Civil Engineering at the University “Džemal Bijedić” in Mostar and International Burch University as well as public companies like JP Autoceste FBiH . These institutions were crucial not only for their statistical data but also for their insights into occupational trends, skills gaps, and initiatives targeting women’s participation in the industry.

2. Data Collection and Access to Official Statistics

Although all employment services across Bosnia and Herzegovina were contacted, not all of them provided responses. As a result, it is not possible to present a fully comprehensive picture of the current situation nationwide. However, the data obtained from those services that did respond offer valuable insights into the status of unemployed individuals within the construction sector, disaggregated by gender.

The breakdown of unemployed individuals in the construction sector by canton is as follows:

- Zenica-Doboj Canton: 476 women (21%) and 1,804 men (79%), totalling 2,280 individuals.
- Tuzla Canton: 344 women (26%) and 1,001 men (74%), totalling 1,345 individuals.
- Posavina Canton**:** 164 women (60%) and 109 men (40%), totalling 273 individuals.
- Herzegovina-Neretva Canton: 172 women (22%) and 606 men (78%), totalling 778 individuals.
- Bosnian-Podrinje Canton: 10 women (14%) and 64 men (86%), totalling 74 individuals.

Unemployment data from Zeničko-Dobojski Canton (ZDK) also reveals that women represent only 10.5% of jobseekers with craft qualifications in construction-related fields, highlighting a significant gender gap at the level of practical trades. The Employment Service of Republika Srpska provided data on the number of individuals from the construction sector who were removed from the unemployment register during 2024. While it cannot be confirmed with certainty, this is commonly interpreted as an indication that these individuals have gained employment. According to the data, a total of 1,223 persons were removed from the register, of whom 1,082 were men (88.5%) and 141 were women (11.5%). In addition to public authorities, data was collected from secondary technical schools and faculties offering civil engineering programmes. Notably, the Faculty of Civil Engineering at the University “Džemal Bijedić” in Mostar reported a total of 164 enrolled students. Of these, 86 were women (52.44%) and 78 were men (47.56%), marking a rare instance of female majority in a construction-related higher education programme in Bosnia and Herzegovina. Out of the secondary schools and universities providing education in the field of construction that were contacted, three schools and

two faculties responded with data on the current number of enrolled students, disaggregated by gender, as follows:

- Public Institution Combined Secondary School (JU MSŠ Tuzla):
  - 744 female students (53%)
  - 648 male students (47%)
  - Total: 1,392 students
- Public Institution Combined Secondary School Kladanj (MSŠ Kladanj):
  - 69 female students (38%)
  - 112 male students (62%)
  - Total: 181 students
- Public Institution Combined Secondary School Gračanica (MSŠ Gračanica):
  - 140 female students (53%)
  - 122 male students (47%)
  - Total: 262 students
- Faculty of Civil Engineering, University "Džemal Bijedić" in Mostar:
  - 86 female students (52%)
  - 78 male students (48%)
  - Total: 164 students
- Faculty of Engineering and Natural Sciences, International Burch University:
  - 447 female students (38%)
  - 733 male students (62%)
  - Total: 164 students: 1,180

3. Summary of Findings

The collected data, though incomplete due to the limited response from employment services across Bosnia and Herzegovina, still reveal important patterns regarding gender dynamics in the construction sector. In all reporting cantons, men significantly outnumber women among unemployed individuals with construction-related qualifications. Particularly striking is the situation in the Zenica-Doboj Canton, where women constitute only 21% of unemployed individuals in the construction sector, and just 10.5% among those with craft-level qualifications, underlining a pronounced gender gap in vocational trades. The data from the Republika Srpska Employment Service further support this trend, with only 11.5% of individuals removed from unemployment registers (potentially indicating employment) being women. These figures point to systemic barriers facing women not only in accessing jobs in construction, but also in entering and staying within the sector. In contrast, data from educational institutions present a more nuanced, and in some cases encouraging picture. Several secondary schools and one university report a majority of female students enrolled in construction-related programmes, with the Faculty of Civil Engineering at the University “Džemal Bijedić” in Mostar even recording a female majority (52.44%). Similarly, schools such as JU MSŠ Tuzla and MSŠ Gračanica show that female students slightly outnumber their male peers. These findings suggest that interest among young women in construction education is growing, potentially shifting future gender dynamics in the sector. However, the gap between education and employment remains significant the higher enrollment of women in education is not yet translating into equal representation in the labor market. This underscores the importance of continued support and targeted measures to bridge this divide and ensure that women who choose construction as a field of study are not lost to the sector before they even enter the workforce.

3.7 Albania

The construction sector in Albania is going through a difficult phase, facing two main challenges that are closely linked: a serious shortage of skilled workers and a noticeable gender imbalance. These problems are not new, and they are not unique to Albania, but they are becoming more visible and urgent. First, there is a growing lack of qualified workers. Many experienced construction workers are getting older and retiring, while many young people are either leaving the country or choosing different careers. Construction is no longer seen as an attractive or stable job option. Vocational schools that train people for these jobs are not getting enough students, and many young people prefer to study at universities instead. This leaves the sector without the fresh workforce it needs to grow and function properly. Second, there is a strong gender gap in construction. The industry is still seen as a "man's job," and very few women are working in it -especially in roles that involve physical work, engineering, or being present at construction sites. Most women in this field are found in offices or doing administrative tasks. Social norms, lack of role models, limited support for women in technical training, and even safety concerns make it difficult for women to enter and stay in construction jobs. These two challenges feed into each other: the shortage of workers is made worse by the fact that half the population, women, is largely left out. If the sector became more open and inclusive, it could benefit from a wider and more diverse workforce. This report explores how big these problems are in Albania, what is causing them, and what solutions can be proposed. It relies on official statistics, reports, and research from institutions, as well as interviews with employers, educators, young people, and experts. The aim is to provide a full picture of the current situation and to suggest realistic ways forward that can help improve both the workforce and gender equality in this important sector.

1. Key Institutions

In Albania, multiple institutions collectively shape the construction sector's labour market, training system, and efforts toward gender inclusion. For various years the sector was under the Ministry of Labour, then Ministry of Finance. Finally, in January 2024, a new Ministry of Economy, Culture and Innovation (MEKI) was established to provide legal and policy guidance to the sector. Within the ministry it functions the National Agency for Employment and Skills (NAES) which is responsible for the implementation of all government programmes to support employment, VET high schools and VET Centres. NAES provides services to employment seekers, while companies are legally bound to register their free job position to twelve Regional Employment Offices. The National Agency for Professional Education, Training and Qualifications, is responsible for setting the curricula and training programmes for VET High Schools, VET Centres and VET providers. This completes the institutional framework in terms of employment, education and training. The National Institute of Statistics (INSTAT) monitors and reports data on current employment, education and training and its trends. The National Inspectorate of Labour, which is an independent government institution, oversees all aspects of employment and labour safety standards, age requirements, health, work conditions etc. The Ministry of Health and Social Protection, among others, is responsible for promoting gender equality legislation and policies, while it leads and coordinates the gender machinery in the country. Currently the Ministry is changing the Law on Gender Equality to strengthen and expand the gender equality machinery. The National Constructors

Association is an interest-based NGO that provides a platform for bringing together companies working in the construction sector in Albania, while promoting their interests and rights. There are two trade unions that defend the workers rights in the construction sector, but none for women in construction. Recently the Chamber of Commerce of Tirana supported the establishment of the Women's Chamber, which could play a positive role for women who lead companies and boards in construction.

2. Data Collection and Access to Official Statistics

Gender Imbalance - Extent and Causes

The gender gap in Albania's construction sector mirrors broader European trends but is even more pronounced. National data confirms that women remain largely absent from construction jobs. INSTAT data shows that over the past decade, less than 5% of the workforce in construction has been female, with most women employed in support roles (e.g., administration, accounting) rather than fieldwork. Moreover, vocational education pathways leading to construction jobs remain overwhelmingly male-dominated. In 2021, fewer than 600 female students were enrolled in construction-related vocational schools, compared to over 4,000 male peers.
This imbalance contributes directly to the persistent labor shortages plaguing the sector. As in the EU, women in Albania are often concentrated in occupations experiencing labor surpluses (education, services), while men dominate high-demand fields like engineering and construction. This misalignment suggests an underutilized labor force: increasing female participation in construction could help ease workforce deficits. Numerous barriers hinder women's entry and retention. Cultural perceptions of construction as "men's work" remain deeply rooted in Albanian society. Girls receive little exposure or encouragement to pursue technical or construction careers, both in school and at home. Women who do enter the sector often encounter a male-dominated work environment with limited facilities, little flexibility, and few female peers or mentors. Anecdotal reports from NGOs and career counsellors point to discrimination during hiring and promotions, as well as a lack of gender-sensitive policies. While Albania lacks systematic national studies on women in construction, the challenges they face likely mirror those documented elsewhere: stereotypes, poor working conditions, and a lack of institutional support. Unless addressed, these barriers will continue to perpetuate both the gender gap and labor shortages in one of Albania's most vital economic sectors.

Overview of Key Data and Trends

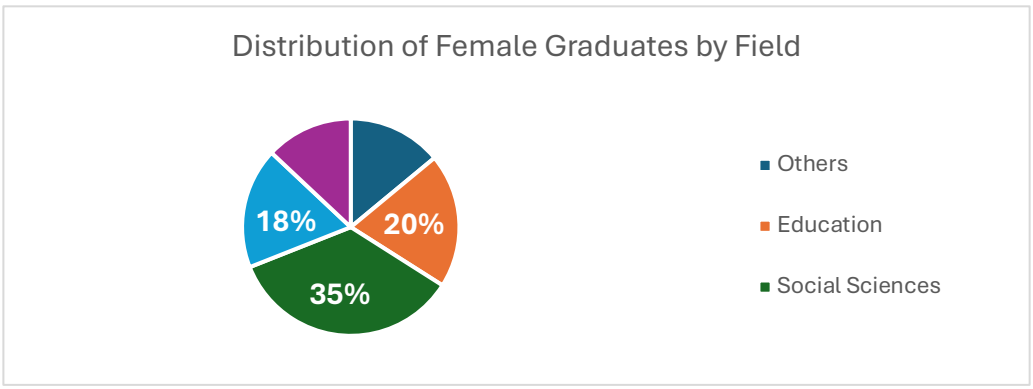

Figure 1: *Distribution of Female Graduates by Field*

According to INSTAT, although women make up 65.2% of tertiary graduates in Albania, only 13% graduate in fields related to engineering, manufacturing, and construction. The gap is even more significant in vocational secondary education, where the number of female graduates in construction-related disciplines is a small fraction compared to their male peers. In 2015–16, only 538 female students graduated from construction programs versus 4,705 males.

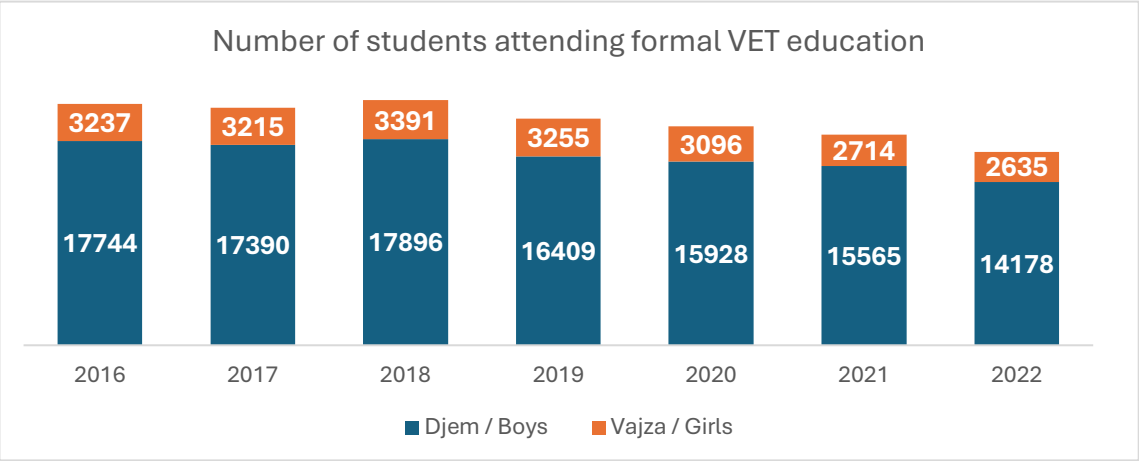

Figure 2: *Distribution of male-female students in vocational education and training*

Figure 2 illustrates the gender distribution of students enrolled in formal vocational education (VET) in Albania. While VET enrollment remains low overall—approximately one student in VET for every 4.5 students in general secondary education (gymnasium)—a more pressing concern is the significant gender disparity. Girls represent only 18.6% of all VET students. When viewed in the broader context of secondary education, just 5.8% of all female students in Albania are enrolled in vocational programs, highlighting a critical gap in access and participation for young women in this educational pathway.

Employment in Construction: A Gendered Landscape

The construction sector currently employs approximately 82,000 people, or about 7% of the national workforce. However, the sector is overwhelmingly male: women constitute only 3–10% of the construction workforce, and most of them are employed in non-manual roles such as administration, engineering design, or project coordination. Despite economic expansion, the sector has not succeeded in translating growth into inclusive employment. Informality remains high-up to 60% in some estimates, which poses additional barriers for women, who often seek formal, regulated employment with adequate protection. Despite a gradual increase in the number of female vocational construction graduates-from 538 in 2015 to 710 in 2024-women remain significantly underrepresented in this field. Female graduates consistently make up only about 12-15% of the total, highlighting a persistent gender imbalance. This gap points to ongoing barriers limiting women's access or interest in vocational construction programs, a traditionally male-dominated sector. While the slow upward trend in female graduates is encouraging, much more effort is needed to achieve meaningful gender parity and to

create an inclusive environment that attracts and supports more women in construction careers.

