SEE-GL
SKILLS AND EMPLOYMENT ENHANCEMENT IN GREEN LOGISTICS

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Integrating ESG Principles in Transport Logistics: Policy and Industry Recommendations

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Project Summary

The Skills and Employment Enhancement in Green Logistics (SEE-GL) project is a regional initiative aiming to modernize vocational education and training (VET) in the transport and logistics sector across Southeast Europe.

Vision

SEE-GL envisions a future where the transport and logistics sector in Southeast Europe operates sustainably, equipping professionals with ESG-driven skills that meet the demands of modern, environmentally conscious economies. The project strives to create a resilient, inclusive, and innovative logistics industry that contributes to regional development and EU integration.

Goals

Integrate ESG principles

into vocational education and training for transport and logistics.

Develop a new occupational profile

of ESG Specialist in Transport Logistics to address emerging labor market needs.

Enhance the capacities of VET institutions

to deliver ESG-focused education and training.

1. Introduction

The "Skills and Employment Enhancement in Green Logistics" (SEE-GL) project is a regional initiative spanning Slovenia, Croatia, Bosnia and Herzegovina, Kosovo, and Montenegro. Its primary objective is to modernize vocational education and training (VET) within the transport and logistics sector by integrating Environmental, Social, and Governance (ESG) principles into VET curricula. This initiative directly addresses critical regional challenges, including environmental sustainability, labor market adaptability, social inclusion, and good governance.

SEE-GL supports the transition towards a green and sustainable logistics industry by equipping professionals with future-oriented skills and fostering cooperation between public and private sector actors. It also promotes the use of digital education tools and alignment with the European Qualifications Framework (EQF) to facilitate mobility and employability. A key goal of the project is the development of a new occupational profile the ESG Specialist in Transport Logistics as well as the improvement of training capacities of VET institutions to respond to evolving labor market demands. The research methodology employed for this project involved a combination of desk research and qualitative fieldwork, specifically focus group discussions. This approach allowed for an in-depth analysis of national socio-economic conditions, labor market trends, and training requirements, with a particular emphasis on green logistics and emerging job profiles.

Beyond the SEE-GL project, a broader analysis of ESG industry standards and practices in transport and logistics across the five participating countries aimed to identify best practices and highlight existing gaps. This research investigated global ESG trends and evaluated relevant laws, regulations, and guidelines within each national context, illustrating the varying stages of ESG principle evolution in both EU member states and those aspiring to deeper EU integration.

The objective was to provide local stakeholders with evidence-based insights to inform more effective, context-specific strategies, emphasizing the roles and influence of various actors such as regulatory bodies, industry leaders, and vocational education institutions. Quantitative methods, including surveys and data analysis, were employed to generate evidence-based recommendations.The findings underscore the importance of green logistics, robust regulatory frameworks, and digitalization in addressing environmental challenges while simultaneously fostering socio-economic development. The literature review revealed varying degrees of ESG implementation across the region, reflecting differences in regulatory maturity, institutional support, and resource availability. Common challenges identified include limited awareness of ESG principles among industry stakeholders, regulatory complexity, financial constraints, and insufficient ESG-specific training opportunities. Despite these challenges, each country demonstrated unique efforts and initiatives aimed at enhancing ESG adoption, highlighting significant opportunities for learning, collaboration, and advancement in regional ESG integration.

2. Policy Recommendations

Integrating ESG principles into national policies for the transport logistics sector is crucial for sustainable development across the Western Balkans and beyond. The research highlights significant disparities in regulatory maturity and implementation across the region, necessitating tailored yet harmonized policy approaches.

