



Federal Ministry
for Economic Cooperation
and Development



Opening Session

Keynote Presentation

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Division, UNESCO



Achieving just and sustainable transitions: UNESCO's perspective on transformation in TVET to deliver green skills

Presented by Mr. Borhene Chakroun, Director, Policy and Lifelong Learning Systems, UNESCO



- ① Global trends and major transitions that affect the supply of and demand for green skills
- ② Current bottlenecks and gaps slowing down the green transition
- ③ The way forward and UNESCO's role

Global trends affecting education, and education shaping the world of work

Economic uncertainty	Technological change	Labour Market dynamics	Demographic transition	Societal and political issues	Sustainable Development
⑩ 2020 recession and long-term impact of COVID ⑩ Slow and uneven growth	⑩ Digitization, Automation, 5G, AI, leading to Industry 4.0	⑩ Labour shortages ⑩ Informal economy ⑩ Jobs loss and creation	⑩ Youth bulges vs ageing populations and impacts on education and training systems	⑩ Right to lifelong learning, intergenerational solidarity, migrations	⑩ Climate change, biodiversity, green transition

Education can not only respond to the changes in the world of work, it can also shape it.

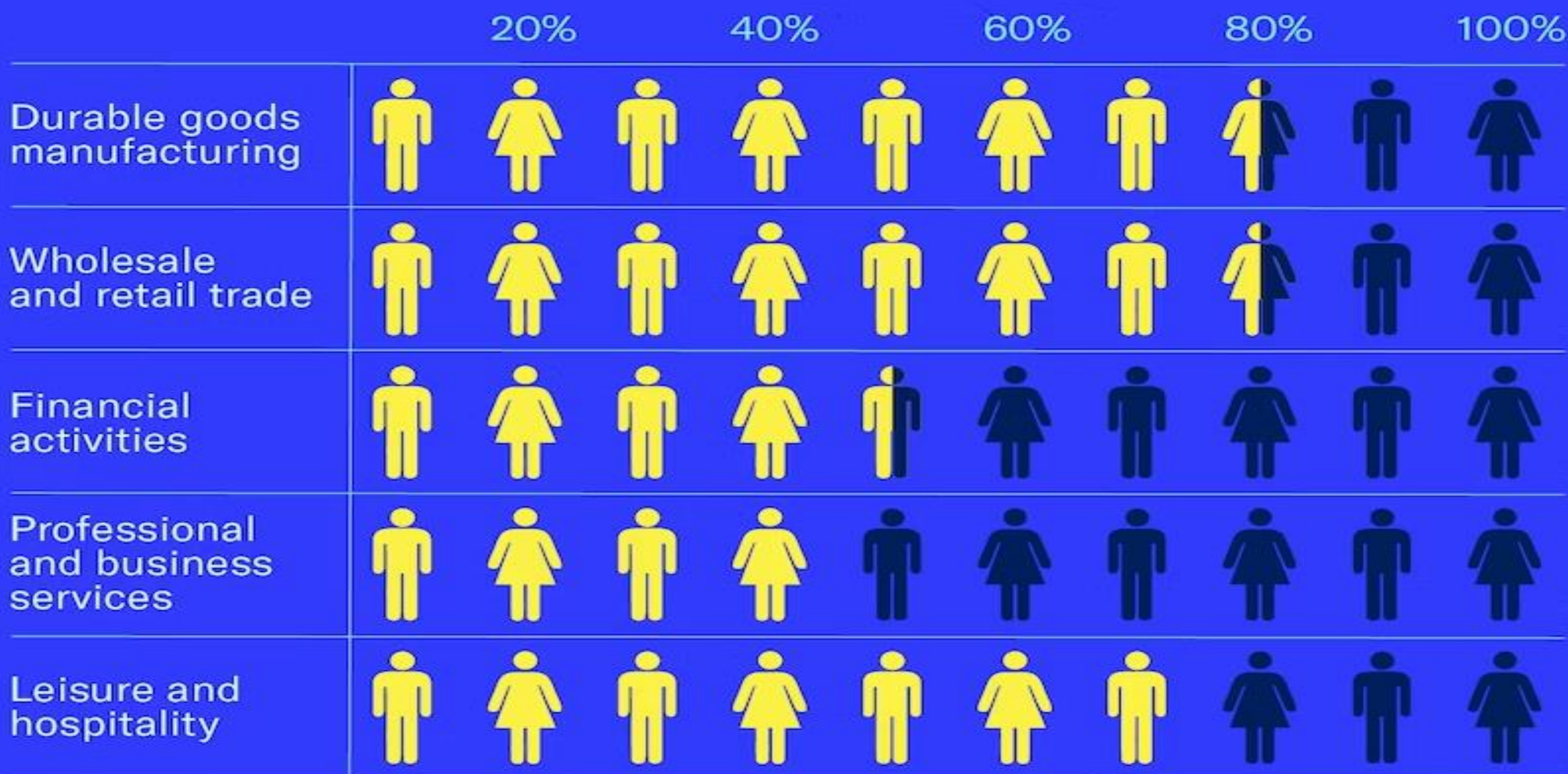
Labor force shortage by industry

July 2023



● Filled job openings ● Unfilled job openings

Source: U.S. Chamber of Commerce Analysis, BLS Data

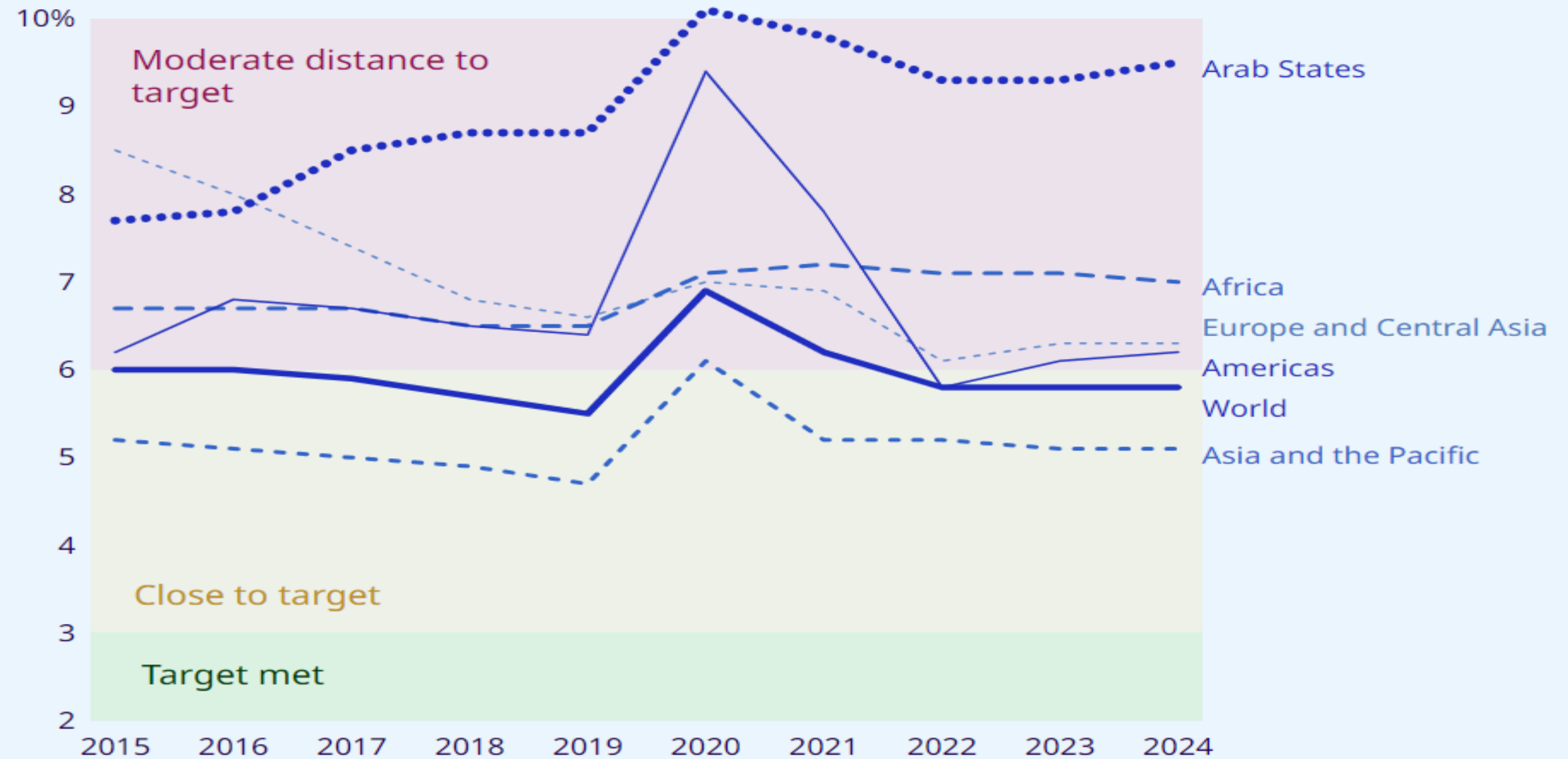


Uneven Situation of Labour Markets

The target unemployment rate of 3 per cent is based on the UNSD threshold described in the SDG progress chart technical note. The color coding indicates the distance to this target.

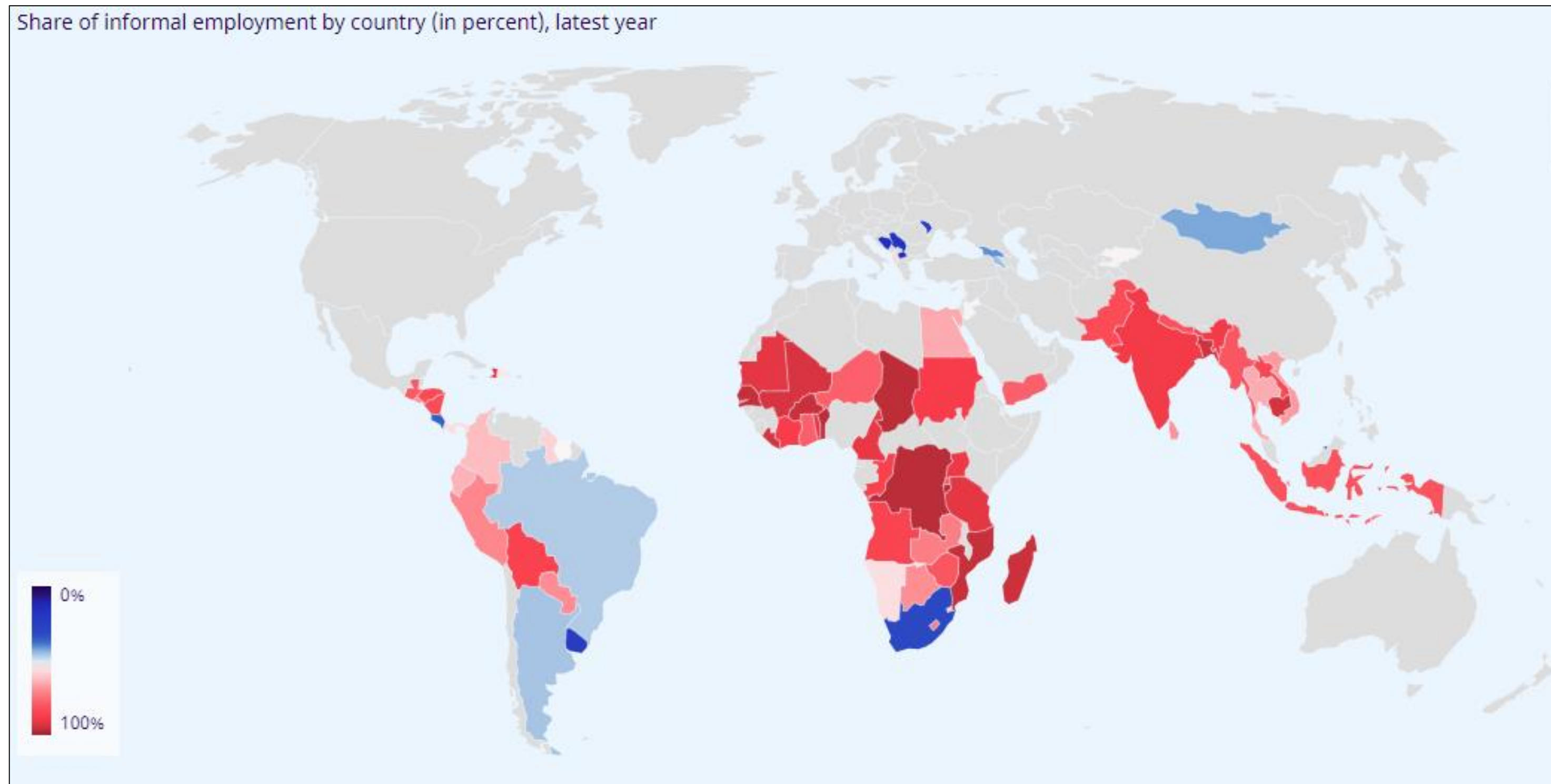
Source: ILO Modelled Estimates database, ILOSTAT