Economic Weight of the Sector

Construction contributes roughly 14% of Albania's GDP and accounted for 19.1% of total national expenditure in 2023, placing it among the highest in Europe in terms of construction spending relative to GDP. Nonetheless, this growth has not been matched by proportional increases in employment, especially for women. The building sector is one of the most important not only for the economy of the country, but also in terms of employment and the impact that it has on society. During the communist regime building sector, especially for private use, it was almost non-existent, and lack of housing made the sector boom after the collapse of the system. Large cities, especially Tirana, have seen their city landscape totally changed within a decade. With the development of tourism, especially in the Albanian beautiful seaside, has brought increased national and international investment for new hotels and residences. Figure 5 shows the number of permissions for buildings and their distribution according to the type of structure or purpose. Although there has been an increase of foreign capital and foreign companies entering the Albanian building sector, the market remains dominated by Albanian-led companies. INSTAT data shows that there is a positive trend of new companies being established year by year and the sector continues to grow, compared to 2019 for example when only four thousand companies were registered. Permissions for Residential buildings still make the bulk of the sector, followed by non-residential ones, while a very small section is made of permissions for community buildings, for a social purpose, like schools, kindergartens, social centers etc.

Structural and Cultural Barriers

Socio-cultural norms continue to paint construction as a "man's profession." Girls are rarely encouraged to pursue technical education, and even when they do, they face isolation and lack of peer support in male-dominated environments. Basic infrastructure such as separate restrooms, tailored protective gear, and workplace safety measures for women are often lacking on construction sites.
Women also face higher risks of workplace harassment, further deterring entry into the sector. These barriers, while subtle, have a cumulative effect on discouraging female participation and retention in construction roles.

Labor Shortage Indicators

Skilled trades such as masonry, welding, electrical work, concrete finishing, and civil engineering are in high demand. Job listings and data from the Ministry of Economy, Culture and Innovation indicate chronic difficulty in filling such roles. Employers consistently report an insufficient number of qualified candidates.

Sector	Key Shortage Indicators
Labour force lost to emigration	~429,000 people past 13 years
Agricultural jobs lost (Q2 2021)	29,800 positions
Reported vacancies in manufacturing	25,000+ openings
Youth unemployment	~19% (Q4 2024)
Unfilled positions in hospitality, construction, health, agriculture	High, recurrent shortages

Role of Foreign Workers

Due to the labor gap, construction companies are increasingly hiring foreign workers from Central Asia and the Western Balkans. Work permit applications for these roles have increased, particularly in urban centers like Tirana and Durres. Recruitment agencies play a key role in facilitating this migration.

3. Summary of Findings

Albania's construction sector faces two interconnected challenges: a chronic shortage of skilled labour and a stark gender imbalance. An ageing workforce, persistent emigration, and declining interest among youth in construction careers have left the sector unable to meet rising economic and infrastructure demands. Vocational education remains underutilized, with low enrolment and limited pathways into technical trades, further constraining workforce supply. Women are significantly underrepresented, constituting less than 5% of the construction workforce and primarily employed in administrative roles. Although women account for 65% of tertiary graduates nationally, only 13% complete engineering or construction-related programs. In vocational education, female participation remains below 20%, with only gradual improvement over the past decade. Cultural norms, workplace barriers, and limited institutional support continue to discourage women from entering and remaining in construction jobs. Despite contributing 14% to GDP and absorbing nearly 20% of national expenditure, the sector's labour needs are increasingly met by foreign workers from Central Asia and neighbouring Balkan countries. Without systemic reforms improving VET attractiveness, promoting women's inclusion, and creating gender-sensitive policies the sector risks sustained workforce deficits and underutilization of domestic talent.

4. Policy Frameworks on Women and Labour Dynamics in Construction

4.1 European-Level Strategies and Insights

At the European Union level, addressing labour shortages and promoting gender equality in the construction sector are recognized as critical components of economic resilience, digital and green transitions, and social inclusion goals. Key frameworks such as the **European Skills Agenda (2020)** and the **European Pillar of Social Rights Action Plan**

(2021) set priorities for improving skills matching, strengthening vocational education and training (VET), and ensuring inclusive access to labour markets, including in traditionally male-dominated sectors like construction. The **European Year of Skills 2023** specifically emphasized construction as a priority sector facing acute skill shortages, advocating for upskilling, reskilling, and gender-inclusive recruitment campaigns. According to the **European Construction Sector Observatory (ECSO)** reports (2015–2022), the EU encourages Member States to integrate measures promoting the participation of women in construction, including awareness-raising campaigns, scholarships for women in technical education, and workplace reforms aimed at eliminating gender bias and improving retention. Furthermore, the **Green Deal** and the **Renovation Wave Strategy** (2020) stress the need for a massive workforce expansion in construction to achieve energy efficiency targets, further intensifying the urgency to mobilize underrepresented groups, especially women, to fill emerging roles in green construction. The **Council Recommendation on Vocational Education and Training (2020)** promotes gender equality explicitly as a cross-cutting principle in building modern VET systems suited to future labour market needs, particularly in fields like construction, where digital and environmental skills are becoming critical. Despite strong strategic direction from the EU level, the implementation of gender equality goals within the construction sector remains uneven across Member States. While some countries (e.g., Sweden, Denmark) have adopted ambitious national strategies to promote women's participation in construction, in others the translation of EU-level priorities into sectoral policy and practice remains limited. **The Renovation Wave and Skills Agenda** - At the European level, the policy spotlight is on *scaling up the construction workforce* to meet ambitious goals like the EU Renovation Wave. Launched under the European Green Deal, the Renovation Wave initiative aims to double the annual rate of building renovations for energy efficiency and climate targets, with a goal to renovate 35 million buildings by 2030. This massive endeavour is projected to create huge labour demand across EU construction. A study commissioned by the European Federation of Building and Woodworkers (EFBWW) estimates that up to 1.5 million additional construction workers will be needed EU-wide between now and 2030 *just for building and energy renovations*, on top of 1.3 million workers needed to replace an ageing workforce reaching retirement. In total, Europe may need well over 2 million new workers in construction this decade when considering growth and replacement needs. EU leaders recognize that *"there can't be a Renovation Wave without workers"*. This has elevated skills shortages to a continental concern. The European Commission's European Skills Agenda (2020–2025) provides a framework to address such gaps. One flagship action of the Agenda is the Pact for Skills, a partnership-based approach to upskilling and reskilling workers in key sectors. In late 2022, the construction industry's European social partners (European Construction Industry Federation, European Federation of Building and Woodworkers, and European Builders Confederation) launched a dedicated "Pact for Skills in Construction", initiated by the European Commission. This pact calls on stakeholders – employers, unions, educators, public authorities – to commit to concrete actions for skills investment in construction. It sets out five key principles, "including building strong training partnerships, anticipating future skill needs" (especially for green and digital construction skills), and "working against discrimination and for gender equality" in the sector. Attracting more women and young people into construction trades is explicitly one of the Pact's objectives. The EU has backed such efforts with funding and awareness campaigns. Notably, 2023 was declared the European Year of Skills, which saw numerous events and programs highlighting vocational training opportunities, including in construction. Under the Skills Agenda, initiatives like Blueprint for Sectoral Cooperation on Skills - Construction have been

implemented, bringing together multiple countries to develop common training curricula for energy-efficient building, circular construction, and other needed competencies.[34] Crucially, the EU's strategy is not only about training more workers but also about improving job quality to retain them. The Renovation Wave communication stresses modernising vocational education with "green skills" and ensuring that new jobs are *quality jobs*. A concern can be raised that rushing untrained labour onto sites (to meet renovation targets) could lead to accidents or poor workmanship – for example, many renovation projects involve asbestos removal and advanced insulation tasks that require specialized training. The EU therefore encourages member states to integrate updated training (e.g. on safe handling of hazardous materials, energy systems) and to raise attractiveness of construction careers. In this vein, the European Commission and Parliament have also promoted women's participation in STEM and technical fields as part of the solution. While not construction-specific, the EU Gender Equality Strategy 2020–2025 and related resolutions emphasize breaking gender stereotypes in education and careers. Moreover, the EU Directive on Women in Leadership (adopted 2022) sets targets for female representation on company boards, which will also apply to large construction firms and may catalyse more women advancing to leadership in the sector (Germany is implementing this at national level). "Germany's Leadership Positions Act (FüPoG) mandates a 30% female quota on boards to push gender balance, despite criticisms that it disrupts 'meritocracy' and may implement conflict in the workplace. Supporters say: it's time to shake up the status quo-equality won't happen without a nudge."[35] Finally, the EU cohesion funds and Recovery Plan are providing financial support for training programs: for example, the European Social Fund+ co-finances apprenticeships and inclusion programs in member states, and Erasmus+ has funded exchanges and projects like *"Women Can Build" and FEMCON, as well as Women Empowered in Construction* (a transnational project to encourage women in construction trades). In summary, Europe's approach couples its green infrastructure agenda with a skills and inclusion agenda – acknowledging that achieving climate goals (like the Renovation Wave's millions of retrofits) hinges on expanding the construction workforce and diversifying it by bringing in more women, migrants, and young people.[36]

.

[34] https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/renovation-wave_en#:~:text=Renovation%20wave%20.energy%20renovations%20in%20the%20EU; https://buildbetterlives.eu/2023/11/15/blog-cant-be-a-renovation-wave-in-europe-without-workers/#:~:text=A%20study%20EFBWW%20has%20commissioned,read%20full%20report%20here; https://constructionblueprint.eu/other-initiatives/pactforskills/#:~:text=What%20is%20the%20Pact%20for,Skills;

[35] https://insights.morganphilips.com/en/women-on-boards-thoughts-about-the-leadership-positions-act

[36] https://femalesinconstruction.eu; https://womenfortech.eu/eu-adopts-directive-to-ensure-gender-equality-in-executive-positions/;

4.2 Ireland

Gender Inequity in the Irish Construction Sector — National Overview

According to the Central Statistics Office (CSO) Labour Force Survey (Q2 2022), women constitute approximately 9% of the total construction workforce in Ireland. Representation is especially low in on-site trades and craft apprenticeships, with female workers more frequently employed in administrative or support functions. The Construction Industry Federation (CIF) Membership Diversity Survey (2018) identified significant gender imbalances across member firms. Smaller enterprises were least likely to employ women, and female employees were disproportionately concentrated in non-technical roles.

European network summaries, such as Females in Construction country profiles, place Ireland among the lower-ranking EU Member States in terms of female participation in construction-related occupations, aligning with wider patterns of gender segregation in technical sectors. Professional body data (e.g., Engineers Ireland, Women in Technology and Science) report female representation in engineering and construction-related professional roles at approximately 12–17%, indicating pipeline challenges from STEM education into construction careers. Selected large firms, such as Walls Construction, have begun publishing Gender Pay Gap Reports and implementing targeted diversity measures. Reported female workforce shares in such firms remain low (10–14%), but these initiatives provide transferable best-practice models for recruitment, mentoring, and retention.
While national labour force and apprenticeship statistics are robust, disaggregated regional or county-level data on gender equity in construction are limited. Where available, such insights are typically embedded in local skills fora reports, employer outreach activities, or ETB/SOLAS apprenticeship datasets.

4.3 Croatia

In Croatia, labour shortages and gender imbalances in the construction sector are acknowledged in policy discussions; however, the systematic integration of strategies addressing these issues into national and local policies remains partial and fragmented. Nationally, the **National Development Strategy of the Republic of Croatia 2030** (Nacionalna razvojna strategija RH do 2030.) identifies construction as a strategic sector for economic growth, especially in the context of post-earthquake reconstruction and green transition. Nevertheless, the strategy addresses labour shortages primarily through the lens of general workforce development without explicit reference to gender integration in construction. The **Strategic Framework for the Development of Vocational Education and Training in Croatia 2021–2030** (Strateški okvir razvoja strukovnog obrazovanja I osposobljavanja) recognizes the need to modernize vocational programs to meet labour market needs, including in construction. It emphasizes promoting inclusion and equal opportunities but does not specifically address gender segregation in construction trades. Some measures to encourage greater participation of underrepresented groups in VET exist (e.g., support for scholarships for students in STEM and technical fields), but these are general and not construction specific. At the operational level, the **Operational Program Efficient Human Resources 2014–2020**

and its successor programs under **ESF+ 2021–2027** support projects aimed at improving employability, including for women and disadvantaged groups. Yet, specific initiatives targeting women's inclusion in the construction sector are rare. Most ESF-funded projects related to gender focus on entrepreneurship or general employment, not sector-specific challenges in construction. In terms of national research, studies such as the **Croatian Chamber of Economy (HGK) Sectoral Analyses (Sektor za graditeljstvo, 2023)** acknowledge the low share of women in construction (about 10.2% of the workforce), with a strong concentration in administrative roles rather than technical positions. However, these studies tend to describe the issue rather than proposing targeted strategies for improvement. No national action plan specifically addressing gender gaps in construction has been adopted so far. At the local level, city and county development strategies occasionally mention the need for stronger vocational education related to construction, but without systematic approaches to gender inclusion. For example, Zagreb's Development Strategy mentions support for technical education but does not include gender-specific measures in construction skills promotion.While Croatia aligns its labour and skills development policies with broader EU objectives, the targeted integration of gender equality measures within construction sector policies is limited. Strategies addressing labour shortages tend to be gender-neutral, and few concrete actions exist to dismantle the structural barriers limiting women's participation in construction occupations. A more deliberate policy effort is needed, including gender-sensitive labour market interventions, dedicated training programs for women in construction, and active employer engagement to foster inclusive workplaces.

4.4 Lithuania

At the national level, the Lithuanian National Progress Plan 2021–2030 identifies the construction sector as essential for national economic growth, infrastructure modernization, and sustainability initiatives. However, while the Plan broadly addresses labour market demands and skills mismatches, it does not explicitly tackle gender disparities within the construction industry. Similarly, the Lithuanian Strategy for Demography, Migration, and Integration (2018–2030) emphasizes the general necessity of workforce renewal through targeted immigration and re-emigration incentives but lacks specific measures to increase female participation in traditionally male-dominated sectors such as construction.

The **Lithuanian Action Plan for Equal Opportunities** (2023–2025) explicitly addresses gender equality across various employment sectors, advocating for equal pay and anti-discrimination practices. Nevertheless, it does not outline sector-specific interventions tailored to the construction industry. While general measures promoting female participation in STEM and vocational education exist, they rarely focus specifically on careers within the construction trades, reflecting a broader rather than targeted approach.

Operational programs funded through the European Social Fund Plus (ESF+) 2021–2027 address workforce development and gender equality, but sector-specific initiatives aimed explicitly at increasing women's representation in construction are limited. ESF-supported initiatives primarily focus on broader employability and entrepreneurship opportunities, rather than addressing structural gender barriers within particular sectors such as construction.