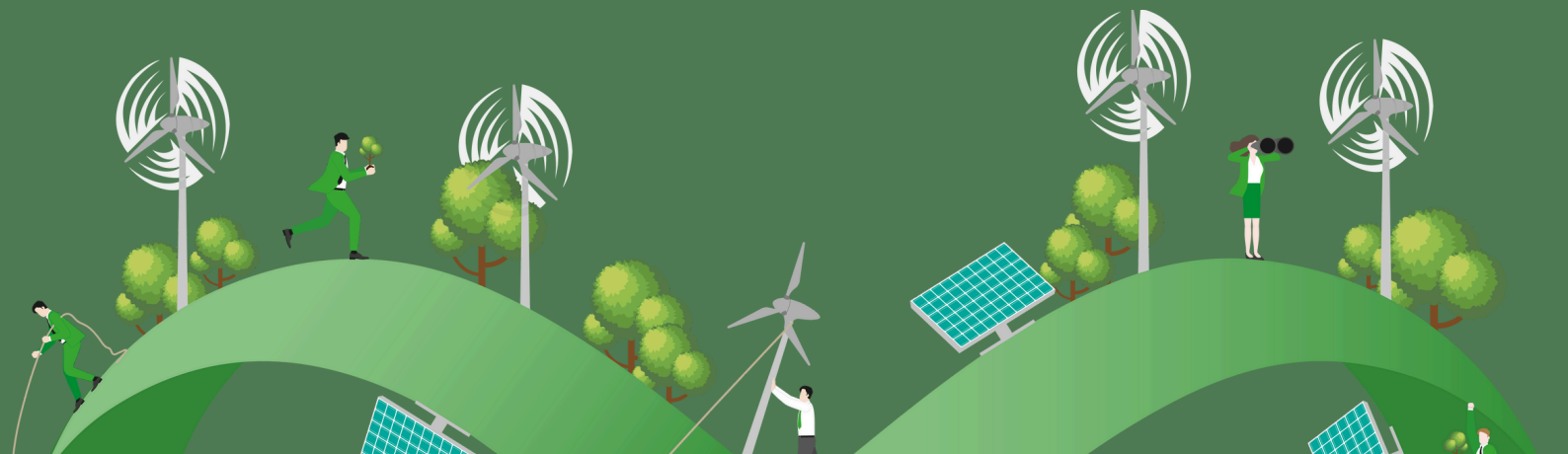
2.1. Strengthening Regulatory Frameworks and Enforcement

Bosnia and Herzegovina exemplifies a transport logistics sector hindered by outdated infrastructure, limited investment, and regulatory inefficiencies. Key bottlenecks include slow customs procedures, aging infrastructure, and insufficient intermodal capabilities. While the transport policy incorporates some ESG elements, effective implementation is lacking. Sustainable transport solutions are underdeveloped, with minimal investment in greener alternatives like railways and inland waterways. Socially, road safety is a major issue due to high accident rates and poor data tracking, and passenger rights remain weak, failing to meet EU standards. Governance challenges include weak regulations, particularly in rail and civil aviation, and a lack of independent oversight.

To address these issues, Bosnia and Herzegovina requires:

- **Comprehensive Regulatory Reform:** Develop and enforce clear, consistent, and comprehensive regulations that mandate ESG disclosures and sustainable practices across the transport and logistics sector. This includes strengthening existing laws related to environmental protection, labor standards, and corporate governance.
- **Investment in Green Infrastructure:** Prioritize public and private investment in modern, green infrastructure, including electrified rail networks, intermodal terminals, and charging infrastructure for electric vehicles. This will reduce reliance on road transport and lower emissions.
- **Enhanced Intermodal Connectivity:** Implement policies that promote and incentivize the development of intermodal transport solutions to improve efficiency and reduce the environmental footprint of freight movement.
- **Road Safety and Passenger Rights:** Introduce and strictly enforce regulations to improve road safety, including stricter vehicle inspection standards, driver training, and robust data collection mechanisms. Strengthen passenger rights to align with EU standards.
- Independent Oversight: Establish or empower independent regulatory bodies with sufficient authority and resources to ensure compliance with ESG regulations and to address governance challenges effectively.

Croatia, as an EU member, has made strides in adopting and implementing EU directives related to sustainability, such as the CSRD Directive (EU) 2022/2464, which mandates sustainability reporting for public interest entities with over 500 employees. This reporting aligns with ESRS standards and aims to connect financial institutions with sustainable financing, cascading obligations through the supply chain. However, intermodal connectivity between road, rail, and maritime transport remains underdeveloped.