► Unemployment rate



Informal economies are not shrinking

Informal employment rates in developing countries, latest available year



Source: ILOStat

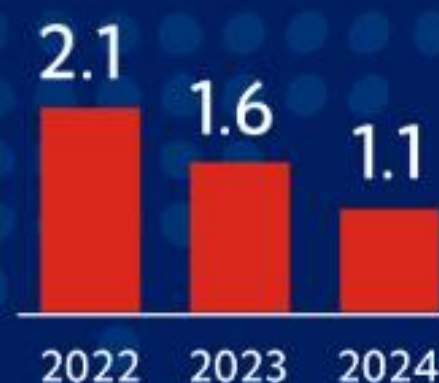
GROWTH PROJECTIONS BY REGION

GLOBAL GROWTH



(Real GDP growth, percent)

UNITED STATES



EURO AREA



MIDDLE EAST & CENTRAL ASIA



EMERGING & DEVELOPING ASIA



LATIN AMERICA & THE CARIBBEAN



SUB-SAHARAN AFRICA



Source

IMF, World Economic Outlook, April 2023.

Note

Order of bars for each group indicates (left to right): 2022, 2023 projections, and 2024 projections.

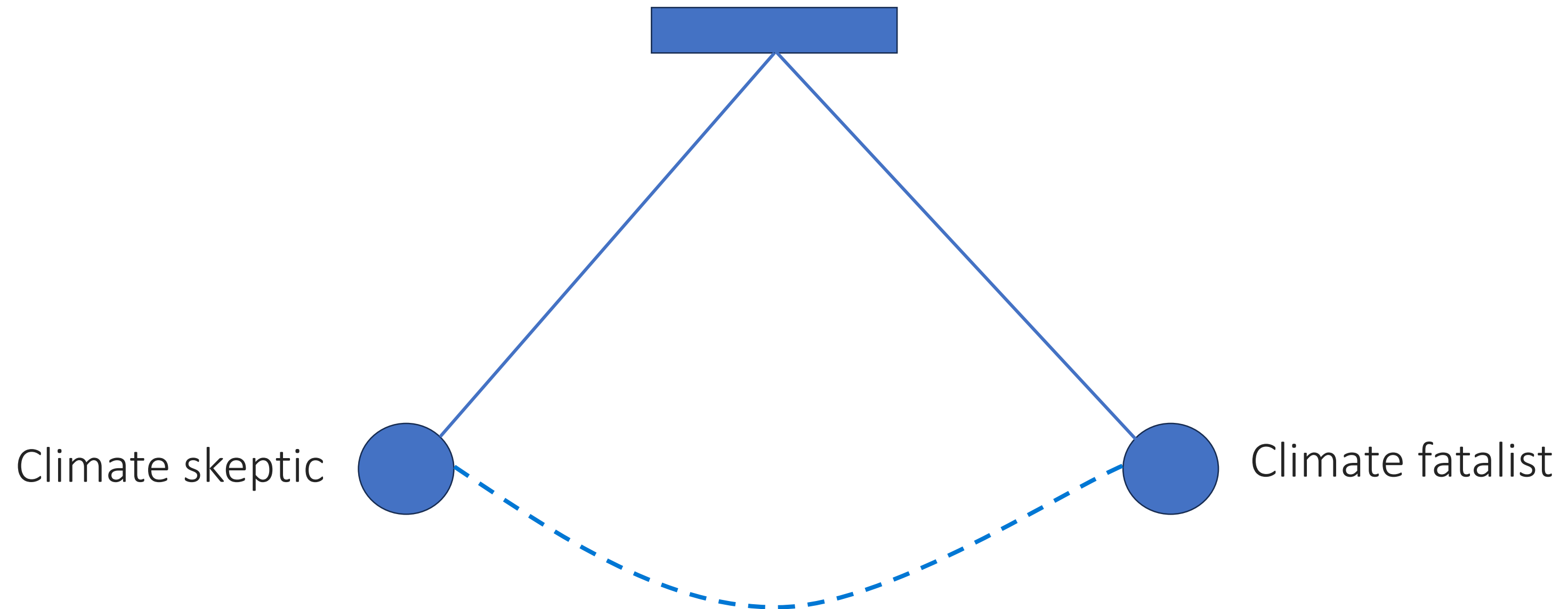
- ① No size fits all
- ② Demography matters
- ③ Social Justice as a common agenda