Local-level strategies in Lithuanian municipalities occasionally reference the necessity of enhancing vocational education and training to address labour shortages in construction. However, systematic and explicit integration of gender-specific approaches to combat gender segregation in this sector remains largely absent. City-specific plans, such as those developed by Vilnius or Kaunas, highlight technical education and infrastructure development yet seldom incorporate concrete measures for improving women's participation in construction-related occupations.

While Lithuania aligns its national labour market and skills development policies with broader European Union guidelines, explicit gender-sensitive interventions within the construction sector are limited. Strategies addressing workforce shortages generally remain gender-neutral. To effectively tackle existing disparities, more focused policy efforts, including targeted vocational training programs for women, public awareness campaigns, and supportive industry practices, are necessary to dismantle structural barriers hindering gender equality in Lithuania's construction sector.

4.5 Montenegro

Montenegro's policy environment already aligns with EU priorities on skills, inclusion and gender equality, but implementation gaps still limit impact in construction. The **National Employment Strategy 2021–2025** sets out measures to reduce skills mismatches and strengthen activation and VET pathways; it was formally adopted by Government in December 2021 and provides the national framework for tackling shortages in sectors such as construction. Gender equality is anchored in the **National Strategy for Gender Equality 2021–2025**, which commits the state to raise women's participation in the economy and to mainstream gender across sectoral policies. The strategy recognises persistent occupational segregation and calls for targeted actions, which are directly relevant to male-dominated fields like construction. EU reports confirm why these frameworks matter for construction. The **European Commission's Montenegro Report 2024** notes that women's labour force participation remains below the EU average and that, despite legislation on equal pay, policy weaknesses mean wage gaps persist—signals that the talent pool for construction is structurally under-used unless gender barriers are addressed. On the labour-market evidence base, **MONSTAT's Labour Force Survey (2025)** provides sex-disaggregated participation and employment data used to track progress, while the **Employment Agency (ZZZCG)** publishes vacancy statistics and flows from the unemployment register useful operational indicators for shortage monitoring in construction and allied trades.

These national instruments intersect with EU-level frameworks that directly shape skills demand in construction. The **European Skills Agenda (2020–2025)** prioritises upskilling/reskilling for green and digital transitions, which for construction translates into BIM literacy, energy-efficiency retrofitting and site digital coordination. The **European Pillar of Social Rights Action Plan (2021)** places inclusive access to quality jobs at the centre of labour-market reforms. Meanwhile, the **Renovation Wave** aims to double annual building renovations and renovate 35 million buildings by 2030, which amplifies Montenegro's need for a larger, more diverse construction workforce, including women. Taken together, these sources indicate a coherent direction of travel: national strategies provide the mandate to expand VET capacity and gender mainstreaming; EU agendas create sustained demand for green/digital construction skills. The remaining policy work is operational: embedding gender-responsive content in VET curricula and short courses, using tendering to incentivise inclusive training/apprenticeships, and improving

regular, sex-disaggregated monitoring across employment, wages and vacancies so measures can be adjusted in real time

4.6 Germany

The German government has responded to labour shortages with a multi-pronged strategy focusing on training, immigration, and gender equality in the workforce. A cornerstone is the Federal Skilled Labour Strategy (*Fachkräftestrategie*) updated in 2022–2023, which sets targets to secure Germany's skilled labour base by 2030. This includes measures like improving vocational training quality, increasing continuing education, and crucially, facilitating the immigration of skilled workers. In 2023, Germany overhauled its immigration law (Skilled Workers Immigration Act), making it easier for non-EU tradespeople and professionals to move to Germany – a move strongly supported by the construction sector to help fill craft positions. The Bundesagentur für Arbeit and economic ministries have also launched international recruiting initiatives (e.g. recruiting construction workers from Georgia and Western Balkans via special programmes). While immigration can alleviate shortages, the government is equally focused on domestic talent. There are campaigns to attract more young Germans to handwerk and Baufach careers – for example, the image campaign "*Mach Dein Ding*" and job fairs promoting construction apprenticeships. Given the declining apprenticeship numbers, the government has even discussed providing subsidies or bonuses to SMEs that take on trainees in shortage trades. Crucially, engaging more women in traditionally male trades is a declared policy goal. The National Strategy for Gender Equality (Gleichstellungsstrategie) 2020 explicitly calls for increasing women's participation in STEM and crafts occupations. To this end, multiple initiatives have been put in place. One flagship effort is the "Initiative Klischeefrei" ("Cliché-Free Initiative"), supported by the Education and Family Ministries. The Klischeefrei Initiative's service center consists of a specialist office within the Competence Center for Technology, Diversity, and Equal Opportunities (kompetenzz) and a public relations office located at the Federal Institute for Vocational Education and Training (BIBB). It works with schools, career counsellors and employers to break gender stereotypes in career orientation. It provides materials and workshops that encourage girls to explore technical trades (and boys to consider care/educational jobs), aiming to make career choices "free from gender clichés". Since 2018, Klischeefrei has grown a network of hundreds of partner organizations, including construction companies and unions, all committed to diversifying their recruiting. Another well-established measure is the annual Girls' Day (Mädchen-Zukunftstag), a nationwide open day where companies (including construction firms, craft guilds, and engineering offices) invite schoolgirls for hands-on experience in technical and manual occupations. The construction industry participates enthusiastically – e.g. inviting girls to try bricklaying or operating machinery for a day – with the hope of sparking interest early. Correspondingly, there is a "Boys' Day" to destigmatize caring jobs for young men, reflecting a broader gender-role rebalancing effort.[37]

The federal government also works with industry-specific bodies to foster gender equality. For instance, the Federal Ministry for Housing, Urban Development and Building (BMWSB) under Minister Klara Geywitz (2021 to 2025) has publicly championed the cause of women on construction sites. In a 2023 speech, Geywitz highlighted the

[37] https://www.bmfsfj.de/bmfsfj/themen/gleichstellung/gleichstellung-und-teilhabe/gleichstellungsstrategie-der-bundesregierung#:~:text=Gleichstellungsstrategie%20der%20Bundesregierung%20,Gleichstellung%20von%20Frauen%20und;

dismally low female share (only 11%) and called for a *"culture change on the building site".* She noted that attracting women is not just about fairness but directly about solving the skilled labour crunch – *"women should have equal participation in leadership positions by the end of 2025. There's still a lot to do below the management level as well. Currently, 75 % of civil servant architects and urban planners are men and only 25 % are women*." The Ministry has since funded model projects and research on women in construction.[38] On the industry side, organisations like the **RKW Kompetenzzentrum** and chambers of crafts have developed practical guides. In 2022 RKW published a 33-page guide *"Potentiale von Frauen für die Bauwirtschaft besser erschließen"* ("Better Tapping Women's Potential for Construction").[39] This guide advises construction SMEs on recruitment and retention of female employees – recommending steps such as offering trial apprenticeships to young women (e.g. via Girl's Day, internships), visibly appointing women to leadership roles as **role models**, ensuring facilities and equipment are suited for a mixed workforce, and fostering an inclusive company culture. Companies are urged to adopt **family-friendly policies** (flexible hours, parental leave for men and women) and guarantee **equal pay for equal work** to attract more women. Some larger firms have already set internal targets to increase their female workforce or established women's networks. There are also image campaigns featuring female construction workers – for example, the social media campaign *#FrauAmbau* ("woman at construction") shares success stories of women engineers and tradesworkers to normalize their presence. Additionally, various EU-funded projects in Germany target this issue: **"Women in Construction EU" (FEMCON)**, for instance, is a project (2022–2024) in Germany represented by Outside Media & Knowledge (OMK) interviewing women in the German and European construction sector to produce recommendations for policymakers and training curricula. The interviews highlight both barriers and best practices from women's perspectives.[40] Beyond gender-focused programs, Germany's strategy to alleviate construction labour shortages includes broader workforce initiatives. The Skilled Workers Immigration Act (Fachkräfteeinwanderungsgesetz 2023) expands eligibility for skilled immigration, allowing more tradespeople, including those without formal degrees, to work in Germany. A new "Chance Card" system lets non-EU workers enter Germany to find a job based on points for qualifications, experience, and language skills. This reform is aimed at alleviating labor shortages in the construction sector by attracting international talent.[41]

Several tangible initiatives illustrate these strategies in action:

- **Mentoring & Networks**: *Mentoring programmes* pair female junior engineers with experienced mentors. Networks like *"Architektin@Work"* connect women architects and engineers for peer support. These initiatives, often driven by women professionals themselves, help retain female talent by creating a support community and making women more visible in the industry.[42]
- **International Recruitment & Cooperation**: German agencies are actively recruiting craft workers from abroad (for instance, agreements with **Western Balkan countries** have brought in bricklayers and concrete workers in recent years). There is also cooperation at European level to ensure ethical recruitment and decent work for migrant construction workers, as championed by unions.

[38] https://www.bmwsb.bund.de/SharedDocs/reden/Webs/BMWSB/DE/2023/frauen-und-bauen.html#:~:text=%2A%20Hochtief%3A%2080%20.4%20M%C3%A4nner%20%2F%201%20Frau;
[39] https://www.rkw-kompetenzzentrum.de/publikationen/leitfaden/potentiale-von-frauen-fuer-die-bauwirtschaft-besser-erschliessen-und-nutzen/
[40] https://blog.bluebeam.com/de/frauen-im-baugewerbe/#:~:text=1,Bauunternehmen
[41] https://www.bmwsb.bund.de/SharedDocs/reden/Webs/BMWSB/DE/2023/frauen-und-bauen.html#:~:text=%2A%20Hochtief%3A%2080%20.4%20M%C3%A4nner%20%2F%201%20Frau
[42] blog.bluebeam.com

- **Baufrauen Bayern**: This is a network for women in the fields of planning and construction in Bavaria. They aim to build bridges between associations and individual members, reduce disadvantages and prejudices, restructure complex structures in volunteer work and chambers, incorporate discussion culture and transparency into decision-making processes, and strengthen solidarity and cohesion among members.[43]
- **Baukultur NRW**: This initiative supports various projects related to building culture in North Rhine-Westphalia. One of their supported projects is the "Baustelle Gleichberechtigung" (Construction Site Equality), which focuses on gender equality in the construction industry. This includes networks like "Bauhandwerkerinnen," a professional network for women, trans*, and inter* individuals in the construction industry.[44]

Overall, Germany's national approach recognises that the construction labour shortage and the gender imbalance are two sides of the same coin: solving the labour crisis will require drawing on the *whole* talent pool, which means changing the male-dominated image of construction. The active initiatives range from high-level policy (immigration law, national skills strategy, equality strategy) to on-the-ground practices (mentorship, Girls' Day events, company HR policies). Early signs are modestly positive – e.g. the share of women in construction has moved up a few percentage points, and the sector has weathered recent downturns without massive layoffs, indicating companies are holding onto workers tightly. However, meeting future needs (such as those driven by the Renovation Wave's climate goals) will likely require sustained and coordinated effort. As one Slavica Uzelac, the Policy Officer at the European Federation of Building and Woodworkers (EFBWW) noted, marketing alone won't solve the problem: *"The construction sector can only recover its reputation by improving working conditions and investing in new technologies that reduce physical strain. These changes will help attract young people and women"*[45]. German stakeholders appear to heed this advice, striving to modernize the industry's image and practices. In the coming years, the success of these strategies will be measured by whether more young Germans – especially more young women – choose to build their careers in Bau. The following section will complement this data-driven analysis with qualitative insights from interviews, shedding light on personal experiences of stakeholders in construction and expert opinions on what still needs to change on the ground.

4.7 Bosnia and Hercegovina

Bosnia and Herzegovina aligns with **European Union averages**, where women represent **9–10%** of the construction workforce. Similar trends are observed in neighbouring countries: **Croatia reports 11%, Serbia 8–9%**, and **Slovenia under 10%** Most female employment in the sector remains limited to office or engineering roles, with few women on construction sites. Compared to **Scandinavian countries and the UK**, which have introduced gender quotas, mentorship programmes, and support networks,

[43] https://www.baufrauen.de/
[44] https://baukultur.nrw/artikel/baustelle-gleichberechtigung/#:~:text=Baustelle%20Gleichberechtigung%3A%20Frauen,sowie%20die%20Initiative%20Klischeefrei
[45] https://buildbetterlives.eu/2023/11/15/blog-cant-be-a-renovation-wave-in-europe-without-workers/#:~:text=Image

Bosnia and Herzegovina lacks institutionalised mechanisms to actively promote gender inclusion in construction.

Legislative and Institutional Landscape in Bosnia and Herzegovina

Bosnia and Herzegovina has established a legal framework guaranteeing gender equality in employment through the **Law on Gender Equality (2003, amended 2009)** and the **Law on Prohibition of Discrimination (2009, amended 2016)**. These laws prohibit gender-based discrimination, mandate equal pay for equal work, and allow for temporary special measures to promote the underrepresented gender. Institutional responsibility lies with the **Agency for Gender Equality** at the state level, supported by the **Gender Centres** of both entities. The national **Gender Action Plan (2018–2022)** includes goals related to increasing women's participation in male-dominated sectors such as construction. However, enforcement remains inconsistent, and most initiatives are donor-driven rather than embedded in public policy. One notable programme is the **EBRD-supported "Equal Opportunities in Construction – Corridor Vc"**, which introduced gender action plans, awareness campaigns, and scholarships for female students in technical disciplines. Despite these efforts, comprehensive national strategies targeting women in construction are still lacking.

Wages and Compensation in the Construction Sector

Construction is among the lower-paid industries in BiH, by the end of 2023, the average monthly net salary in this sector was around 973 BAM, which is significantly below the national average. As of early 2025, the average monthly net salary in Bosnia and Herzegovina's construction sector is approximately **1,206 BAM**, which is below the national average of **1,506 BAM**. In Republika Srpska, the average gross monthly wage in construction was reported at **1,779 BAM** in February 2025. For individual construction workers, the average annual gross salary is around **18,295 BAM**, equating to about **1,525 BAM** per month. These figures indicate that construction remains one of the lower-paid sectors in the country, despite its significant contribution to employment and infrastructure development. Gender-specific wage data in the construction sector is limited; however, broader statistics indicate a substantial gender pay gap. According to the World Bank, men in Bosnia and Herzegovina earn, on average, **37.8%** more than women. This disparity is exacerbated by the concentration of women in lower-paid roles and sectors, as well as systemic factors such as occupational segregation and limited access to higher-paying positions.

