

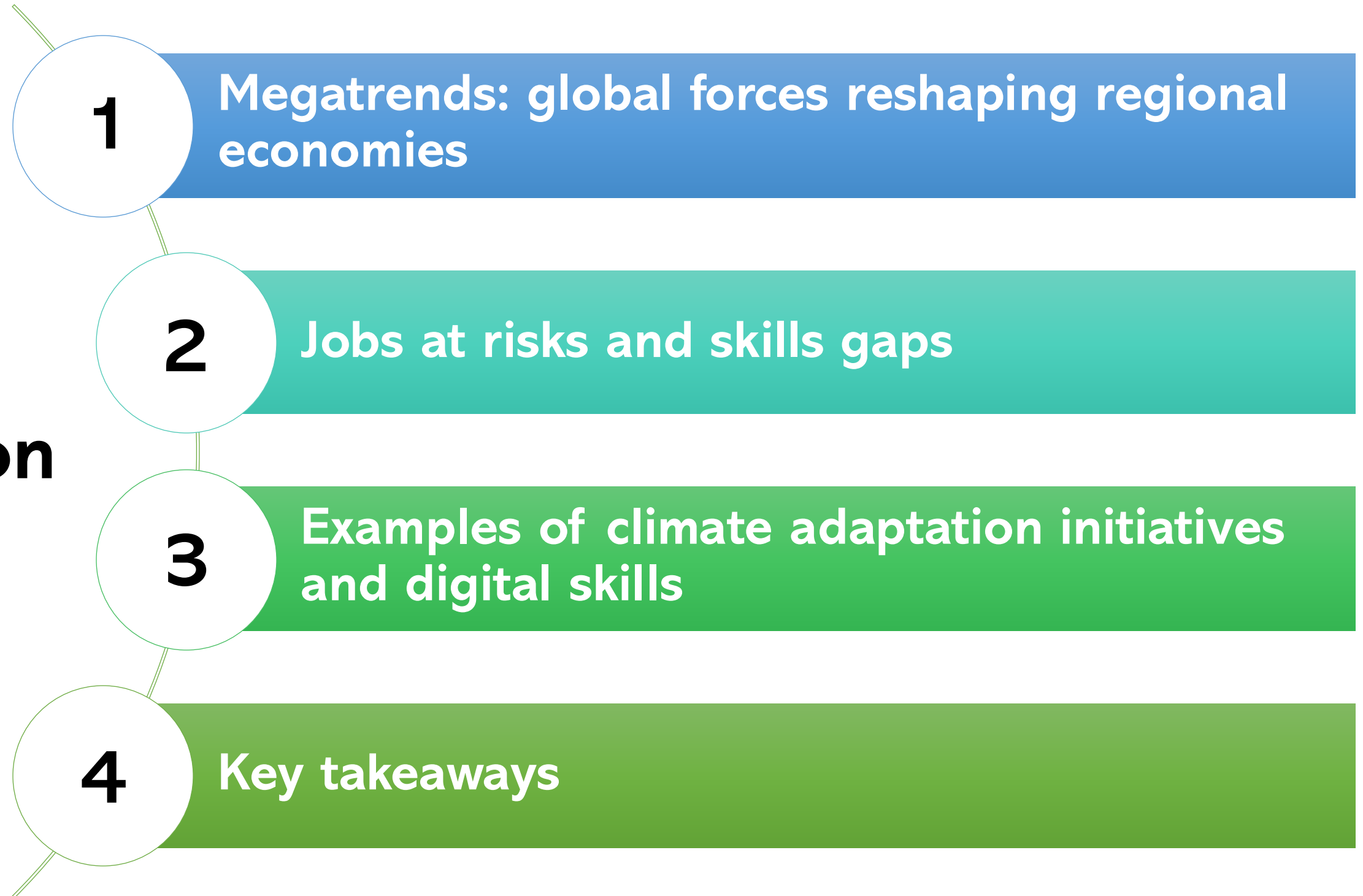
Closing the Skills Gap: Green and Digital Skills for a Competitive Europe