Major transitions that affect the supply of and demand for green skills

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Spectrum of climate perspectives

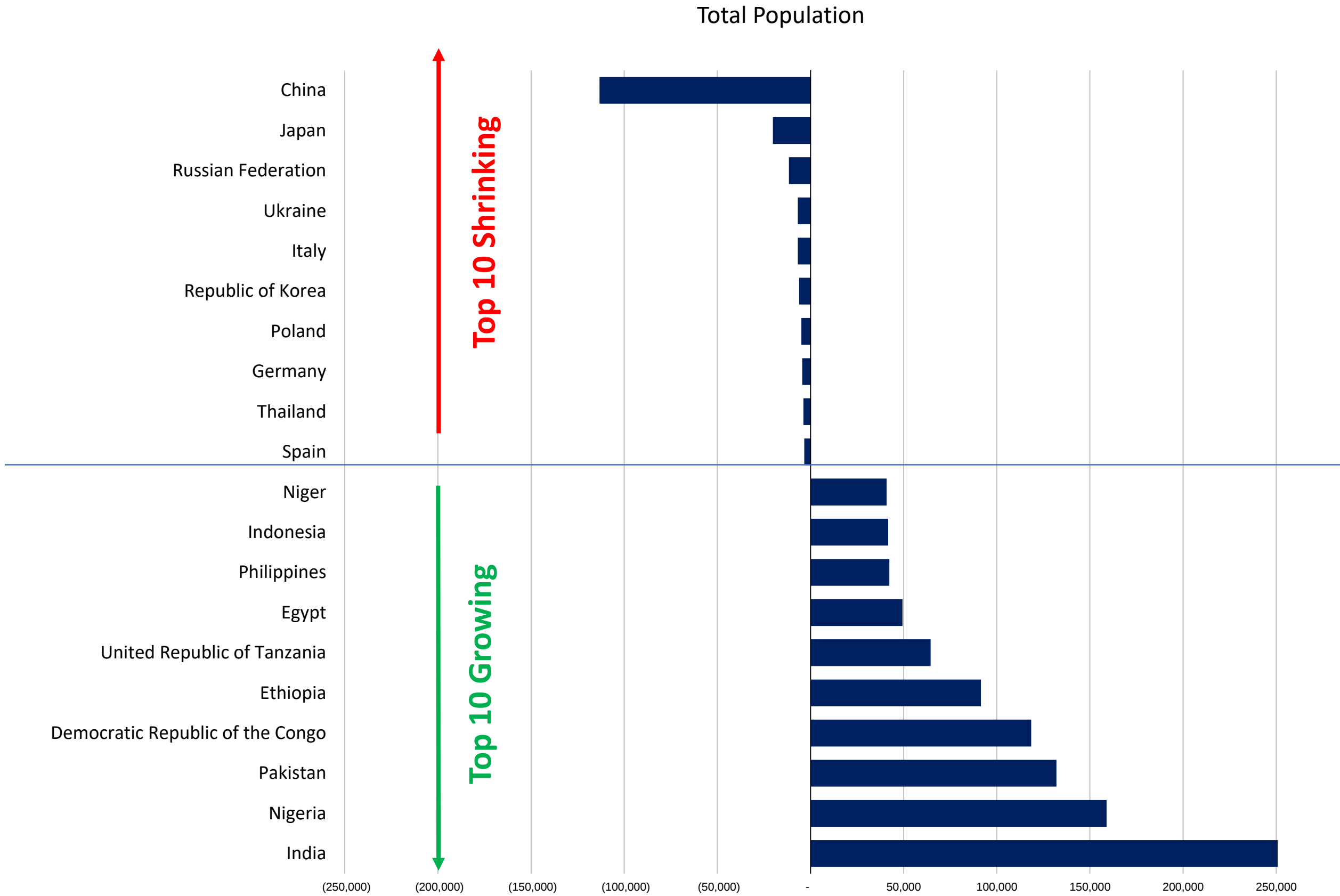
Global dialogues around climate change have swung significantly over the last few years across this pendulum.