Experiences and Challenges of Women in the Construction Sector

Although there are no formal legal barriers to employing women in construction, in practice, they face numerous challenges, ranging from deeply rooted stereotypes and subtle forms of workplace discrimination to practical difficulties on construction sites. Some of them are as follows:

- **Stereotypes and the "Male-Dominated World":** Construction is traditionally perceived as a "male" profession. The prevailing view is that construction sites are physically demanding, rough environments deemed unsuitable for women. Gender bias in construction begins early, with girls discouraged from entering the field and employers hesitant to hire women for site-based roles. Those who do enter often feel they must prove themselves.

- **Discrimination and Workplace Dynamics:** Many women report subtle discrimination or not being taken seriously at work. One female entrepreneur recalled hearing dismissive comments during site visits from workers who didn't realize she was the project manager. Only after stating she was in charge did attitudes shift, revealing a common tendency to underestimate women's expertise on-site.

- **Sexual harassment:** This is an issue across sectors, including construction, though rarely reported due to stigma. Encouragingly, larger firms are introducing zero-tolerance policies and gender equality training to improve workplace conditions.

- **Career Progression and the "Glass Ceiling":** Given the small number of women in construction, few reach leadership positions. Those who do often report having had to overcome the so-called "glass ceiling", invisible barriers to advancement beyond a certain level. Women rarely hold top positions like site manager or project director, often remaining in assistant or engineering roles, while leadership is dominated by men. A 2014 analysis showed that only 15.7% of management roles and 12.5% of board chairs in the private sector were held by women.

4.8 Albania

Through alignment with global standards and national reforms, Albania has built a legal and policy base to promote gender equality. It is a party to key international instruments, including the **UN Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)** and its **Optional Protocol**, as well as the **Council of Europe's Istanbul Convention** on preventing and combating violence against women and domestic violence. These instruments form a critical foundation for the country's legal and policy approaches to gender equality.

Key national laws include:

- **Law no. 55/2014 on Construction –** regulates standards and procedures for construction activities, including labor obligations for employers and safety regulations.
- **Law no. 10 128/2009 on Occupational Safety and Health –** establishes minimum safety standards in the workplace, applicable to all sectors, including construction**.**
- **Law no. 102/2015 on Employment Promotion –** outlines measures for active labor market policies, focusing on inclusion of vulnerable groups, including women and youth.
- **Law no. 9970/2008 on Gender Equality in Society** – guarantees equal treatment and opportunities for women and men in public and private life.
- **Law no. 9669/2006 on Measures Against Domestic Violence –** includes provisions to protect women in both domestic and workplace settings.

The institutional setup for promoting gender equality in Albania, often referred to as the **gender machinery**, is led by the **Ministry of Health and Social Protection**, which is responsible for developing and overseeing gender-related policies. Supporting this work are **Gender Equality Officers (GEOs)** positioned in both central and local government bodies, the **Commissioner for Protection from Discrimination**, the **People's Advocate**, and **INSTAT**, the national statistical office, which regularly publishes sex-disaggregated data, including on employment and labor.

Despite the existence of this institutional architecture, the **2023 CEDAW Concluding Observations** highlighted several areas requiring improvement most notably, the need to strengthen institutional capacities at the local level and enhance coordination between relevant bodies. On the policy front, Albania has adopted several strategic documents that guide its efforts toward gender equality. The **National Strategy for Gender Equality (2021–2030)** is the country's core framework for eliminating gender-based discrimination, promoting women's participation in public life, and addressing economic and social disparities. Complementing this is the **National Strategy for Euro-Atlantic Integration (2022–2030)**, which emphasizes gender mainstreaming across all policy areas in line with European Union standards. Moreover, economic planning documents such as the **Economic Reform Program (2022–2024)** and the **National Reform Agenda (2024)** incorporate gender-sensitive measures aimed at improving women's access to employment, skills training, and labor market participation. Nevertheless, challenges persist. **Gender-responsive budgeting** and **systematic monitoring** remain underdeveloped, and the effective enforcement of gender-related measures is often inconsistent. CEDAW has specifically urged Albania to improve its data collection, accountability structures, and the integration of gender concerns in traditionally male-dominated sectors such as construction.

5. Insights from Construction Sector Stakeholders

5.1 Ireland

Introduction This report summarizes insights from two expert interviews - Joan McNaboe (SOLAS) and Jeanette Mair (Construction Industry Federation) - focused on labour market trends, gender inclusion, and strategic recommendations to inform curriculum development under the WEC project.

Labour Market Overview and Workforce Shortages

Joan McNaboe (SOLAS)

- Despite employment growth in construction, skilled trades (e.g., plumbing, carpentry) remain stagnant (McNaboe, 2025).
- High-skilled roles like quantity surveyors and civil engineers are critically scarce.
- Broader barriers include housing shortages for migrants, planning delays, and inefficiencies in apartment construction.
- Digitalisation and Modern Methods of Construction (MMC) are driving new skill needs, but uptake is uneven.
- Ageing workforce is a growing issue: older tradespeople are retiring faster than replacements can be trained.

Jeanette Mair (CIF)

- The concept of "labour shortages" is often misapplied; industry complexity and cyclical demands vary widely across sectors (Mair, 2025).
- Ireland is at record-low unemployment, making it harder to recruit across all industries.
- Challenges stem more from planning delays, investment uncertainty, and project pipeline gaps than pure labour scarcity.
- Offsite and digital methods have altered the labour-to-output ratio, reducing labour intensity per euro invested.

Gender Diversity: Barriers and Efforts

Common Challenges

- Construction site conditions and early start times conflict with caregiving duties.
- Limited part-time or flexible roles.
- Entrenched male-dominated cultures and low visibility of women in on-site roles.
- Persistent stereotyping and lack of career exposure in schools.

Promising Strategies

- **SOLAS**: Initiatives like mobile outreach units, bursaries for female apprentices, and visible female role models in centres like Mount Lucas.
- **CIF**: Ongoing campaigns including International Women's Day, industry-wide profiles, school projects, and a diversity charter.

Expansion of digital roles, safety and environmental positions, and structured CPD are attracting more women to non-site roles.

The interviews confirm both systemic and cultural barriers continue to inhibit gender diversity in construction, alongside genuine gaps in specialised labour. However, both stakeholders identify opportunities — especially through curriculum design, outreach, and employer partnership — to build a more inclusive and future-ready workforce. These findings directly inform the WEC curriculum framework and dissemination strategies.

5.2 Croatia

Stakeholder Interview: Limometal gradnja d.o.o.

1. Please introduce your company and describe your main activities.
My company is called Limometal gradnja d.o.o. We are engaged in the production of metal structures, roofing and tinsmith works, and the production and installation of fences. We currently have two employees, and we are planning to expand, but only male candidates are considered due to the physical demands of the work.

2. What are the main factors contributing to labor shortages in your sector?
The main factors behind the shortage of workers are that, even after many years, working hours and working conditions in construction are still not in line with regulations. Additionally, wages are not equal to the difficulty of the work.

3. What are the main challenges for women in the construction sector?
The main challenge for women is that they are the weaker and more delicate gender and cannot adapt to this type of work.

4. Are there any upskilling or training programs for new workers?
There are upskilling programs, but in Croatia, these programs are very poorly organized. There is not a single program where an individual can be adequately trained for this job, which leads to a decline in work quality on the market and prevents clients from accessing real and qualified craftsmen.

5. Do you see a possibility for gender equality in your sector?
I believe there will never be equality in my sector, because as I mentioned, women are the weaker sex and will never be able to do this job.

6. What would you improve in your sector, especially regarding inclusion?
I would not improve anything because there is no point—there are men's jobs and women's jobs, and I think it should stay that way, since there are jobs that women do better and men do not want to do them, and everyone does what they are supposed to do.

Qualitative Reflection: Limometal gradnja d.o.o.

Limometal gradnja d.o.o. is a small company specializing in metal structures, roofing, and fence installation, currently employing two workers. The company's recruitment policy is exclusively oriented toward men, justified by the physically demanding nature of the work. The respondent believes that labor shortages are primarily due to poor working conditions and wages that do not match the intensity of the job. When it comes to gender, the interviewee holds a traditional view, emphasizing that women are not physically suited for construction work and sees no possibility for gender equality in this field. Additionally, the lack of effective and well-organized training programs for new workers is seen as a major barrier to improving quality and attracting new talent. There is also a clear resistance to any change in traditional gender roles, reflecting deeply rooted attitudes about the division of labor in construction. This perspective highlights the significant cultural and structural challenges facing any initiative aimed at promoting gender inclusion or broader workforce development in the Croatian construction sector.

Stakeholder Interview: DOL-NEKRETNINE D.O.O.

1. Please introduce your company and describe your main activities.
DOL-NEKRETNINE D.O.O. operates in the civil engineering and construction sector, with a particular focus on low-rise construction works. We also manage our own concrete plant and are active in the distribution of bulk materials such as sand and gravel. The company currently employs 38 individuals, out of which only one is a woman. This gender imbalance reflects broader industry trends that continue to pose challenges to inclusion and diversity in the construction sector.

2. What are the current labor market trends and main factors for workforce shortages?
The construction sector in our country is experiencing a significant shortage of skilled labor. One of the main reasons is the generational shift: younger people are increasingly unwilling to pursue careers in construction, often influenced by family perceptions that such jobs are physically demanding and undesirable. It is important to emphasize that the root of this issue is not economic, as wages in construction can be competitive. Rather, the problem lies in the declining interest in vocational education in this field, as well as the large-scale emigration of young people to countries such as Germany. For instance, in a recent public call for construction jobs, only three candidates applied—none from Croatia, all from Uzbekistan. This illustrates both the severity of the domestic workforce shortage and the growing dependence on foreign labor.

3. What challenges do you see for gender diversity in construction?
Gender diversity remains a persistent challenge in our sector. The prevailing cultural perception is that construction is unsuitable for women, especially in fieldwork and manual labor. While there is openness to hiring female engineers or technicians for site supervision roles, societal stigma and outdated norms continue to discourage women from entering or staying in the industry. Although there is a desire within our company to recruit more women, the reality is that there are very few female applicants. The sector's image must be transformed if we are to improve female participation.

4. Are there any specific training or upskilling programs for underrepresented groups (women, youth, etc.)?
The skills gap is another critical issue impacting the construction labor market. Even

though women can technically qualify for roles such as bricklayer or tiler, in practice, it is extremely difficult for them to find employment in these trades in Croatia. At present, there are virtually no companies hiring women for heavy-duty tasks such as bricklaying. However, women have been increasingly recognized in finishing works within construction, such as plastering, painting, and interior installations, which are more accepted and accessible. Still, there is a lack of structured upskilling programs specifically designed to help underrepresented groups, including women, to bridge this gap and access employment in core construction roles.

5. What strategies or good practices do you see for gender inclusion?
While our organization welcomes the idea of employing female engineers and technicians, the main barrier remains the lack of applicants. There is a noticeable willingness to diversify the workforce, but without broader societal change and targeted support measures, results are limited. To date, there have been no specific gender inclusion programs implemented in our company due to low demand. However, we remain committed to participating in initiatives that aim to improve inclusion and break gender stereotypes in construction.

6. What policy changes or industry-wide actions do you recommend to improve the situation?
Looking ahead, we believe that systemic change is needed at multiple levels governmental, industrial, and educational. One key recommendation is to promote construction-related careers more actively among youth, especially through awareness campaigns that highlight the diverse roles available in the sector, including those suitable for women. Furthermore, vocational schools should receive more support and modernization to attract and retain students. At present, the future of the sector is uncertain because there is little interest in both education and employment in construction. Without collaborative and strategic action from all stakeholders, we risk facing an even greater shortage of skilled workers and a continued lack of diversity in the workforce.

Qualitative Reflection: DOL-NEKRETNINE D.O.O.
DOL-NEKRETNINE D.O.O. is a medium-sized construction company with 38 employees, only one of whom is a woman. The company faces substantial labor shortages, primarily driven by a generational shift, declining interest in vocational training, and the emigration of young workers to other countries. While wages in the sector can be competitive, construction jobs are widely perceived as unattractive and physically demanding, discouraging young people from entering the field. The company is open to increasing gender diversity, especially in technical and engineering roles, but faces strong social and cultural barriers that result in very few female applicants. Women are typically employed in finishing roles, such as painting and plastering, rather than heavy manual work. The lack of well-designed upskilling programs for underrepresented groups further limits workforce diversification. The company advocates for systemic reforms—raising awareness among youth, supporting vocational education, and implementing coordinated actions among stakeholders—to improve the sector's image and attract a broader, more diverse workforce. This perspective indicates an openness to positive change but also highlights the complexity of challenges facing the Croatian construction industry regarding labor shortages and gender inclusion.

5.3 Lithuania

This section overviews the conducted interviews with stakeholders (who expressed their wish to remain anonymous) in Lithuania's construction sector, including representatives from construction companies, industry associations, trade unions, and education/training providers. At least two interviews were done with key institutions: one with a senior representative of the **Lithuanian Construction Association** (employers' side) and one with a representative of a **Trade Union** that includes construction workers. Additional informal input was gathered from a vocational training instructor and a female engineer in a construction firm. These qualitative insights help illuminate the human dimension behind the data – the perceptions of why labour shortages persist, the barriers women face, and which solutions might actually work on the ground. Below there is a summary of the interviews, organized by the main topics of discussion.