14th Annual Forum of the EU Strategy for the Danube Region

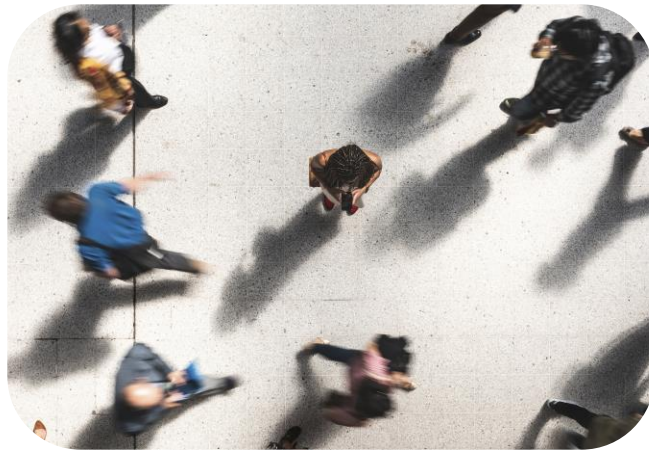
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This presentation

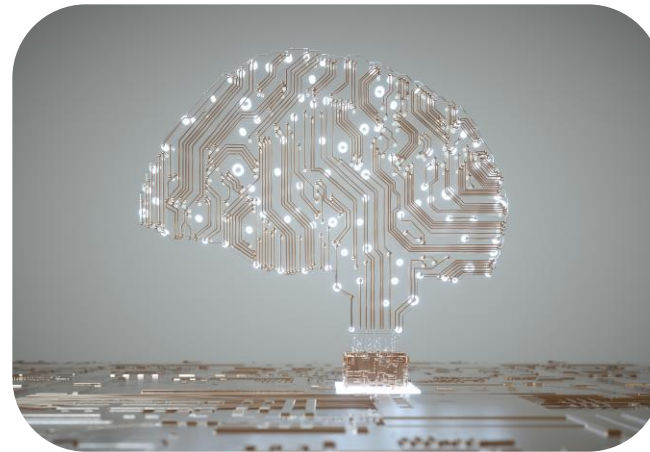


Megatrends impact education and skills



Demographics and migration

- Decrease in school-age population and increase in aging population
- Large brain drain
- Impacts on education infrastructure network/school rationalization



Technological change

- New skills and occupational needs
- New approaches to education management, teaching, and learning in classroom and virtually
- Amplifies learning and management with AI



Climate change

- Increased vulnerability of households/students/facilities
- Changing nature of jobs/work
- Need for climate-resilient education infrastructure, and greater focus on lifelong learning



Geopolitical uncertainty

- Increased geopolitical uncertainty
- Pressure to reallocate expenditure from education to other sectors/tight fiscal space



The region's labor market paradox

Labor shortages vs unemployment

Despite high unemployment and low labor force participation, many sectors struggle to find workers

Skills gaps in key sectors

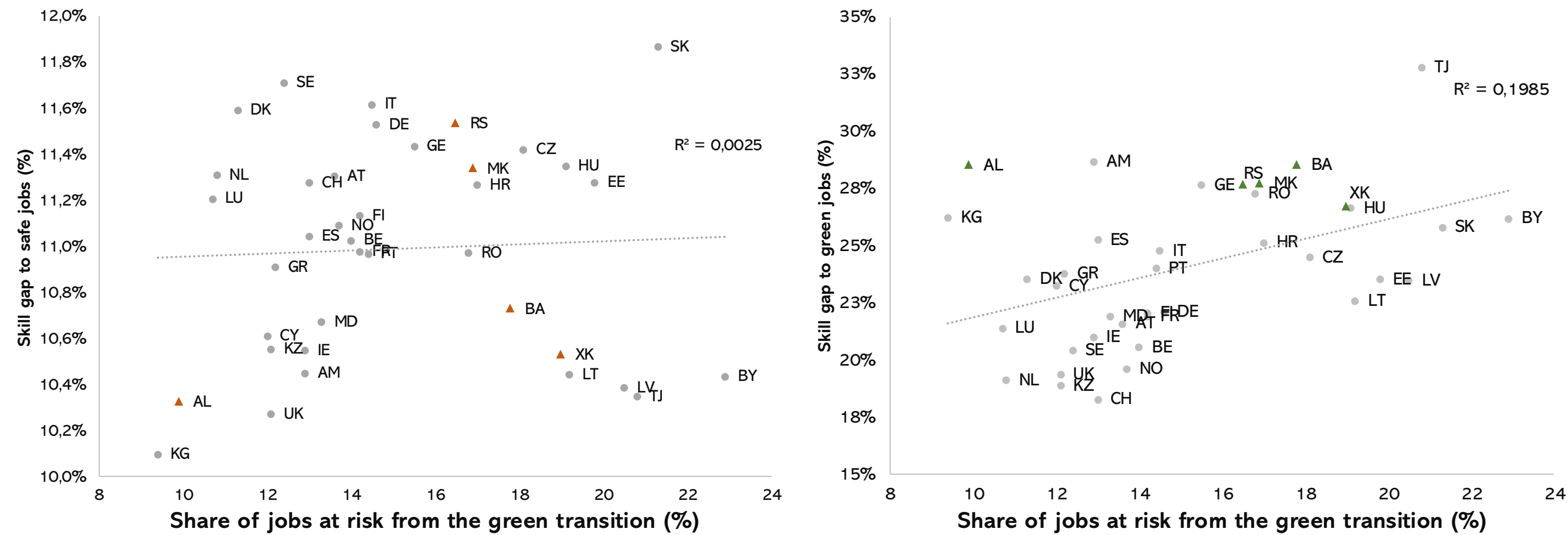
Digital and green sectors expand rapidly but lack enough workers with specialized skills, slowing potential growth.