For Croatia, policy recommendations include:

- **Full Implementation of EU Directives:** Ensure the full and effective implementation of all relevant EU directives, particularly those related to sustainable finance and supply chain due diligence.
- **Incentivize Intermodal Development**: Introduce policies and financial incentives to accelerate the development of intermodal transport infrastructure and services, leveraging Croatia's strategic geographic position as a logistics hub.
- **Support for SMEs in ESG Reporting**: Provide clear guidelines, training, and financial support for small and medium-sized enterprises (SMEs) to comply with ESG reporting requirements, as these obligations will cascade through the supply chain.

Kosovo's aspiration for EU integration necessitates a deeper understanding and adoption of ESG principles. Regulatory initiatives such as the National Environmental Action Plan (NEAP) and the Pristina Green City Action Plan, developed in cooperation with the European Bank for Reconstruction and Development (EBRD), focus on sustainability in urban mobility, energy efficiency, and waste management. Projects like "Prishtina Urban Transport II" and the "Livable Cities Project" aim to enhance public transport sustainability. However, there are gaps in vocational education and training (VET) curricula, particularly in integrating ESG-specific competencies.

For Kosovo, key policy recommendations are:

- **Develop a National Green Logistics Strategy:** Establish clear GHG targets, modernize infrastructure with low-emission technologies, and promote intermodal systems aligned with NEAP and Green City goals.
- **Harmonize with the EU Green Deal:** Align policies with EU climate objectives and gradually integrate sustainability directives into national legislation.
- **Integrate ESG Competencies into VET:** Update curricula to include eco-driving, emissions management, sustainable logistics, and social inclusion skills.
- **Introduce Incentives for Sustainable Practices:** Offer tax breaks, grants, and green credit lines to companies investing in clean vehicles, digital optimization, and green warehousing.
- **Strengthen Environmental Monitoring:** Empower KEPA to collect emissions data, enforce compliance, and establish sector-specific ESG metrics.

Montenegro is actively working towards EU accession, with its Transport Development Strategy 2019–2035 aiming to establish ESG directives, including TEN-T objectives, EU Green Deal principles, National Sustainable Development Strategy 2030 (NSSD), and Strategic Environmental Impact Assessment (SEA). The country aims to minimize its carbon footprint, noise pollution, and environmental impact through the adoption of alternative fuels, green transport technologies, and digital traffic management systems (Intelligent Transport Systems – ITS). Montenegro has also put in place laws requiring environmental assessments for transport projects, implementing EU vehicle emission standards, and regulating rail and maritime transport safety and environmental directives.

For Montenegro, policy recommendations include:

- **Accelerate Implementation of Transport Strategy:** Expedite the implementation of the Transport Development Strategy 2019–2035, ensuring that all planned ESG directives and green transport initiatives are realized within the stipulated timelines.
- **Promote ITS Adoption:** Develop policies that incentivize the widespread adoption of Intelligent Transport Systems (ITS) to optimize traffic flow, reduce emissions, and improve safety across the transport network.
- **Cross-Border Cooperation:** Enhance cross-border cooperation with neighboring countries to harmonize transport policies and facilitate the seamless flow of green logistics across the region.
- **Mandated and State-Funded Training:** Address the significant gap in access to relevant training by introducing state-mandated and compensated programs for both public and private transport sector workers. Training content should be tailored to actual job needs to ensure practical impact, as current mandatory programs are often misaligned with real workplace requirements.

Slovenia is strategically positioned at the crossroads of major European transport corridors and is an EU member since 2004. Its logistics sector contributes approximately 7.4% to the national GDP, with the Port of Koper serving as a critical gateway for landlocked Central European countries. Despite its advantages, Slovenia faces challenges such as an aging workforce, outward migration of skilled workers, and insufficient educational pipelines for emerging technical specializations. The country's transport infrastructure presents a mixed picture, with advanced port facilities but underdeveloped railway networks compared to road transport.