Current Labour Market Trends in Construction and Causes of Shortages

Stakeholders confirmed that Lithuania's construction sector is experiencing workforce shortages, especially in skilled trades. *"It's become increasingly hard to find enough people – we have lots of work but not enough hands,"* said the construction association representative. They pointed to a boom in construction activity in recent years (infrastructure projects, commercial development, etc.) coupled with the shrinking labour pool. The trade union representative, on the other hand, emphasized demographic decline and emigration as primary factors: *"Our population is ageing, and young folks are fewer – on top of that, many skilled workers go abroad for better pay, so the shortage here is double."* This echoes what analysts have noted: Lithuania's population dropped and is projected to keep dropping (from 2.8 million now toward ~2.2 million by 2050)[46], and the working-age cohort is decreasing even faster. According to the employers' representative, some specific trades are critically scarce – for example, *"Try finding a good welder or electrician now; it's very difficult, we sometimes wait months to hire."* They confirmed that companies routinely hire foreign workers through agencies or subcontractors. In fact, an interesting revelation was that at some large construction sites in Lithuania, a significant portion of manual labourers are foreigners (Ukrainians, Belarusians, and more recently workers from Central Asia). The employer rep explained that immigration policies were loosened in 2022–2023 under pressure from businesses facing labour shortages[47]. However, this has raised concerns (including some cases of abuse by intermediary agencies), and now the government has slightly tightened the rules again[48]. Both interviewees agreed that immigration alone is not a sustainable solution – though it helps in the short term. The union interviewee noted, *"Bringing in foreign workers can plug the gap, but it can also depress wages if misused, and we have to ensure decent conditions for all workers."* They also highlighted that productivity improvements are needed: *"One reason we talk about shortage is because productivity is low – if we modernize, we might need fewer workers or can do more with the ones we have."* This perspective aligns with economists who suggest that investing in technology and training could alleviate the need for such a large workforce. The union rep added a forward-looking point: with the rise of automation and AI, construction might change

[46] https://www.lrt.lt/en/news-in-english/19/2328665/could-6-day-working-week-solve-lithuania-s-labour-shortage-problems

[47] https://www.lrt.lt/en/news-in-english/19/2568150/how-lithuania-opened-doors-to-labour-immigration-lrt-investigation

[48] https://schengen.news/most-in-demand-jobs-in-lithuania-eus-2nd-easiest-country-to-get-a-work-visa/

significantly in the coming decades, potentially reducing labour intensity, but in the interim the shortage is real and pressing.

Additionally, work-life balance was mentioned. The union representative strongly opposed any notion of making people work longer hours or extra days to solve the shortage. *"We categorically say no to turning back the clock on labour rights – a proposal for a six-day work week came up and it's a big step backwards,"* he said, referencing recent public debate[49]. In fact, both he and an economist we consulted suggested the opposite: moving toward a modern model like a four-day work week to make construction more attractive to new entrants, combined with higher productivity[50]. While a four-day week in construction is likely a long-term idea, it shows that stakeholders are thinking about how to make the industry appealing to workers who increasingly value work-life balance. In summary, the interviews confirmed that labour shortages are a multifaceted issue: demographic shrinkage, worker migration, and the nature of construction work itself are all contributing, and quick fixes like overworking the current staff are neither desirable nor likely effective.

Gender Diversity Challenges – Barriers for Women and Ongoing Initiatives

When asked about the underrepresentation of women, stakeholders acknowledged it as a persistent challenge. The construction association interviewee admitted that *"Construction has historically been a male bastion here. We have very few women on sites – mostly they are in offices or design roles. This is slowly changing, but very slowly."* They identified cultural stereotypes as a major barrier: from a young age, girls are not encouraged to consider construction or trades. The interviewed vocational training instructor noted that in his construction electrician courses, *typically only 1 or 2 out of 20 students might be female*, and some cohorts have none. *"It's not that women can't do these jobs, those who join do just as well, but few sign up. There's a societal mindset we need to break,"* he said. Workplace culture was another crucial factor mentioned. The female engineer (who works for a civil engineering firm) shared her personal experiences of often being the only woman on a construction site meeting. *"Sometimes you have to prove yourself more at the beginning, because they assume you're not as capable in technical matters,"* she said, describing subtle bias. She also mentioned that on site visits, facilities like proper restrooms or changing areas for women are often lacking, which, while seemingly small, can be an obstacle to feeling comfortable on the job. This resonates with broader findings – many women in construction globally report lack of accommodations (e.g., ill-fitting safety gear, no separate toilets) and a sense of isolation[51]. Harassment and macho culture were cautiously acknowledged in the literature overviewed. Indeed, safety and health literature notes that a significant percentage of women construction workers face harassment annually[52], which can drive them out of the industry. Stakeholders mentioned that larger companies are starting to implement anti-harassment training and appoint diversity officers, but in smaller companies (which form the bulk of the sector) such measures are rare.

Regarding initiatives, there have been a few efforts: The construction association has occasionally collaborated with universities for events like "Women in Construction"

[49] https://www.lrt.lt/en/news-in-english/19/2328665/could-6-day-working-week-solve-lithuania-s-labour-shortage-problems
https://www.lrt.lt/en/news-in-english/19/2328665/could-6-day-working-week-solve-lithuania-s-labour-shortage-problems
[51] https://ohsonline.com/articles/2024/03/06/constructing-change-how-women-are-redefining-safety-and-inclusivity-in-construction
[52] https://ohsonline.com/articles/2024/03/06/constructing-change-how-women-are-redefining-safety-and-inclusivity-in-construction

seminars, aiming to showcase success stories of female architects and site managers to students. There are also EU-funded projects in Lithuania that promote women in STEM fields, which include engineering and construction – for example, an Erasmus+ project was mentioned that involved Lithuanian partners and produced recommendations on attracting more women via digitalization in construction[53]. However, both main interviewees admitted that *there is no large-scale national program specifically focusing on women in construction* now. They suggested that perhaps this is an area where more could be done, perhaps by the government or NGOs. The union representative highlighted the role of education: *"We need to start in schools – change the image that construction is only a man's job. If we can get more young women interested through, say, career fairs or even short courses, that would help."* He noted that certain sub-fields like architecture or interior design do have more female participation, so the gap is mainly in the on-site trade and management roles. As for what has worked elsewhere, the interviewees referenced examples such as mentorship programs. The employer association rep had attended a conference where it was discussed that *mentorship and support networks for women can improve retention*. Creating a community (like a women-in-construction forum) can reduce the feeling of isolation[54]. They also noted that a shift in jobsite culture benefits everyone: one expert they heard from explained that a more inclusive and respectful work environment not only attracts women but also makes the site safer and more productive for all (since harassment or hazing often correlates with safety issues)[55]. In Lithuania, this kind of cultural shift is just beginning, but the interviewees felt optimistic that the new generation of managers is more open-minded.

Skills Gaps and Training Programs

The stakeholders provided insight into how skills shortages are being addressed. All agreed that upskilling and training are vital parts of the solution. The construction company representative noted that many firms have started in-house training or upskilling initiatives to cope with the lack of ready-skilled workers. For instance, one large contractor now runs its own apprenticeship-like program where they take young labourers or newcomers and train them in specific trades (scaffolding, plastering, etc.), often pairing them with experienced mentors. However, smaller companies struggle to do this due to limited resources. This is where public institutions come in: the vocational training instructor highlighted government-supported training courses, some funded by EU money, aimed at unemployed people to retrain them for construction jobs. *"We've had programs to retrain, say, former factory workers or people coming back from abroad into construction skills. Those help, but uptake could be better,"* he said. A challenge mentioned is that construction work still might not appeal to some unemployed locals, hence the continued reliance on migrants who are more willing to take these jobs. The interviewees were aware of the BUILD UP Skills Lithuania roadmap (mentioned in Section 2) – in fact, the construction association was a stakeholder in that initiative. They praised it as a good analysis of skills needed for the future, particularly for energy-efficient construction. According to the employer rep, *"One positive is that we now have training modules for things like insulation installation, solar panel installation, etc., which is crucial for modern green building – those came from the Build Up Skills project."* Over

[53] https://constructionblueprint.eu/2023/02/28/erasmus-open-doors-day-eu-education-experts-exchange-their-views-on-tomorrows-skilled-workers/
[54] https://ohsonline.com/articles/2024/03/06/constructing-change-how-women-are-redefining-safety-and-inclusivity-in-construction
[55] https://ohsonline.com/articles/2024/03/06/constructing-change-how-women-are-redefining-safety-and-inclusivity-in-construction

500 professionals and workers were trained under that program by 2023[56]. The stakeholders believe such targeted upskilling will help reduce specific skill bottlenecks (for example, if there's a shortage of certified HVAC installers or electricians with solar training, those can be addressed with short courses). The union representative added that apprenticeships and vocational education (VET) need an image boost. Many young people in Lithuania opt for university even if job prospects might be better in trades. He suggested that stronger partnerships between industry and vocational schools could ensure graduates have employable skills and are essentially guaranteed jobs, making VET more attractive. This collaborative model (common in Germany or Austria) is something they aspire to. The female engineer interviewee touched on upskilling for underrepresented groups: she mentioned a program that tried to train more women in welding in a neighbouring country and wondered if similar could be tried in Lithuania. It ties back to earlier points – tapping women as an underutilized talent pool also requires offering them training opportunities in these skills, often with some additional outreach or support.

Strategies/Best Practices Implemented by Organizations

We asked stakeholders if their organizations have any initiatives to improve gender balance or generally broaden the workforce. The employers' association representative said that some of their member companies have started setting diversity hiring goals – for instance, aiming to have a certain percentage of new hires be women or people under 30. One major construction firm in Lithuania recently reported that they increased the number of women in managerial roles in their projects department, and they actively highlight *"success stories"* of women project managers in internal newsletters and external communications. This aligns with advice seen in literature: featuring *women role models and success stories* can inspire others [57] Also, involving women in recruiting (e.g., having female engineers at career fairs to talk to potential candidates) was mentioned as a practice to make the hiring process more inclusive[58]. The construction company rep recounted, *"We noticed when we send a team including a female engineer to university career events, more female students approach and ask questions – they can see someone like them in the role."* Such steps, while small, have reportedly led to a slight uptick in young women applying for internships at that company. On the union side, the interviewee said the union has been pushing for better conditions that would benefit everyone, including women. For example, they lobby for stricter enforcement of safety regulations and reasonable working hours, which would make the sector more attractive. He mentioned that the union is open to working with women's organizations to support women in trades – a nascent idea is to establish a support network or forum for female construction workers to voice concerns and receive mentorship (similar to NAWIC in the United States[59]). As of now, however, such a formal network does not yet exist in Lithuania. Another best practice that emerged from interviews (and is also supported by research) is flexible work arrangements or family support. Although construction is generally inflexible (since work happens on-site and often on fixed schedules dictated by project timelines), one stakeholder mentioned that their company experimented with more flexible start times or part-time roles in administrative parts of construction projects, which indirectly allowed more women (and men) with young

[56] https://statybininkai.lt/images/BuildUpSkillsLT2030_ROADMAP_EN.pdf
https://www.adp.com/spark/articles/2024/12/are-women-the-key-to-solving-labor-shortages-in-the-construction-industry.aspx
[58] https://www.adp.com/spark/articles/2024/12/are-women-the-key-to-solving-labor-shortages-in-the-construction-industry.aspx
[59] https://www.adp.com/spark/articles/2024/12/are-women-the-key-to-solving-labor-shortages-in-the-construction-industry.aspx

children to participate. For instance, quantity surveyors or BIM technicians could sometimes work remotely or on adjusted hours. *"Providing some flexibility shows we value employees' family lives – this can particularly help retain women after they have children,"* the employer rep noted. Such practices are common in other sectors but relatively new in construction. The stakeholders felt that while you obviously cannot pour concrete remotely, there are many supporting and planning roles in modern construction that could be made more flexible, thereby not losing talented workers who need that flexibility.

Recommendations for Policy and Collaboration

When asked about what changes or actions are needed going forward (policy, industry-wide, education), the stakeholders offered several recommendations:

- **Enhance Vocational Training and Promotion:** There was a strong call for the government and educational institutions to boost vocational training for construction. This includes updating curricula to modern standards, involving industry experts in teaching, and crucially promoting these careers to youth. The idea of starting outreach in high schools was floated, possibly with short summer programs or site visits to spark interest. The stakeholders believe that if young people (including young women) see that construction today involves advanced machinery, project management software, sustainability practices, etc., they might view it in a new light, rather than perceiving it as just manual labour. Essentially, *"market construction as a high-tech, essential, and rewarding field,"* as one interviewee put it.
- **Gender-Focused Initiatives:** The interviews concluded that more direct efforts to recruit and retain women are necessary. Suggestions included offering scholarships or stipends for women in construction-related training, setting targets or incentives for companies that hire or promote women (perhaps through public procurement advantages or recognition awards), and establishing mentorship programs. A policy idea mentioned was that the Ministry of Social Security and Labour could partner with the Construction Association to run a campaign highlighting women in construction, akin to campaigns done in STEM fields. This could be relatively low-cost but impactful in challenging stereotypes. Also, ensuring all vocational schools and employers have basic facilities and anti-harassment policies in place is something that could be mandated or encouraged by policy.
- **Improving Working Conditions:** From a policy perspective, continuing to improve occupational safety and health standards is key. The union stressed that making construction work safer and healthier will not only reduce accidents (which remain an issue) but also make it more attractive, including to older workers and women. For example, mechanizing repetitive heavy tasks can both alleviate physical strain (helpful for an ageing workforce and for those who may not have the same brute strength, which often is a perceived barrier for women) and increase efficiency. Government support for SMEs to invest in such equipment or in ergonomic tools was suggested. This ties into the idea that technology adoption (like using lifting exoskeletons, automatic mixers, etc.) could gradually change the job to be less about sheer physical force and more about skill, thus widening the pool of who can do it.
- **Immigration and Migration Policy:** The stakeholders had nuanced takes on immigration. They generally agreed with the OECD view that *"well-managed*

immigration" can help mitigate shortages[60]. They recommend maintaining a reasonable quota for skilled construction workers from abroad and streamlining their integration. However, they cautioned that it should not be a crutch that prevents action on domestic training. Additionally, they highlighted an often-overlooked source of talent: returning Lithuanians (diaspora). There are many experienced Lithuanian tradespeople and engineers working in Scandinavia, Germany, the UK, etc. Policies to entice them back – such as recognition of their qualifications, perhaps financial incentives, and emphasizing improved conditions at home – could pay off. *"Encouraging our people abroad to return could bring in workers who integrate easily and have great skills,"* noted the employer rep, echoing OECD suggestions[61]. In fact, Lithuania has had some "return migration" programs but not specifically targeted at construction skills the stakeholders believe this could be explored.

- **Collaboration Between Stakeholders:** Finally, there was consensus that collaboration is crucial. No single entity can solve these issues alone. The interviewees recommended forming a *task force or working group* involving government agencies (labour, education, economy ministries), industry representatives, unions, and possibly NGOs focused on gender equality. This body could oversee the implementation of a national action plan addressing construction labour shortages and gender gap – effectively taking the findings of research like this and turning them into concrete steps.