Structural challenges

Aging populations, outmigration, and poorly aligned education systems limit progress toward high-income economic status.

Green transition and jobs at risk in the Western Balkans

Kosovo has the largest proportion of jobs at risk at 19%, followed by Bosnia and Herzegovina at 17.8% and North Macedonia at 16.9%. Countries exhibiting higher emissions generally experience a greater percentage of vulnerable jobs.



Source: Renata Mayer Gukovas, Daniel Garrote-Sanchez and Mattia Makovec (2025). "Who's at risk of the Green Transition? An analysis of the Extensive and Intensive Margin across countries in Europe and Central Asia". In: World Bank.

Jobs profiles and significant skills gaps

Occupations vary widely in their exposure to displacement and in the human capital required to transition. Some high-risk jobs may require minimal retraining, while others demand significant skill upgrades.



Source: Renata Mayer Gukovas, Daniel Garrote-Sanchez and Mattia Makovec (2025). “Who’s at risk of the Green Transition? An analysis of the Extensive and Intensive Margin across countries in Europe and Central Asia”. In: World Bank.

Demographic vulnerability patterns

Men are more likely to be displaced from high-carbon jobs

Older workers face higher displacement risk

Women face larger skill gaps to green occupations

Women in low-education roles have skills gaps severity



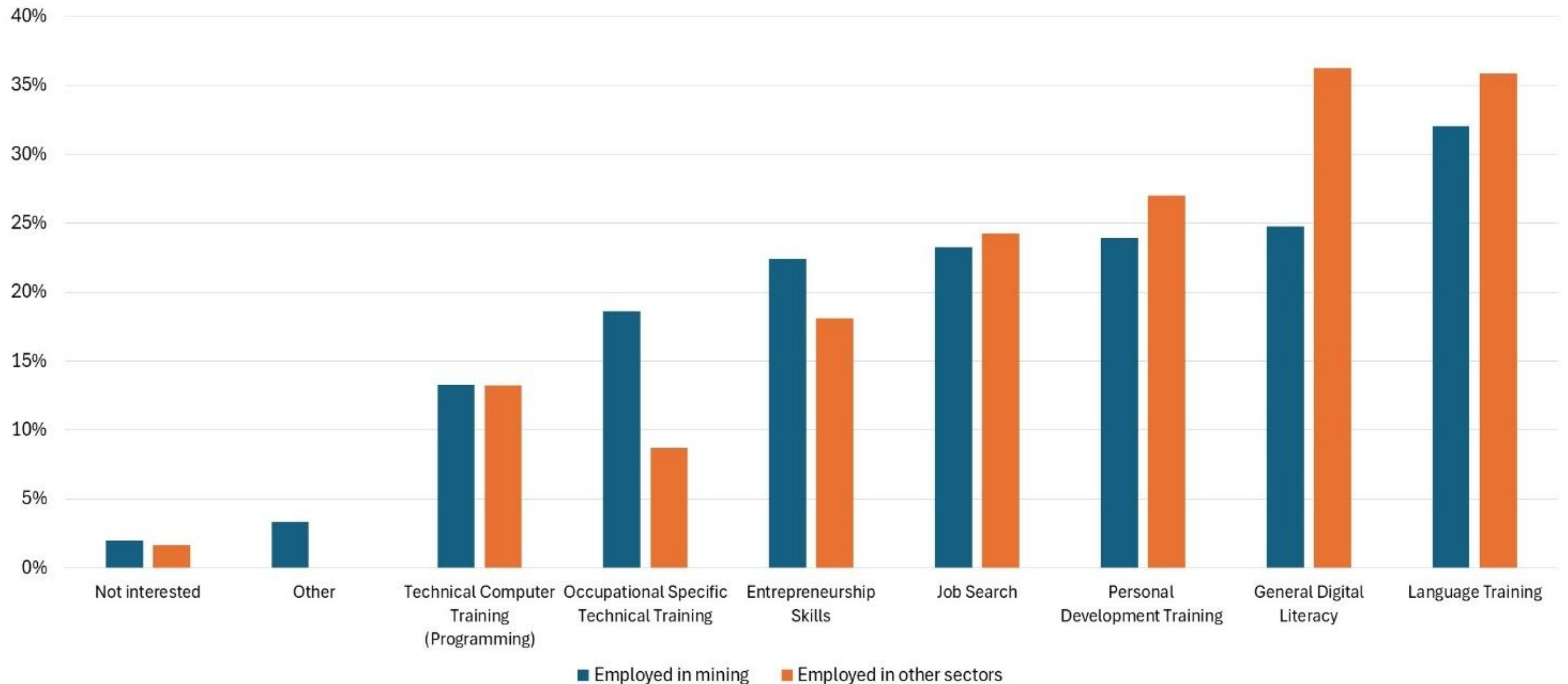
Impact of mine closure on workers and skills

Males in Banovici are more willing to reskill for a new job compared to their male counterparts in Zenica, but women are generally more open to reskilling than men

WHEN LOOKING FOR A JOB, WOULD YOU BE WILLING TO LEARN A NEW JOB/RESKILL?												
	Total employed in mining and quarrying		Total employed in other sectors		Municipality respondents employed in mining and quarrying *				Municipality respondents employed in other sectors			
					Banovici		Zenica		Banovici		Zenica	
	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males
Yes, even if it required learning a completely new profession	22%	14%	21%	15%	33%	27%	0%	22%	31%	30%	11%	10%
Yes, but using the competences I have	42%	46%	52%	57%	50%	48%	100%	62%	53%	42%	51%	61%
No	37%	40%	27%	28%	17%	26%	0%	16%	16%	28%	39%	28%

* Data does not include the results from the RMU Banovici Survey.
Source: BiH Employment, Skills and Preferences Survey, 2024

Top training topics - Miners vs. other workers



Source: BiH Employment, Skills and Preferences Survey 2024

Strengthening climate resilience through education together with the Adaptation Fund

Bolster the capacity of the education systems and societies in the region to adapt to the increasingly pronounced impacts of climate change (floods, heatwaves, etc.)