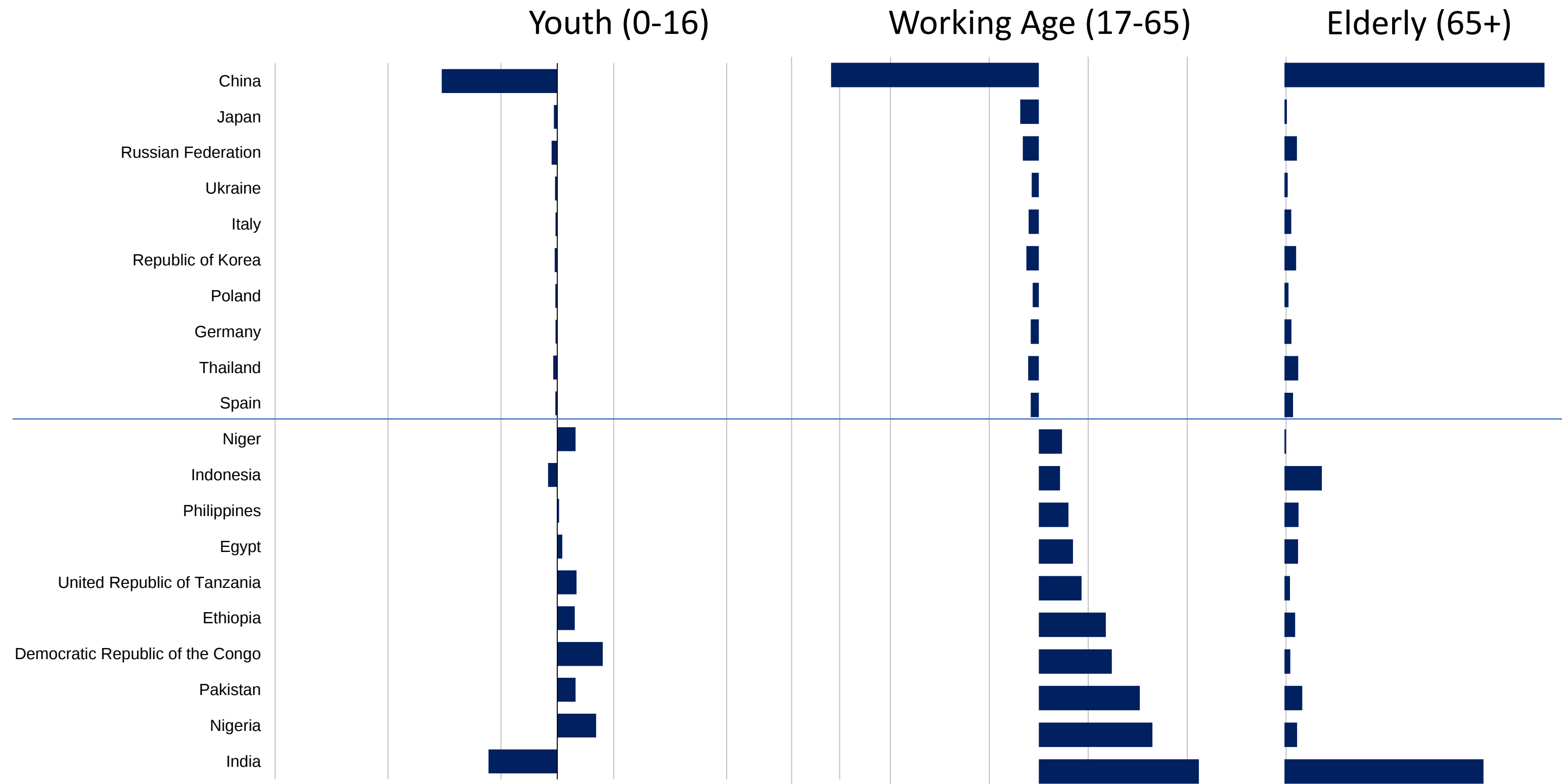
Greening within paradigms: Sustainable Development Goals and SDG4; Human Rights; Leave no-one behind