In summary, the interviews provided a grounded understanding that mirrored many of the findings from data and reports, but with added nuance. There is recognition among Lithuanian stakeholders that while the challenges of labour shortage and gender imbalance are daunting, they are not insurmountable. The solutions lie in a mix of short-term fixes (recruiting foreign workers, raising wages) and long-term strategies (education, cultural change, technological advancement). Importantly, there is a human willingness – companies willing to adapt and workers willing to upskill – if supported by sensible policies and collaborative initiatives.

5.4 Montenegro

Interviews with major employers (Bemax, Zetagradnja, Čelebić), the Employment Agency (ZZZCG), the Faculty of Civil Engineering, and a gender-equality NGO converged on a consistent picture: chronic shortages persist in site trades (masonry, carpentry, reinforcement, finishing) and in technical supervision, while an emerging bottleneck concerns digital coordination and BIM-related tasks. Employers who have hired women in design and supervision roles report performance on par with male peers and strong adherence to safety and quality processes; the barrier is largely perceptual rather than capability based. Stakeholders stressed that retention hinges on basic site adaptation appropriately sized PPE, adequate sanitary facilities, and workable shift patterns conditions that are not yet universal but clearly improve outcomes where applied. They also highlighted the low visibility of female role models in career guidance, the lack of mentoring pathways, and the need for school–employer partnerships to

[60] https://www.oecd.org/en/about/news/press-releases/2025/03/lithuania-will-need-to-strengthen-fiscal-sustainability-tackle-labour-shortages-and-foster-productivity-to-address-ageing-challenges.html
[61] https://www.oecd.org/en/about/news/press-releases/2025/03/lithuania-will-need-to-strengthen-fiscal-sustainability-tackle-labour-shortages-and-foster-productivity-to-address-ageing-challenges.html

convert growing female enrolments into site and technical jobs. ZZZCG emphasised that vacancy pressure remains among the highest and called for short, co-delivered upskilling in green and digital construction. Across interviews there was strong support for using public procurement to require gender action plans and apprenticeship targets, alongside better routine, sex-disaggregated monitoring. Overall, stakeholders agree that scholarships and campaigns must be paired with workplace adaptation, structured apprenticeships, and procurement incentives to produce sustained change

5.5 Germany

The construction sector in Germany, like many others across Europe, faces pressing challenges related to labour shortages and gender imbalances. These issues are intertwined: the lack of women in the workforce contributes to the labour shortage, while gendered stereotypes continue to shape career choices, often steering women away from technical trades like construction. To gain a deeper understanding of these challenges and explore possible solutions, as part of our ongoing efforts to improve the conditions for women in this industry, we spoke with key stakeholders in the sector. The following interviews provide valuable perspectives on the current state of the industry and highlight initiatives aimed at fostering gender inclusivity and addressing the labour gaps in construction. A representative from the Initiative Klischeefrei, a national initiative working to break down gender stereotypes in career choices, discusses how early education can play a crucial role in changing the trajectory for young girls. They highlight the fact that construction, like many technical fields, has historically been dominated by men, with girls often discouraged from pursuing these careers due to ingrained societal norms. The Initiative Klischeefrei works to introduce young girls to technical fields, including construction, by providing workshops, materials, and outreach programs that challenge the assumption that certain professions are only suitable for one gender. According to the representative, the solution lies in addressing these stereotypes early-starting in kindergarten and continuing throughout primary and secondary education-so that girls grow up seeing technical professions as accessible and desirable.[62] Building on this, a senior safety engineer from a prominent construction firm shares their company's experiences with gender inclusivity, specifically in the area of construction safety. They proudly describe a team where 50% of employees are women, which has led to improved communication and a healthier work environment. By incorporating women into both office and on-site roles, the company has been able to foster a more collaborative and solution-oriented culture. The engineer notes that gender diversity has been a key factor in reducing the traditional "macho" culture that can sometimes pervade construction sites. However, they also acknowledge the cultural resistance that exists within the industry, particularly the deep-seated stereotypes that discourage women from entering construction. For them, the solution lies in both company-level actions-such as workplace flexibility and mentorship-and broader societal shifts, particularly early interventions in education to encourage girls to explore construction careers.[63]

[62] The **Initiative Klischeefrei** interview, conducted by Outside Media & Knowledge (OMK) as part of the FEMCON project, provides insights into the importance of challenging gender stereotypes in early education and career choices. Source: OMK, FEMCON Project, https://www.youtube.com/watch?v=z7k5BR_E1tQ&list=PLEOSyNJzDzUqdE8YZrICUkTDY2O1v5AEy&index=6

[63] The SCHÄCHTELE HSE senior safety engineer interview discusses the company's success with gender inclusivity in construction safety roles, highlighting the benefits of a gender-balanced team and the need for cultural change in the industry. Source: OMK, FEMCON Project, https://www.youtube.com/watch?v=EBkiTrq2JnA&list=PLEOSyNJzDzUqdE8YZrICUkTDY2O1v5AEy&index=1

In a broader context, a representative from Germany's largest construction industry association, the Hauptverband der Deutschen Bauindustrie (HDB), discusses the economic necessity of addressing gender inequality in the construction workforce. With only around 10% of the construction workforce being female, the representative stresses that the sector cannot afford to ignore the talents of half the population. They argue that gender diversity is not just a social imperative but also an economic necessity, particularly as the industry faces a growing labour shortage. The representative notes that the lack of women in construction results in missing perspectives, which can affect project outcomes and innovation. Their insights point to the importance of inclusive recruitment practices and gender-sensitive policies within the sector, to attract and retain female talent. They also discuss the efforts of the HDB to raise awareness about these issues and advocate for policy changes that encourage more women to pursue careers in construction. The representative also reflects on the barriers that continue to hinder women's participation in the industry. From cultural biases to lack of information about career opportunities, the industry still faces significant challenges in attracting women. They point to initiatives like women's networking groups and mentoring programs as steps in the right direction but highlight that more targeted interventions are needed, especially in vocational education. The HDB is also actively involved in creating platforms for women in construction, such as the FrauenNetzwerk-Bau, which allows women to connect, share experiences, and find mentorship. This platform is vital in providing women with a sense of community and the support they need to succeed in a traditionally male-dominated industry.[64]

5.6 Bosnia and Hercegovina

Stakeholder Interview: ENOVA d.o.o

Enova d.o.o. Sarajevo is a leading consulting company in Bosnia and Herzegovina, specializing in multidisciplinary development with over 15 years of experience in the fields of environmental protection, energy efficiency, economic development, and governance. Its clients include international development and financial institutions such as the World Bank, European Bank for Reconstruction and Development (EBRD), International Finance Corporation (IFC), USAID, UNDP, UNEP, UNIDO, SIDA, and the European Commission, as well as domestic institutions at all levels of government. In addition to its core areas, Enova also implements projects in the construction sector, providing consulting services related to regulatory frameworks, policy development, strategic planning, and sustainability. An interview was conducted with the head of the Department for Construction Projects, who is also a civil engineer by profession, and her responses are presented below.

Current Labor Market Trends and Workforce Shortages in the Construction Sector

Currently, the construction labor market in our country is experiencing a significant shortage of workers, particularly when it comes to construction laborers. The main reason for this shortage is the large number of workers leaving for better job opportunities

[64] The Hauptverband der Deutschen Bauindustrie (HDB) interview offers a broader perspective on gender inequality in the German construction sector and discusses strategies to attract more women to the industry. Source: OMK, FEMCON Project
https://www.youtube.com/watch?v=Y9B3fHyMXbg&list=PLEOSyNJzDzUqdE8YZrICUkTDY2O1v5AEy&index=5

and higher wages abroad. On the other hand, engineers have many employment options within the country. Most of my colleagues working in engineering roles are employed.

Barriers to Gender Diversity in Construction

I believe there will always be some level of gender disparity. After graduating, I started working in a construction company where the difference in treatment between male and female colleagues was quite evident. Although I held a supervisory position, that role was often not respected and did not carry much weight. In addition to the workers, older male colleagues often viewed me with a degree of reservation or lack of understanding, which made the working environment more difficult and hindered a sense of acceptance. Suggestions for overcoming these challenges include:

- More visible support for women from within the company, for example, clearly showing that women are welcome and supported by highlighting positive examples and offering support with on-site challenges.
- Practical rules – such as mandatory meetings where everyone has the chance to speak, clear hierarchies, and procedures that protect the authority of supervisors regardless of gender.

Impact of Skills Gaps and Efforts to Bridge Them

The skills gap seriously impacts the labor market in construction. Often, there is work available but not enough qualified people to do it. I'm not aware of specific training programs, but I believe a major problem is that after finishing university, we are not fully prepared for the job and must relearn everything due to an outdated curriculum. It would be beneficial to develop more practical, short-term courses in collaboration with construction companies, where people could start working immediately after training, even though internships. This approach would likely yield better results and help fill the skill gaps that are currently very noticeable.

Organizational Strategies for Gender Balance and Inclusion

At Enova d.o.o., the majority of employees are women, and I can confidently say that gender balance is not a challenge for us – on the contrary, women are represented at all levels, including both technical and managerial roles. Discrimination, whether direct or subtle, is absolutely not present in our work environment.

Future Policy Recommendations and Stakeholder Collaboration

In general, there should be greater efforts to publicly showcase positive examples of successful women in construction to demonstrate that this sector is not reserved solely for men. It is also important to continuously emphasize that there must be no discrimination, especially not based on gender – neither during hiring nor on the job. Opportunities should be equal for everyone, and hiring should be based solely on knowledge, skills, and willingness to work, not on whether someone is male or female. The government, educational institutions, and industry should work together to promote construction careers as a viable option for all – regardless of gender. Educational institutions should actively engage women through practical programs, fieldwork, and promotion of technical professions. On the other hand, companies should be open to cooperating with schools by offering mentorship, internships, and employment opportunities after graduation.

Stakeholder Interview: City of Zenica

The City of Zenica, as a public administrative institution, encompasses several key departments responsible for urban planning and construction-related affairs. These include the Department for Urbanism, the Department for Water Management, Road Infrastructure and Local Communities, and the Department for Geodetic Affairs and Cadastre. Together, these services play a central role in managing spatial planning, infrastructure development, and construction regulation within the city. An interview was conducted with the head of one of the departments within the City of Zenica, who is also a civil engineer by profession, and her responses are presented below.

Current Labor Market Trends and Workforce Shortages in the Construction Sector

In the labor market in Bosnia and Herzegovina, there is a significant shortage of workers across many sectors, particularly in construction. While employment offices record high numbers of unemployed individuals, there is a severe lack of qualified personnel in construction both skilled workers and graduated engineers. Contributing factors include an education system that fails to keep pace with market needs and lacks sufficient practical training, both in secondary schools and universities. As a result, employers must spend extended periods training workers for independent work. Additionally, the ongoing emigration of the working-age population with relevant qualifications further exacerbates the issue. Existing legal frameworks have not provided adequate solutions to allow employment during university studies. State incentives for first-time employment are minimal given the economic conditions, while taxes and social contributions on wages are among the highest in Europe.

Barriers to Gender Diversity in Construction

Gender diversity is a visible issue in the construction industry, especially in Bosnia and Herzegovina, largely due to the perception that construction is a male-dominated field. The limited presence of women in leadership positions, restricted career advancement opportunities, poor working conditions, and prevailing stereotypes all contribute to the low representation of women. Women often face multiple challenges, including being paid less for the same roles as men. A major hurdle arises when women become mothers ranging from dismissals to lack of flexibility for child illness, as well as unpaid or minimally paid maternity leave, which often lasts much shorter than a full year. However, women who choose to pursue careers in construction show determination and strength necessary for leading processes in the industry. To increase the number of such women and eliminate existing barriers, concrete measures must be implemented. These include full state coverage of maternity leave for one year and flexible working arrangements or remote work options upon return, where job duties allow.

Impact of Skills Gaps and Efforts to Bridge Them

The lack of workers with adequate knowledge and skills poses a limiting factor for progress and development in the construction sector in Bosnia and Herzegovina, particularly in areas such as design and implementation. There needs to be much greater focus on practical education in both secondary schools and universities. Additionally, structured training should be introduced upon hiring, with employers obliged to provide

professional development through workshops, courses, and seminars to ensure employees gain practical, applicable knowledge.

Organizational Strategies for Gender Balance and Inclusion

Unfortunately, based on my experience, I have not encountered specific measures or strategies adopted by organizations aimed at addressing gender balance and inclusion in the construction sector.

Future Policy Recommendations and Stakeholder Collaboration

The education system should enable students to acquire more practical knowledge by introducing significantly more hands-on training in schools and universities. During their professional careers, employees should be given continuous opportunities for development and skill-building through trainings and seminars provided by employers. All this is feasible if the state supports these measures through legal reforms, simplifies employment procedures during studies, fully covers maternity leave costs, and introduces special working conditions for women who become mothers.

Stakeholder Interview: VI-Beton

VI - BETON d.o.o. is a company well-regarded in Bosnia and Herzegovina for its commitment to quality, punctuality, and professionalism in the production, sale, and transport of concrete. With a strong market presence and years of experience, the company continues to meet the needs of private clients, contractors, and public sector partners alike. An interview was conducted with the CEO of VI - BETON d.o.o. to gain insight into the company's values, approach, and future plans.

Current Labor Market Trends and Workforce Shortages in the Construction Sector

The construction sector in Bosnia and Herzegovina is facing a serious shortage of qualified labor. Key factors contributing to this trend include the emigration of workers abroad in search of better working conditions and higher wages, as well as the lack of interest among younger generations in vocational and technical professions. Additionally, the education system often does not meet the needs of the labor market and is frequently not aligned with today's "trends," which further complicates the filling of job positions.

Barriers to Gender Diversity in Construction

Although the situation has been slowly changing in recent years, women in the construction industry are still not taken seriously in practice. This is especially evident during field visits, where their presence is often seen as unusual or, by older colleagues, not taken seriously at all. Stereotypes about construction being a "male" profession, the lack of support, and the scarcity of visible female role models in the field all make it more difficult for women to enter and remain in the sector. Effective initiatives from other countries include mentorship programs, scholarships for women in construction, and ensuring equal working conditions such measures would be beneficial in our context as well.