For Slovenia, policy recommendations include:

- **Strategic Investment in Rail Infrastructure:** Accelerate planned investments in railway infrastructure modernization, such as the Divača–Koper railway project, to shift freight transport from road to rail, aligning with EU green policies and reducing environmental impact.
- **Addressing Workforce Shortages:** Implement targeted policies to address labor shortages in specialized logistics roles, including incentives for retaining skilled workers and attracting new talent, and developing educational programs that align with emerging technical and sustainability competencies.
- **Enhancing Green Transition Financing:** Develop mechanisms to facilitate access to green transition financing for small and medium-sized enterprises (SMEs) in the logistics sector, addressing their reported difficulties in securing funds for sustainability improvements.
- **Harmonizing ESG Reporting and Compliance:** Provide clear guidelines and support for logistics enterprises to comply with forthcoming ESG reporting obligations, such as the Carbon Border Adjustment Mechanism (CBAM), and align with sustainable finance taxonomy standards to improve access to green investment portfolios.
- **Promoting Interdisciplinary Education:** Encourage the development of interdisciplinary educational programs that combine technical logistics skills with sustainability competencies, such as carbon accounting and circular economy design, to bridge the existing skills gap.

2.2. Regional Collaboration and Knowledge Sharing

Across the region, the research identified varying degrees of ESG implementation, reflecting differences in regulatory maturity, institutional support, and resource availability. Common challenges include limited awareness of ESG principles, regulatory complexity, financial constraints, and insufficient ESG-specific training opportunities. Despite these challenges, each country exhibited unique efforts and initiatives aimed at enhancing ESG adoption, highlighting opportunities for learning, collaboration, and advancement in regional ESG integration.

Therefore, a crucial policy recommendation for the entire region is to foster enhanced regional collaboration and knowledge sharing:

- **Establish a Regional ESG Transport Logistics Forum**: Create a permanent forum for policymakers, industry leaders, academics, and civil society organizations from all participating countries to regularly share best practices, discuss challenges, and coordinate policy initiatives related to ESG in transport logistics.
- **Develop Harmonized ESG Standards:** Work towards developing harmonized ESG standards and reporting frameworks across the Western Balkans, facilitating cross-border trade and investment in sustainable logistics.
- **Joint Research and Development Programs:** Launch joint research and development programs focused on green logistics technologies, sustainable fuel alternatives, and innovative supply chain solutions, leveraging the collective expertise and resources of the region.
- **Capacity Building and Training Programs:** Implement region-wide capacity building and training programs for policymakers and regulators on effective ESG policy design, implementation, and enforcement.
- **Public Awareness Campaigns:** Conduct coordinated public awareness campaigns to educate citizens and businesses about the importance of ESG principles in transport logistics and their role in achieving sustainable development.

By implementing these policy recommendations, national governments can create an enabling environment for the widespread adoption of ESG principles, driving the transport logistics sector towards a more sustainable, resilient, and socially responsible future.

SPREAD THE KNOWLEDGE!

3. Industry Recommendations

For the transport logistics sector to effectively integrate ESG principles, industry players must adopt proactive strategies that go beyond mere compliance. The research indicates that while there is growing awareness, significant challenges remain, including high operating costs, lack of skilled labor, and underdeveloped infrastructure.

3.1. Embracing Green Technologies and Practices

Across the region, companies face rising operating costs, particularly in transport and wages, which limit job creation and workforce development. Firms often struggle with poor infrastructure, a lack of skilled labor, and limited technological advancement. The outflow of skilled workers, especially drivers, remains a major concern.

Industry players should focus on:

- **Investing in Sustainable Fleets:** Prioritize the adoption of electric, hydrogen, or other alternative fuel vehicles. While initial costs may be high, long-term operational savings and environmental benefits are substantial.
- **Optimizing Logistics Operations:** Implement advanced route optimization software, efficient warehousing systems, and smart inventory management to reduce fuel consumption, minimize waste, and improve overall operational efficiency.
- **Circular Economy Principles:** Integrate circular economy principles into supply chain management, focusing on reducing, reusing, and recycling materials. This includes optimizing packaging, managing reverse logistics, and exploring opportunities for product life extension.
- **Renewable Energy Integration:** Invest in renewable energy sources for warehouses, distribution centers, and other facilities. This can include solar panels, wind turbines, or purchasing renewable energy credits.

3.1.2. Workforce Development and Training

A major barrier to advancing green logistics is the gap in education and skills, as many workers lack the expertise needed to operate with new technologies, such as electric vehicles and digital route optimization tools. Companies often have to train existing employees or seek new, specialized staff, which is complicated by an absence of green logistics programs in formal education systems.