Montenegro



School resilience retrofits and repurposing

Curriculum framework updates and extra-curricular activities

In-service teacher/principal training & capacity building for climate resilience

Evaluation and technical assistance for MoE

North Macedonia



School resilience retrofits

Extra-curricular programming on climate resilience

In-service teacher/principal training & capacity building for climate resilience

Evaluation and national public conference to present outcomes

Uzbekistan



Infrastructure upgrades through specialized school and university laboratories

Modular sustainability curriculum in general and VET schools

Pilot of a national climate literacy assessment framework

Student-led climate action projects and annual student competition

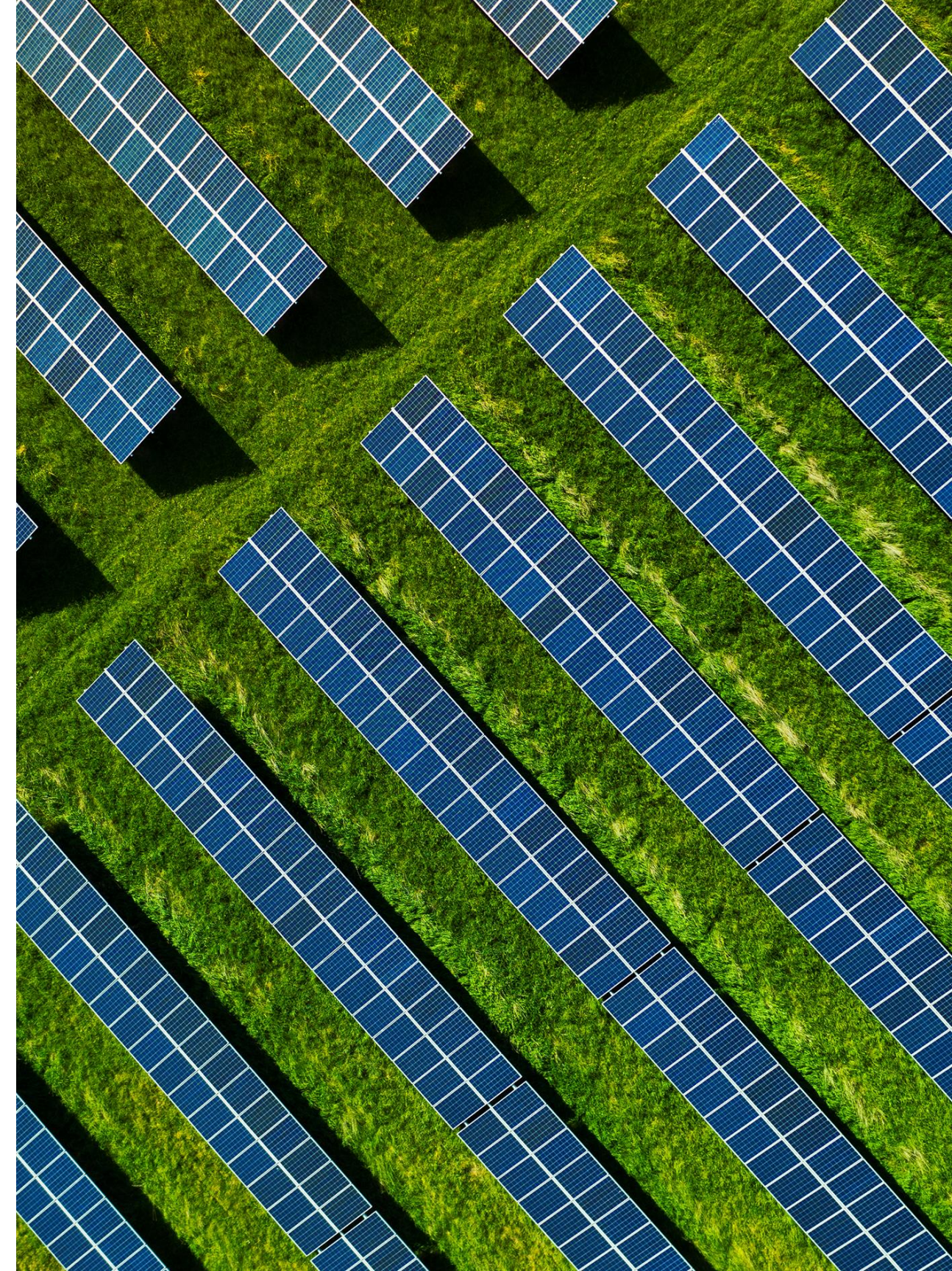
Digital Skills empower the adoption of sustainable technologies, accelerating the green transition

The demand for green and digital skills is rapidly evolving and can be highly unpredictable.

Across six MENA countries, around 6% of the job postings require at least one green skill. Nearly one in three jobs advertised online require at least one digital skill. Most digital and green job opportunities require high levels of education.

Low Digital Competency Rates

Only 25–40% of the population in Kosovo, Albania, and Serbia possess basic digital skills.