Impact of Skills Gaps and Efforts to Bridge Them

The lack of practical skills significantly slows down the progress of young professionals in construction, as they are often unprepared for the demands of real construction sites. Experience is gained through trial and error and with the support of more experienced colleagues, but there are virtually no formal training programs specifically designed to fill those gaps. In my experience, the only “training” comes through self-learning and everyday practice, which is not sustainable in the long term, especially for those from underrepresented groups.

Organizational Strategies for Gender Balance and Inclusion

Unfortunately, systematic approaches to improving gender balance in the construction sector in Bosnia and Herzegovina are still rare. The division into “men’s” and “women’s” jobs continues to dominate. The presence of women in the sector largely depends on individual initiative and personal motivation. Good practices would include introducing training for staff on gender stereotypes and establishing mentoring networks, among other things.

Future Policy Recommendations and Stakeholder Collaboration

To move the construction sector forward, we need everyone at the table, governments, schools, companies, and communities. That means updating training to match real job needs, creating more support for women through mentorship and scholarships, and making sure workplaces are welcoming to all. When we work together and keep the conversation going, we can build a stronger, more inclusive future for the industry.

5.7 Albania

Stakeholder Interview: Mr. Erjon Harizi, Executive Director, Albanian Constructors Association

Current state of the labor market in the construction sector

The construction sector in Albania has been facing a persistent workforce crisis for several years now, which has become even more evident after the pandemic. Many skilled workers, including those with vocational training or years of experience in this sector, have emigrated to EU countries in search of better wages and working conditions. This phenomenon has created major gaps across all levels of industry from basic manual labor roles to technical and engineering positions. Another issue worsening the situation is the mismatch between vocational education and the real needs of the market. Vocational schools and universities are not producing the number or profile of professionals that the construction sector demands. Many study programs are outdated or do not provide the necessary hands-on training to prepare young people for the labor market. In this context, the lack of qualified professionals has become one of the biggest obstacles to the sustainable development of the sector. Gender diversity and main barriers preventing women from entering construction sector.

It is true that construction is still seen as a male-dominated profession. While we have many young women studying architecture or construction economics, and female lawyers working in construction companies, in the field the implementation side the presence of women is very low. There is a small but growing number of female engineers and designers entering the market, but not at the scale needed. Schools play a crucial role in encouraging girls to pursue these professions. We still lack awareness programs to break cultural barriers and stereotypes that portray construction as work suitable only for men. Social and cultural aspects have a significant impact, as many girls do not perceive construction as a safe, stable, or suitable career for them.

Skills gaps and their influence on the construction sector

The lack of skills is one of the biggest challenges the sector is currently facing. The labor market is relatively stable, and financially viable wages are competitive and have seen steady growth but the main issue remains the shortage of workers at all levels, from manual laborers to qualified engineers. To fill this gap, many companies have started importing workers and engineers from other countries. Our Association collaborates with vocational schools and universities, but these efforts are still insufficient. There is little coordination between educational institutions and construction companies, while internships for students exist but are often poorly organized and fail to provide adequate preparation for the realities of the job market.

Strategies to improve gender balance and inclusion in the sector

Unfortunately, we have not had structured national programs or sector-wide initiatives to increase women's participation. What I can say is that wage growth has been a factor in attracting some professionals, but this has not been enough to solve the problem of both the shortage of women and the overall labor shortage. A broader, coordinated approach between the government, the education system, and the industry is necessary.

Policy recommendations to address labor shortages and improve gender diversity in construction

First, a serious reform of the vocational and higher education system is needed, so that it aligns better with labor market demands. Professions in high demands such as construction trades, civil engineering, electricians, and welders should be actively promoted among young people, particularly girls. Education and employment must be more closely linked by creating strong partnerships between schools, universities, and construction companies, including mandatory internships and employment guarantees upon graduation. On the other hand, state institutions must respond more swiftly to the needs of industry not only regarding work permits but also by implementing policies that support the development of a skilled local workforce. Only through a coordinated, long-term, and inclusive plan can we achieve a construction sector that is more attractive, sustainable, and welcoming to everyone, regardless of gender.

6. Conclusion

This comparative analysis of labour shortages and gender imbalances in the construction sectors of Ireland, Croatia, Lithuania, Montenegro, Germany, Bosnia and Herzegovina,

and Albania reveals both striking commonalities and instructive divergences across the European and Western Balkan regions. The research demonstrates that construction workforce challenges transcend national boundaries, reflecting shared structural transformations in post-industrial economies, demographic transitions, and persistent gender segregation patterns that have proven remarkably resilient to policy interventions.

Labour Shortage Manifestations

The empirical evidence confirms acute labour shortages across all seven countries studied, though the magnitude and specific skill gaps vary considerably. Ireland faces the most severe shortage in relative terms, requiring an additional 80,000 workers (47% increase) to meet infrastructure demands, while Germany confronts the largest absolute shortage with projections of 100,000 unfilled positions by 2030. Croatia, Lithuania, and Montenegro report more moderate but still critical gaps, with Croatia lacking approximately 9,000 workers and Lithuania experiencing vacancy rates nearly doubling from 1.1% to 1.8% between 2019 and 2023. Notably, all countries exhibit similar patterns of skills mismatch, with particular shortages in skilled trades (plumbing, electrical work, masonry) and emerging deficits in digital and green construction competencies. This suggests that labour shortages are not merely quantitative but reflect qualitative gaps between existing workforce capabilities and evolving industry requirements driven by digitalization and climate transition imperatives.

Gender Representation Patterns

Female participation in construction demonstrates remarkable consistency across the region, clustering between 8.6% and 14% of the total workforce. Croatia reports 10.22%, Lithuania 8.6%, Ireland 10.2%, Germany approximately 14%, Montenegro 9.0%, Bosnia and Herzegovina approximately 10%, and Albania below 5%. This narrow range suggests systematic rather than country-specific barriers to female participation. More significantly, the research reveals consistent patterns of horizontal gender segregation across all countries. Women are predominantly concentrated in administrative, design, and supervisory roles, while remaining virtually absent from site-based trades and manual positions. Even in countries with relatively progressive gender policies, such as Germany and Ireland, female representation in on-site roles remains below 2%.

Demographic and Economic Pressures

The analysis identifies three primary structural drivers of labour shortages that operate across national contexts. First, demographic transition characterized by population aging and declining birth rates creates fundamental workforce constraints. Lithuania faces the most severe demographic challenge, with projections indicating a 30% decline in working-age population by 2050, while Ireland and Germany experience less dramatic but still significant aging pressures. Second, migration patterns exacerbate domestic labour supply constraints. All countries report significant emigration of skilled construction workers to higher-wage destinations, particularly within the EU. Lithuania, Croatia, Albania, and Bosnia and Herzegovina experience net outflows, while Ireland and Germany increasingly rely on immigrant labour to fill gaps. This creates a paradoxical situation where some countries simultaneously export and import construction labour. Third, educational and training system misalignment perpetuates skills gaps. Across all countries, declining enrollment in construction-related vocational education undermines pipeline development. Lithuania reports particularly concerning

trends with young people preferring university education over vocational training, while Albania and Bosnia and Herzegovina struggle with outdated curricula that fail to meet industry needs.

Gender Exclusion Mechanisms

The research identifies four interconnected mechanisms that sustain gender segregation in construction across national contexts. Cultural and social barriers operate through persistent stereotyping that constructs construction as inherently masculine work. These stereotypes manifest similarly across countries despite different cultural contexts, suggesting deep-rooted gender role expectations that transcend national boundaries. Structural workplace barriers include inadequate facilities, inappropriate safety equipment sizing, and inflexible working arrangements that conflict with caregiving responsibilities. These barriers are remarkably consistent across countries, indicating systemic rather than incidental exclusion. Educational pipeline effects begin early, with girls consistently discouraged from pursuing construction-related education across all countries studied. Female enrollment in construction vocational programs remains below 20% in most countries, with some reporting figures as low as 5%. Economic disincentives, including persistent pay gaps and limited career advancement opportunities, further discourage female participation. The research documents gender pay gaps ranging from 21% in Ireland to over 30% in some firms, creating rational economic reasons for women to pursue alternative career paths.

EU Member States vs. Western Balkan Countries

A clear differentiation emerges between EU member states (Ireland, Croatia, Lithuania, Germany) and Western Balkan countries (Montenegro, Bosnia and Herzegovina, Albania) in policy sophistication and resource availability. EU member states benefit from access to European Social Fund financing, participation in EU-wide skills initiatives like the Pact for Skills, and alignment with comprehensive European strategies such as the Renovation Wave. However, policy implementation effectiveness varies significantly even among EU members. Germany demonstrates the most comprehensive approach, combining federal skills strategies, immigration policy reforms, gender equality initiatives (Klischeefrei, Girls' Day), and industry partnerships. Ireland shows strong industry-led initiatives but limited systematic gender inclusion measures. Croatia and Lithuania exhibit policy frameworks but struggle with implementation coordination. Western Balkan countries face greater resource constraints but show varying commitment levels. Montenegro demonstrates policy alignment with EU standards despite non-membership, while Bosnia and Herzegovina's fragmented institutional structure impedes coordinated responses. Albania shows emerging awareness but limited systematic interventions.

Innovation and Best Practice Identification

Several innovative approaches emerge from the comparative analysis. Germany's multi-pronged strategy combining immigration policy liberalization, systematic gender stereotyping challenges, and industry modernization offers a comprehensive model. The Klischeefrei initiative's focus on early educational intervention addresses root causes of gender segregation. Ireland's industry-led approach through the Construction Industry Federation demonstrates effective private sector mobilization, while Montenegro's integration of gender criteria into public procurement policies shows promise for leveraging state purchasing power to drive inclusion. Conversely, the research identifies significant policy gaps. Most countries lack sector-specific gender inclusion strategies,

relying instead on general equality policies that fail to address construction's unique challenges. Coordination between education systems and industry remains weak across all countries, perpetuating skills mismatches.

Theoretical Contributions

This research contributes to labour market segmentation theory by demonstrating how gender segregation persists despite formal equality policies and market pressures for labour force expansion. The findings suggest that horizontal segregation mechanisms are remarkably resistant to traditional policy interventions, requiring more fundamental challenges to occupational gender stereotyping. The study also illuminates the relationship between labour shortages and demographic transition in post-industrial economies. The evidence suggests that traditional solutions (wage increases, immigration) provide temporary relief but fail to address underlying workforce reproduction challenges without fundamental changes to work organization and gender relations.

Policy Implications

The research identifies several critical policy priorities. First, addressing labour shortages requires coordinated interventions targeting both immediate skills gaps and long-term pipeline development. This necessitates closer integration between vocational education systems and industry needs, supported by systematic labour market monitoring and skills forecasting. Second, gender inclusion requires moving beyond general equality policies to construction-specific interventions that address cultural stereotyping, workplace adaptation, and career pathway development. Early educational intervention emerges as particularly important, requiring systematic challenges to gender stereotyping in career guidance and educational provision. Third, successful policy implementation requires multi-stakeholder coordination involving government agencies, educational institutions, industry associations, and civil society organizations. The German model demonstrates the potential effectiveness of such coordination, while fragmented approaches in other countries highlight the limitations of isolated interventions.

Methodological Limitations

Several limitations constrain the generalizability of findings. The research relies primarily on institutional data and stakeholder interviews, limiting insights into worker experiences and preferences. Gender analysis focuses primarily on binary categories, potentially overlooking the experiences of non-binary and transgender individuals in construction. The study's cross-sectional design limits understanding of change processes over time, while varying data availability across countries constrains comparative precision. Additionally, the focus on formal employment may underestimate the significance of informal construction work, particularly in Western Balkan countries.

Future Research Priorities

Future research should prioritize longitudinal analysis of policy intervention effectiveness, particularly regarding gender inclusion initiatives. Detailed ethnographic studies of workplace cultures could illuminate informal barriers to female participation that quantitative analysis cannot capture. Comparative analysis of successful gender

inclusion initiatives in other male-dominated industries (mining, transport, manufacturing) could identify transferable strategies. Additionally, research on the intersection of digitalization and gender inclusion in construction could inform future workforce development strategies. Economic analysis of the costs and benefits of gender inclusion initiatives would strengthen the business case for employer engagement, while investigation of regional variation within countries could refine understanding of local determinants of labour market outcomes.

Concluding Observations

This comparative analysis demonstrates that labour shortages and gender imbalances in construction represent interconnected challenges requiring coordinated, multi-level interventions. While all countries face similar underlying pressures, their policy responses and resource capabilities vary significantly, creating opportunities for mutual learning and policy transfer. The persistence of gender segregation despite formal equality policies indicates the need for more fundamental challenges to occupational gender stereotyping and workplace cultures. Similarly, the universality of skills shortages suggests the need for coordinated European-level responses that address demographic transition and migration effects systematically. The research confirms that addressing these challenges is not merely a matter of social justice but economic necessity. As demographic pressures intensify and construction demands increase due to climate transition requirements, tapping underutilized labour pools becomes increasingly critical for economic competitiveness and social sustainability. Success will require sustained commitment to systematic change rather than ad hoc interventions, supported by adequate resources and coordinated stakeholder engagement. The variation in policy approaches across countries studied provides a valuable foundation for identifying effective strategies and avoiding less successful approaches in future policy development.