Transition 1: Demography (1/2)



Transition 1: Many low-income countries today will have huge prime-age labor forces for the first time (2/2)



Transition 2: Technology and labour markets

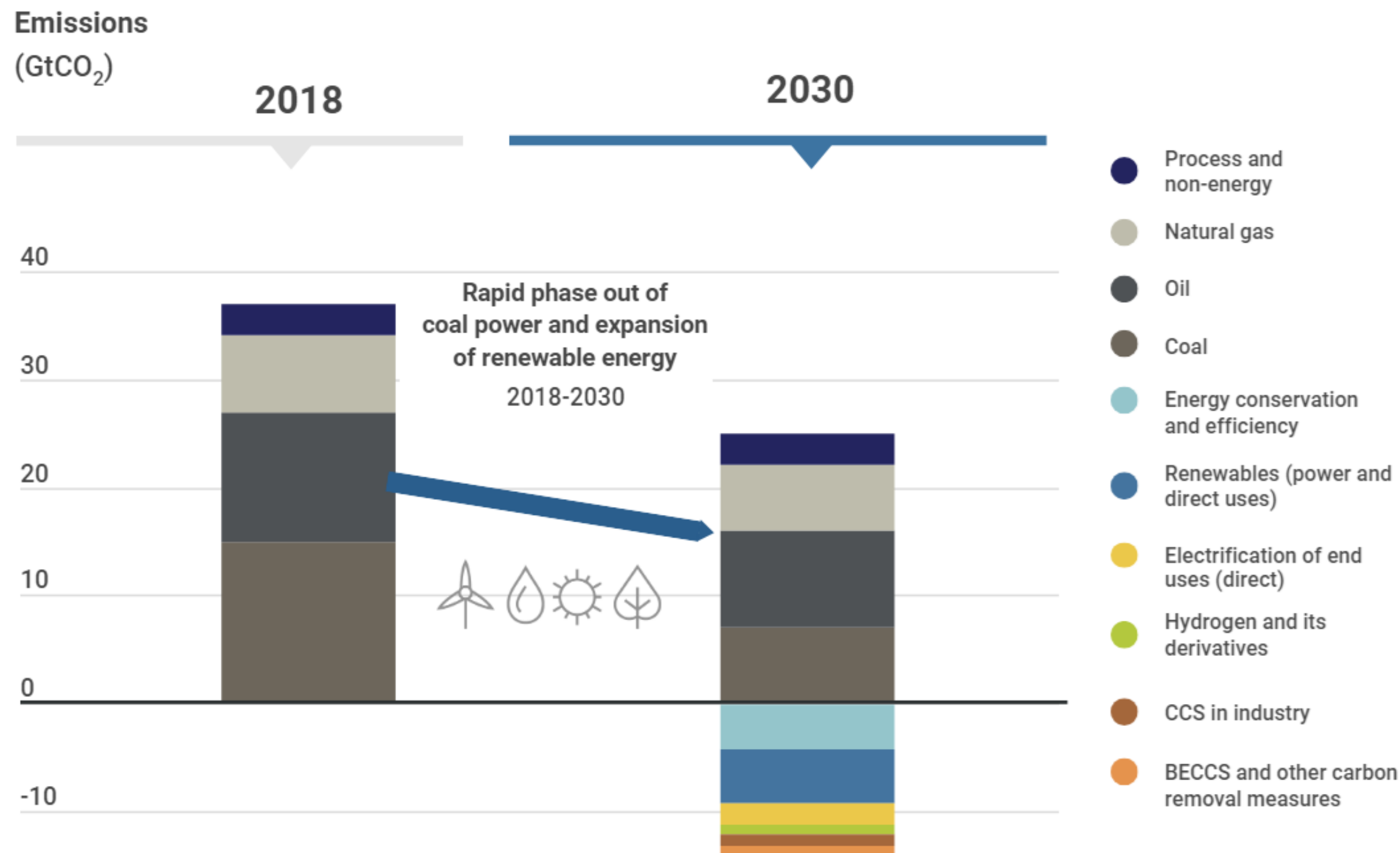


- 32% of young women and 15% of young men 15-24 years worldwide were NEET (Nov. 2022)
- In spite of the post-pandemic recovery, 70.1 million youth 15-24 years (14.1 % of the age group) remained unemployed in Nov. 2022
- 58% of global employment is in the informal sector
- Technological change is challenging formal employment and the associated worker benefits (e.g., approximately 43 million are engaged in the gig economy)
- AI, automation, and other advanced technologies including clean technology, require new skills to succeed in the labour market.

Sources:
UNESCO (2022); ILO/Caro et. al. (n.d.)

Transition 3: From fossil fuels to renewable energy

A rapid phase-out of fossil fuels combined with increased energy efficiency can reduce global CO₂ emissions by 12 gigatonnes by 2030, equal to one third of emissions in 2018.



Source: IRENA, 2023

Transition 4: Demand for green skills (1/3)

Growth in demand for green skills from 2022 to 2023 is outpacing the increase in supply.



Source: Global Green Skills Report ([LinkedIn Economic Graph](#), 2023)

Transition 4: Demand for green skills (2/3)

- A shift towards green jobs is underway, with LinkedIn jobs data showing that in 2015 the ratio of US oil/gas jobs to renewables/environment jobs was 5:1, but by 2020 this was 2:1.
- The share of green talent in the workforce has increased by **more than 38%** since 2015. This is one of the findings of the LinkedIn Global Green Skills Report 2022.