Results of Albania “Smartlabs”

- ✓ **216 Smartlab spaces** equipped with full technology package established and functioning in the 200 target schools
- ✓ Students engaged in learning **digital skills** via the **Code Monkey platform**
- ✓ **Training of 200 Smartlab school principals, 432 teachers, 190 ICT teachers** completed by University of Tirana
- ✓ CEB financing **scale-up** of Smartlabs in an **additional 627 schools**

Digital Readiness in Tertiary Institutions

According to IFC's digital skills benchmarking database of tertiary institutions

ARTIFICIAL INTELLIGENCE

Several institutions have begun exploring AI, yet most lack established guidelines for its ethical use.



50% of institutions address AI integration or exploration in their strategic planning documents.

73% of these institutions do not have a formal policy outlining guidelines and principles for ethical and effective use of AI in learning, teaching, and research.

DIGITAL ROLES AND GOVERNANCE

Institutions are on the way to define digital roles but lack governance for transformation.



45% of institutions are actively defining digital roles (e.g. digital transformation leaders) with outlined responsibilities.

50% of these institutions do not have a governance structure in place to oversee the approval, funding, and monitoring of digital transformation initiatives.

AUTOMATION

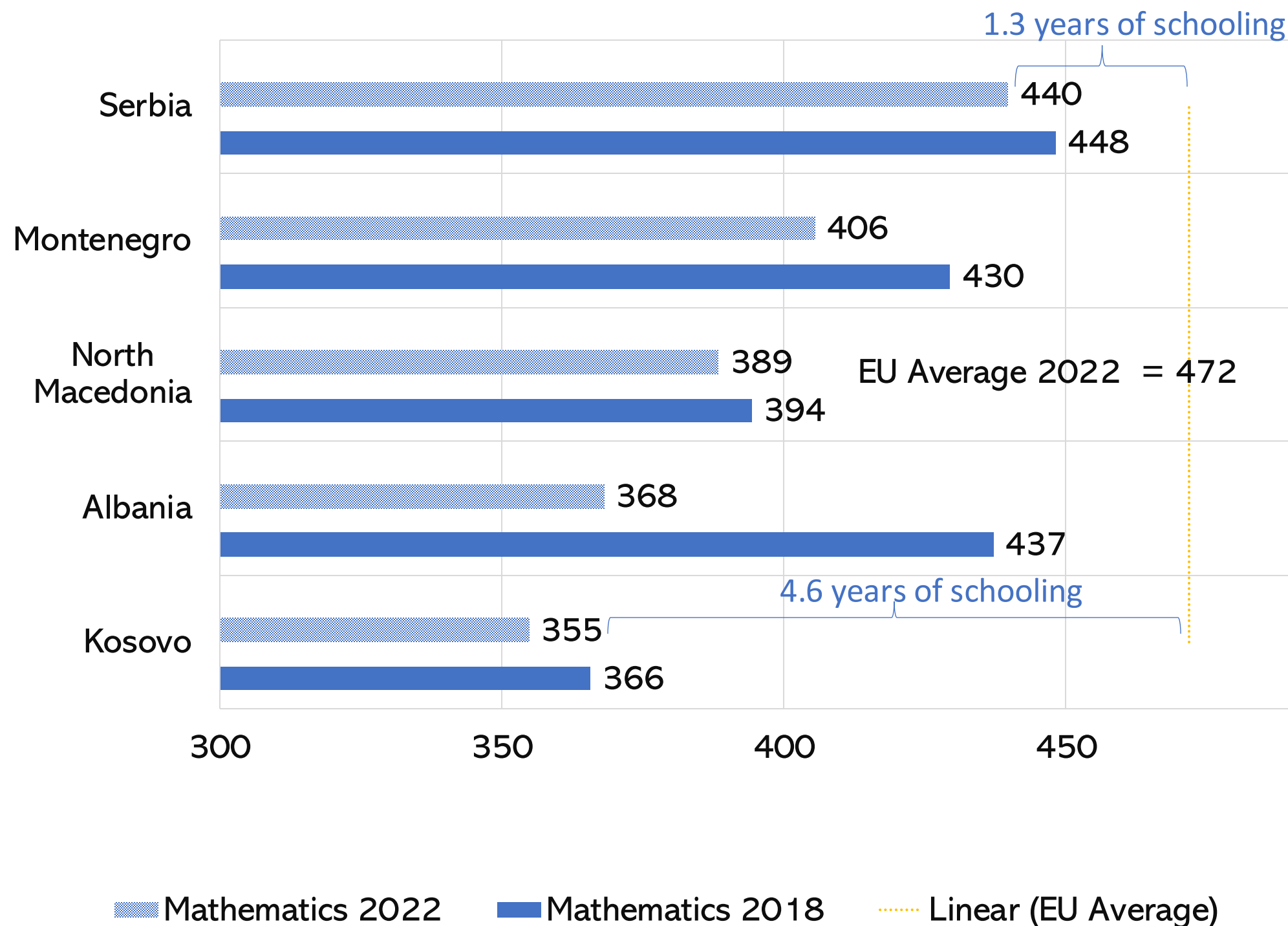
Several institutions have automated processes but operate in data silos due to partial system integration.