7. References

1. European Labour Authority (EURES). (2025, February 24). *Labour Market Information: Lithuania*. Source: eures.europa.euosp.stat.gov.lt. Retrieved from EURES portal: Data on Lithuania's employment and sector breakdown, including construction workforce share and gender composition.
2. Statistics Lithuania (Oficialios statistikos portalas). (2023). *Labour Market in Lithuania 2023 – Employment, Unemployment and Vacancies.* Source: osp.stat.gov.ltosp.stat.gov.lt. Retrieved from osp.stat.gov.lt: National statistics report indicating 91.4% of construction sector employees are men (2022 data).
3. Morina, D. (2024, July 22). *Most In-Demand Jobs in Lithuania – EU's 2nd Easiest Country to Get a Work Visa.* Source: schengen.newsschengen.news. Schengen News. Summary of 2023 EURES report highlighting 59 shortage occupations in LT across sectors (including construction trades).
4. Think Europe (2024, July 24). *Most In-Demand Jobs in Lithuania – The EU's Second Easiest Country for Obtaining a Work Visa.* Source: thinkeurope.dethinkeurope.de. ThinkEurope Blog. (Alternative source with similar content on shortage occupations and sectors in LT, citing EURES report). LRT English. (2024, August 3). *Could 6-day working week solve Lithuania's labour shortage problems?* Source: lrt.lt. LRT.lt News. (G. Malinauskaitė). Article discussing Lithuania's labour shortage, demographic decline, and expert opinions against a six-day week, suggesting immigration and productivity measures.
5. LRT Investigation. (2025, May 20). *How Lithuania opened doors to labour immigration.* Source: lrt.lt. LRT.lt News. (J. Tvaskienė & J. Čeponytė). Investigation report on policy changes in 2022–2023 that increased foreign workers in LT (foreigners reaching 7.5% of population), with references to construction worker shortages and a quota of ~40k foreign workers in 2023.
6. OECD. (2025, March 28). *Lithuania will need to ... tackle labour shortages ... to address ageing challenges.* Source: oecd.orgoecd.org. OECD Economic Survey Press Release. Notes demographic projections (30% decline in working-age pop by 2050) and recommends older worker inclusion, managed immigration, and return of emigrants to ease shortages.
7. European Labour Authority. (2023). *EURES Shortages and Surpluses Report 2023.* Source: ela.europa.euela.europa.euela.europa.eu. (Sixth edition).
8. Oxford Economics. (2023, July 20). *Women in construction: Bridging the green jobs gap.* Source: oxfordeconomics.comoxfordeconomics.com. Research briefing highlighting that women are ~15% of Europe's construction workforce and advocating increasing female participation as key to filling 1.7 million "green" construction roles needed by 2050.
9. Rajan, S. (2024, March 6). *Constructing Change: How Women Are Redefining Safety and Inclusivity in Construction.* Source: ohsonline.comohsonline.com. Occupational Health & Safety Online. Discusses barriers women face in construction.
10. Katsanos, K. (2024, December). *Are Women the Key to Solving Labor Shortages in the Construction Industry?* Source: adp.comadp.com. ADP Spark Blog. U.S.-focused piece noting women's share in construction.
11. Construction Blueprint Project. (2023). *Women in Construction: Current state, latest initiatives and the potential of digitalization.* Source: constructionblueprint.euconstructionblueprint.eu.

12. Build Up Skills Lithuania. (2022–2024). *Rebooting the National Construction Workforce Roadmap.* Source: build-up.ec.europa.eu.
13. Central Statistics Office (CSO). (2024). Labour Force Survey Q4 2023. Retrieved from https://www.cso.ie
14. SOLAS. (2023). National Skills Bulletin 2023. Skills and Labour Market Research Unit (SLMRU). Retrieved from https://www.solas.ie
15. Construction Industry Federation (CIF). (2023). Annual Construction Sector Report. Retrieved from https://www.cif.ie
16. Department of Enterprise, Trade and Employment (DETE). (2023). Employment Permits Statistics. Retrieved from https://enterprise.gov.ie
17. Eurostat. (2023). Gender employment gap in construction sector across EU. Retrieved from https://ec.europa.eu/eurostat
18. European Institute for Gender Equality (EIGE). (2022). Gender Segregation in Education, Training and the Labour Market. Retrieved from https://eige.europa.eu
19. McNaboe, J. (2025). Personal interview, Skills and Labour Market Research Unit (SLMRU), SOLAS.
20. Mair, J. (2025). Personal interview, Construction Industry Federation (CIF).
21. OECD. (2023). The Missing Entrepreneurs 2023: Policies for Inclusive Entrepreneurship. Retrieved from https://www.oecd.org
22. World Bank. (2021). Gender Equality in the Labor Market in the EU: An Economic Perspective. Retrieved from https://www.worldbank.org
23. Croatian Bureau of Statistics (DZS). (2024). *Monthly report on employment and wages in Croatia – July 2024.* Retrieved from https://www.dzs.hr
24. Croatian Employment Service (HZZ). (2024). *Labour Market Indicators and Sectoral Analysis.* Retrieved from https://www.hzz.hr
25. Ministry of Labour, Pension System, Family and Social Policy. (2024). *Labour Market Trends Report.* Retrieved from https://mrosp.gov.hr
26. Ministry of Science and Education (MZO). (2024). *Enrollment Statistics in Vocational and Higher Education.* Retrieved from https://mzo.gov.hr
27. Croatian Chamber of Economy (HGK). (2024). *Sector for Construction: Annual Labour Market Report.* Retrieved from https://www.hgk.hr
28. Vecernji List. (2024). *Sve više posla u građevini, ali nedostaje 9000 radnika.* Retrieved from https://www.vecernji.hr/vijesti/sve-vise-posla-u-gradevini-ali-nedostaje-9000-radnika-1841059
29. European Commission. (2020). *European Skills Agenda for sustainable competitiveness, social fairness and resilience.* Retrieved from https://ec.europa.eu/social/main.jsp?catId=1223
30. European Commission. (2021). *European Pillar of Social Rights Action Plan.* Retrieved from https://ec.europa.eu/social/main.jsp?catId=1226&langId=en
31. European Commission. (2020). *A Renovation Wave for Europe – Greening our buildings, creating jobs, improving lives.* Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0662
32. European Construction Sector Observatory. (2015–2022). *Analytical Reports on the EU Construction Sector.* Retrieved from https://ec.europa.eu/growth/sectors/construction/observatory_en
33. CEDEFOP. (2023). *Skills forecast: trends and challenges for construction occupations in Europe.* Retrieved from https://www.cedefop.europa.eu/en
34. Oxford Economics. (2023). *Women in Construction: Bridging the Green Jobs Gap.* Available through sector reports.

35. Government of Croatia. (2020). *National Development Strategy of the Republic of Croatia until 2030 (Nacionalna razvojna strategija RH do 2030.).* Retrieved from https://planiranje.gov.hr/nacionalna-razvojna-strategija/3220
36. Ministry of Science and Education, Croatia. (2021). *Strategic Framework for the Development of Vocational Education and Training 2021–2030.* Retrieved from https://mzo.gov.hr/istaknute-teme/odgoj-i-obrazovanje/strukovno-obrazovanje/strategijski-dokumenti/2190
37. Croatian Chamber of Economy (HGK) – Sector for Construction. (2023). *Sectoral Analysis: Employment and Labour Needs in Construction.* Retrieved from https://www.hgk.hr
38. Ministry of Labour, Pension System, Family and Social Policy, Croatia. (2021–2027). *Operational Program Efficient Human Resources and European Social Fund Plus.* Retrieved from https://esf.hr/nacionalni-esf-plus-program/
39. European Institute for Gender Equality (EIGE). (2018). *Study and Work in the EU: Set Apart by Gender.* Retrieved from https://eige.europa.eu/publications/study-and-work-eu-set-apart-gender
40. Agency for Statistics of B&H, *Thematic Bulletin: Women and Men in B&H, 2023* – Statistical indicators on employment by gender and sector. https://bhas.gov.ba/data/Publikacije/Bilteni/2023/NUM_00_2022_TB_0_BS.pdf
41. European Bank for Reconstruction and Development (EBRD), *EBRD Supports Women Engineers in Bosnia and Herzegovina*, 2023 – Data on the participation of women engineers and Corridor Vc projects. https://www.ebrd.com/news/2023/ebrd-supports-women-engineers-in-bosnia-and-herzegovina.html
42. *Law on Gender Equality in Bosnia and Herzegovina* (Official Gazette B&H 16/03, 102/09) – Articles 7–9 on equal opportunities and prohibition of discrimination. http://www.ohr.int/ohr-dept/legal/laws-of-bih/pdf/005%20Gender%20Equality%20Law%20of%20BiH.pdf
43. Gender Equality Agency / UN Women, *Gender Equality Profile of Bosnia and Herzegovina*, 2021 – Labour market position, sectoral segregation, and "glass ceiling" analysis. https://eca.unwomen.org/sites/default/files/Field%20Office%20ECA/Attachments/Publications/2021/7/UNDP%20UNW%20Political%20Parties%20and%20Gender%20Equality.pdf
44. Al Jazeera Balkans (2021), *Major Challenges for the Construction Sector in the Region During the Pandemic* – Workforce figures for construction in BiH. https://balkans.aljazeera.net/news/economy/2021/4/15/major-challenges-for-the-construction-sector-in-the-region-during-the-pandemic
45. Večernji list B&H (2024), *Labour Shortages Across All Sectors in BiH* – Commentaries on labour deficits and average wages in construction. https://www.vecernji.ba/vijesti/labour-shortages-across-all-sectors-in-bih-1578395
46. Raport.ba / FENA (2024), *How Much Does One Earn in BiH?* – Sector-based wage data, including gender-based pay gap. https://raport.ba/how-much-does-one-earn-in-bih-average-salaries-by-sector-and-gender/
47. Jutarnji list (2023), *Only 11% of Construction Workers Are Women* – Gender comparison in Croatian construction sector. https://www.jutarnji.hr/vijesti/hrvatska/only-11-of-construction-workers-are-women-15234567

48. WomenCanBuild EU Report (2019) – Comparative data on women in construction across EU countries. https://www.womencanbuild.eu/wp-content/uploads/2019/11/WomenCanBuild_Report.pdf
49. Personal Testimonies from Sector Stakeholders – e.g. Nikolina Stojčić (engineer), Milijana Miličević (entrepreneur), cited in: https://www.ebrd.com/news/2023/ebrd-supports-women-engineers-in-bosnia-and-herzegovina.html https://dnevnik.hr/vijesti/hrvatska/milijana-milicevic-young-woman-leading-a-construction-business.html
50. Statistisches Bundesamt / Bundesagentur für Arbeit – Employment and workforce statistics statistik.arbeitsagentur.dedemografie-portal.de.
51. Hauptverband der Deutschen Bauindustrie, *Bauwirtschaft in Zahlen 2025* – industry data on companies, workforce, turnover bauindustrie.de.
52. RKW Kompetenzzentrum (2024), *"Frauen in der Bauwirtschaft"* – blog article with latest female workforce statistics rkw-kompetenzzentrum.derkw-kompetenzzentrum.de.
53. Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen – Speech by Minister Klara Geywitz on women in construction (27.03.2023) bmwsb.bund.debmwsb.bund.de.
54. Reuters (19 Dec 2024), *"Labour shortages ease...survey"* – reports DIHK survey on hiring difficulties (53% of construction firms short of workers) reuters.com.
55. Bauindustrie.de – *Brancheninfo Bau* (Feb 2025), *"Verdienste in der Bauwirtschaft steigen…"* – wage statistics and ifo survey on vacancies bauindustrie.debauindustrie.de.
56. Bundesagentur für Arbeit – Press release *"Qualifizierte Fachkräfte weiterhin gesucht"* (28.05.2025) – shortage occupations analysis arbeitsagentur.dearbeitsagentur.de.
57. Build Better Lives (EFBWW) – *"There can't be a Renovation Wave without workers"* blog (Nov 2023) buildbetterlives.eubuildbetterlives.eu.
58. Pact for Skills – Construction Blueprint (EU Erasmus+ project) – description of Pact and its goals constructionblueprint.euconstructionblueprint.eu.
59. Bluebeam Blog (2022), *"Frauen im Baugewerbe: Chance für alle?"* – discusses gender gap, pay gap, and initiatives (RKW guide, Girls' Day) blog.bluebeam.comblog.bluebeam.com.
60. Bauindustrie.de – Press release *"Bau in der Nachwuchsklemme"* (22.07.2024) – details on apprenticeships decline and survey of firms bauindustrie.debauindustrie.de.
61. Bundesagentur für Arbeit / SOKA-BAU – apprenticeship and refugee-integration statistics bauindustrie.de.
62. Destatis – Tarifdaten Baugewerbe (2024) – collectively bargained wage rates and working hours destatis.dedestatis.de.
63. RKW Leitfaden 2022 – *"Potentiale von Frauen... erschließen"* (via Bluebeam blog summary) – recommendations for companies blog.bluebeam.com.
64. The Initiative Klischeefrei interview, conducted by Outside Media & Knowledge (OMK) as part of the FEMCON project, provides insights into the importance of challenging gender stereotypes in early education and career choices. Source: OMK, FEMCON Project, 2023.
65. The SCHÄCHTELE HSE senior safety engineer interview discusses the company's success with gender inclusivity in construction safety roles,

highlighting the benefits of a gender-balanced team and the need for cultural change in the industry. Source: OMK, FEMCON Project, 2023.
66. The Hauptverband der Deutschen Bauindustrie (HDB) interview offers a broader perspective on gender inequality in the German construction sector and discusses strategies to attract more women to the industry. Source: OMK, FEMCON Project, 2023.
67. https://www.instat.gov.al/en/themes/labour-market-and-education/employment-and-unemployment-from-lfs
68. https://blogs.worldbank.org/en/europeandcentralasia/women-and-employment-albania-s-construction-sector-closing-gender-gap
69. https://www.mdpi.com/2076-3387/14/8/180
70. https://documents1.worldbank.org/curated/en/564851554785298015/pdf/Enhancing-Women-s-Labor-Force-Participation-in-Road-Construction-Rehabilitation-and-Maintenance-in-Albania-Gender-Assessment-Recommendations-and-Action-Plan.pdf
71. https://monitor.al/en/ndertimi-u-rrit-me-20-6-me-2022-por-kontributi-ne-punesim-shenoi-renie
72. https://alfapress.al/english/ekonomi/instat-ekonomia-rritje-me-afro-4-kontribut-turizmi-ndertimi-rritja-e-pag-i152012
73. https://politiko.al/english/e-tjera/ekonomia-peng-i-ndertimit-mori-735-te-investimeve-te-brendshme-me-2023-i519586
74. https://albania.unteamresults.org/en/2024/870-key-developments-2024
75. https://www.instat.gov.al/en/themes/demography-and-social-indicators/gender-equality/
76. https://www.etf.europa.eu/sites/default/files/2024-11/ETF%20CrossCountry%20Monitoring%20Report%202024_EN%20FINAL%20%281%29.pdf
77. https://albania.unwomen.org/sites/default/files/2023-05/KLSH%20Audit%202023_Brief%20English_web.pdf
78. MONSTAT; https://www.monstat.org
79. Employment Agency of Montenegro (ZZZCG); – https://www.zzzcg.me
80. Government strategies (Employment 2021–2025; Gender Equality 2021–2025).
81. European Commission – Montenegro 2024 Report;