Industry recommendations for workforce development include:

- **Upskilling and Reskilling Programs**: Develop and implement comprehensive training programs for existing employees to acquire skills in green logistics technologies, sustainable practices, and digital tools. This includes eco-driving techniques, renewable energy management, and data analytics for supply chain optimization.
- **Collaboration with Educational Institutions:** Partner with vocational education and training (VET) institutions and universities to develop specialized curricula for ESG in transport logistics. This will ensure a steady supply of skilled professionals ready to meet industry demands. The SEE-GL project is a prime example of such collaboration.
- **Promoting ESG Awareness:** Conduct internal awareness campaigns to educate employees at all levels about the importance of ESG principles and their role in achieving sustainability goals. This can foster a culture of sustainability within the organization.
- **Attracting New Talent**: Highlight career opportunities in green logistics to attract new talent, particularly younger generations interested in sustainable careers. This includes showcasing the use of advanced technologies and the positive environmental impact of the sector.

3.1.3. Collaboration and Transparency

The introduction of ESG standards requires coordinated efforts from all relevant stakeholders, including the government, the private sector, and the academic community. Limited awareness of ESG principles among industry stakeholders, regulatory complexity, financial constraints, and insufficient ESG-specific training opportunities are common challenges.

Industry players should prioritize:

- **Supply Chain Collaboration**: Work closely with suppliers, customers, and logistics partners to integrate ESG principles throughout the entire supply chain. This includes sharing best practices, setting common sustainability targets, and ensuring transparency in reporting.
- **ESG Reporting and Disclosure**: Proactively engage in ESG reporting and disclosure, even if not mandated by national regulations. This demonstrates commitment to sustainability, enhances reputation, and attracts responsible investors.
- **Public-Private Partnerships:** Engage in public-private partnerships to address infrastructure gaps and develop sustainable transport solutions.
- **Industry Associations and Networks:** Actively participate in industry associations and networks focused on sustainable logistics. This provides a platform for knowledge exchange, advocacy, and collective action to drive industry-wide change.

3.2. Country-Specific Industry Recommendations

3.2.1. Bosnia and Herzegovina

Companies in Bosnia and Herzegovina face particular challenges related to outdated infrastructure and regulatory inefficiencies. Industry recommendations include:

- **Infrastructure Modernization Partnerships:** Collaborate with government and international organizations to modernize transport infrastructure, particularly focusing on intermodal connectivity.
- **Regional Logistics Clusters:** Establish regional logistics clusters to consolidate resources, promote innovation, and support green logistics initiatives.
- **Skills Development Focus:** Prioritize basic digital literacy and green logistics awareness training to address the fundamental skills gap in the workforce.

3.2.2. Croatia

As an EU member with advanced regulatory frameworks, Croatian companies should focus on:

- **EU Directive Compliance Leadership:** Take a proactive approach to implementing EU sustainability directives and serve as regional leaders in ESG reporting and compliance.
- **Intermodal Transport Development:** Leverage Croatia's strategic geographic position by investing in intermodal transport solutions that connect road, rail, and maritime transport.
- **Supply Chain ESG Integration:** Extend ESG requirements to small and medium-sized suppliers, helping them build capacity for sustainability reporting and practices.

3.2.3. Kosovo

Companies in Kosovo should focus on building foundational ESG capabilities:

- **Digital Tracking Systems:** Implement digital tracking systems to monitor fuel consumption and optimize delivery routes, building on existing initiatives by local firms.
- **Public-Private Infrastructure Partnerships:** Engage actively in public-private partnerships to address infrastructure gaps, particularly in collaboration with international organizations like the World Bank and EBRD.
- **Green Technology Adoption:** Despite high costs and limited governmental incentives, gradually adopt renewable energy solutions and electric vehicles where feasible.
- **Expand ESG Skills Development:** Partner with VET institutions to design targeted training modules and raise sustainability awareness

3.2.4. Montenegro

Companies in Montenegro should align with the country's EU accession goals:

- **Transport Strategy Alignment:** Align business strategies with Montenegro's Transport Development Strategy 2019–2035, particularly focusing on alternative fuels and green transport technologies.
- **ITS Implementation:** Invest in Intelligent Transport Systems (ITS) to optimize traffic flow, reduce emissions, and improve safety.
- **Cross-Border Collaboration:** Develop cross-border logistics solutions that facilitate seamless green logistics across the region.