59% of institutions have more than 60% of their administrative and academic processes automated.

But **68%** of the institutions reported that their enterprise system are only somewhat or partially integrated.

BUT the most important education challenge in the WeBa is to ensure universal foundational skills (literacy, numeracy)



Key takeaways

01

Uneven impact: The green transition affects countries, sectors, and demographic groups differently, with Western Balkan countries facing particularly high risks.

02

Education systems must be modernized to integrate foundational, green skills, digital literacy, and climate awareness from early education through adult learning along with regional collaboration.

03

Skills gaps between vulnerable and resilient occupations require targeted interventions. Reskilling and upskilling opportunities are key.

04

Inclusive transition policies must address the specific needs of vulnerable groups including women, older workers, and those in carbon-intensive industries.

Annex

Strategic Advice and Analytics on education and skills within the green transition in Serbia

Systemic challenges, policy gaps, and strategic recommendations to align human capital development with climate resilience and sustainability goals.

Key findings

- The demand for green skills is projected to outpace supply by 66% by 2030. Serbia lacks a strategic focus on green jobs, and its labor market does not reflect the urgency of climate action.
- Technical and vocational education (TVET), higher education and adult learning programs are underprepared to support the green transition.
- Foundational skills, environmental awareness, and digital competencies are insufficiently developed across all levels of education. Investment needs for green education reform are estimated between EUR 9.1 and 27.2 million.

Recommendations:

- Promote partnerships between universities and industry to foster innovation and advanced green skills;
- Improve labor market monitoring and forecasting to anticipate green skills demand.
- Introduce reskilling and lifelong learning programs for vulnerable communities and sectors.

Advantages of a Regional Skills Approach

Higher order skills

Address job market demand for advanced skills in STEM, digital technologies, health sciences, agriculture, and renewable energy sectors

Talent attraction

Enhance internationalization capacity, improve university rankings, attract international students, and retain regional talent.

Research networks and Centers of excellence

Leverage critical mass of researchers, share specialized resources and equipment, and create regional networks and facilitate student-faculty mobility across borders

Meet EU standards

Fulfill Bologna process requirements through regional collaboration, mutual recognition of credits, and alignment with European standards



Enhancing Human Capital to Overcome the Middle-Income Trap in the Western Balkans

Investing in Education

Improving education quality and access is crucial for developing human capital and driving economic growth in the region.