3.2.5. Slovenia

Slovenian companies face unique challenges related to workforce shortages and need for specialized skills:

- **Modular Micro-credential Programs:** Implement modular micro-credential programs to enable incremental upskilling for logistics professionals, allowing them to progressively acquire sustainability competencies without career interruption.
- **Interdisciplinary Skills Development:** Prioritize training programs that combine technical logistics skills with emerging specialties like carbon footprint accounting and circular supply chain design.
- **Cybersecurity Skills Training:** Develop targeted training initiatives to address the cybersecurity skills gap among mid-career professionals in the logistics sector.
- **Rail Infrastructure Utilization:** Maximize the use of planned railway infrastructure investments, such as the Divača-Koper railway project, to shift freight transport from road to rail.
- **Green Financing Access:** Develop strategies to access green transition financing, particularly for SMEs that face difficulties in securing funds for sustainability improvements.

By implementing these industry recommendations, companies in the transport logistics sector can not only contribute to a more sustainable future but also enhance their competitiveness, attract talent, and build stronger relationships with stakeholders. The combination of general best practices and country-specific approaches ensures that recommendations are both comprehensive and contextually relevant.

4. Conclusion

For VET organizations and transport- logistics sector

The integration of Environmental, Social, and Governance (ESG) principles into the transport logistics sector is not merely a regulatory obligation but a strategic imperative for sustainable development and long-term competitiveness. The research conducted through the SEE-GL project and the broader analysis of ESG industry standards across Slovenia, Croatia, Bosnia and Herzegovina, Kosovo, and Montenegro reveals a landscape of both significant challenges and promising opportunities. Common challenges across the region include underdeveloped infrastructure, limited investment, regulatory complexities, and a notable gap in ESG-specific skills and awareness within the workforce. These issues are compounded by the high operating costs and the outflow of skilled labor, particularly in countries like Bosnia and Herzegovina. Despite these hurdles, there is a growing recognition among companies of the need to align with ESG principles to remain competitive in the international market.The path forward requires a multifaceted and coordinated approach involving governments, industry, and academic institutions. Policy recommendations emphasize the need for strengthening regulatory frameworks, ensuring effective enforcement, and incentivizing green infrastructure development and intermodal connectivity. Regional collaboration and knowledge sharing are crucial to harmonize ESG standards, launch joint research initiatives, and build capacity across the Western Balkans. For the industry, key recommendations revolve around embracing green technologies and practices, such as investing in sustainable fleets and optimizing logistics operations through digital solutions.

Crucially, significant investment in workforce development and training is required to bridge the existing skills gap and prepare the labor force for new green logistics technologies. Collaboration and transparency throughout the supply chain, proactive ESG reporting, and engagement in public-private partnerships are also vital for driving industry-wide change.The country-specific recommendations acknowledge that while general ESG principles apply across the region, each nation faces unique circumstances that require tailored approaches. Slovenia's focus on addressing workforce shortages through specialized training programs, Croatia's leadership role in EU directive implementation, Kosovo's emphasis on foundational digital systems, Montenegro's alignment with EU accession goals, and Bosnia and Herzegovina's need for infrastructure modernization all reflect the diverse landscape of ESG implementation across the region. In essence, the successful integration of ESG standards hinges on a collective commitment to education, awareness, and the development of appropriate policies and regulations. As highlighted by the SEE-GL project, the ultimate aspiration is to create lasting improvements in sustainable and socially responsible practices throughout the region's transport and logistics sector. Without coordinated efforts and substantial investments, the logistics sector risks lagging behind in sustainable development, missing opportunities for both environmental benefits and economic growth. By embracing these recommendations, the transport logistics sector can not only mitigate environmental impact and enhance social well-being but also unlock new avenues for economic prosperity and resilience.

5. References

Available on the website: www.esg-logistic.eu.

D2.1.ESGIndustryStandardsandPracticesinTransportandLogistics (SEE-GL)
D2.2.TheSkillsandEmploymentEnhancementinGreenLogistics(SEE-GL)

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