Workforce Skills Development

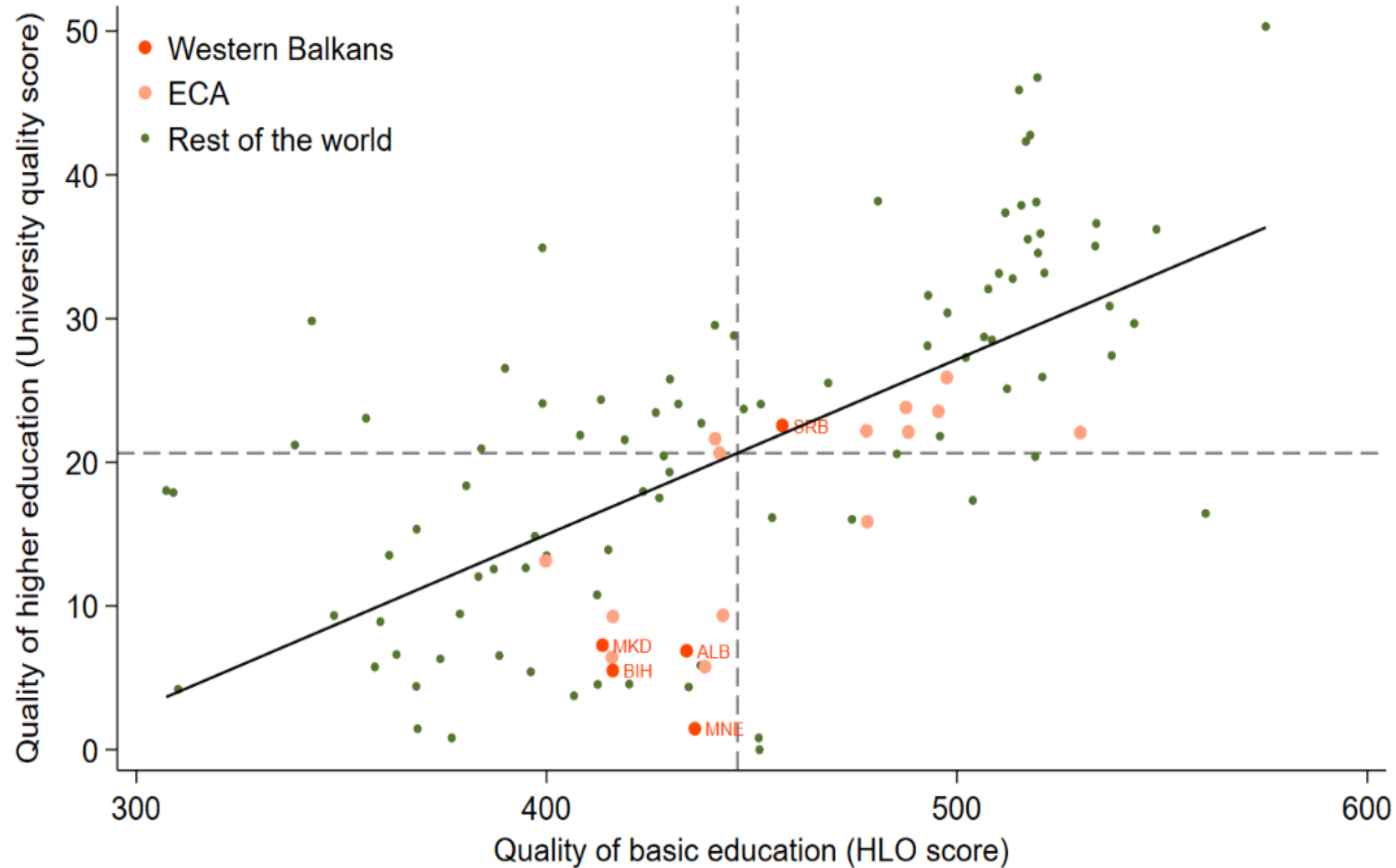
Training and reskilling the workforce supports innovation and helps overcome the middle-income trap.

Supporting Innovation and Entrepreneurship

Encouraging creativity and business startups fosters economic diversification and resilience in the Western Balkans.



Higher education is underperforming



Recommendations for improving human capital productivity

- **Education Basics**
 - Low-cost interventions: info campaigns, teaching by learning level, structured lesson plans, teacher training.
- **Health & Prevention**
 - Strengthen primary care, early risk detection, healthy behavior policies (taxes, bans).
- **Higher Education Reform**
 - Align curricula and quality assurance with EU standards.
- **Re-skilling for Future Work**
 - Focus on STEM, innovation, adaptability for green transition and aging workforce.
- **Regional Collaboration**
 - Joint research, centers of excellence, and shared quality standards.

Skill Gap Severity & Retraining Costs

0.80	€300M	€280M	€250M
Kosovo's Skill Gap	Bosnia & Herzegovina	Kosovo	Albania
Steepest skill gap, indicating greater need for retraining and foundational education	Highest estimated retraining costs	Second highest retraining costs	Substantial investment needed for workforce transition

Countries with higher GDP per capita tend to have lower average skill gaps to green jobs, highlighting economic development's role in workforce readiness.