- The **number of jobs in renewables and the environment in the United States has increased by 237%** over the last five years. In contrast, oil and gas jobs have only grown by 19%.
- **Workers at all levels of education are growing their green skills.** But globally, the rate is faster among those with a bachelor's degree or higher. The share of green talent in this category grew at an average of 11% a year between 2015 and 2021, compared to 9% for other workers.
- LinkedIn warns that **demand for green talent is outstripping supply and calls for action on reskilling and upskilling.**
- While green job postings have grown 8% a year over the last five years, the share of green talent has only grown around 6% a year over the same period.
- The median LinkedIn hiring rate for workers with at least one green skill is 29% higher than the workforce average.

Source: Global Green Skills Report ([LinkedIn Economic Graph](#), 2023)

Transition 4: Demand for green skills (3/3)

Without targeted skills development efforts, the transition towards a circular economy could lead to the **loss of 71 million jobs worldwide** due to changing demand dynamics.

Investment in skilling, upskilling and reskilling could reverse this prospect: the **energy sector alone could produce opportunities for 18 million jobs**.

Key considerations:

- More than **1.47 billion jobs globally depend on a stable climate**.
- Progress in innovation may lead to further job creation with new jobs yet to be invented.
- **Efforts must be context-specific**: some sectors (and geographies) will be hit harder than others.
- **Companies will need to offer socially and environmentally sustainable solutions** to be ready for the future in the eyes of consumers and workers.

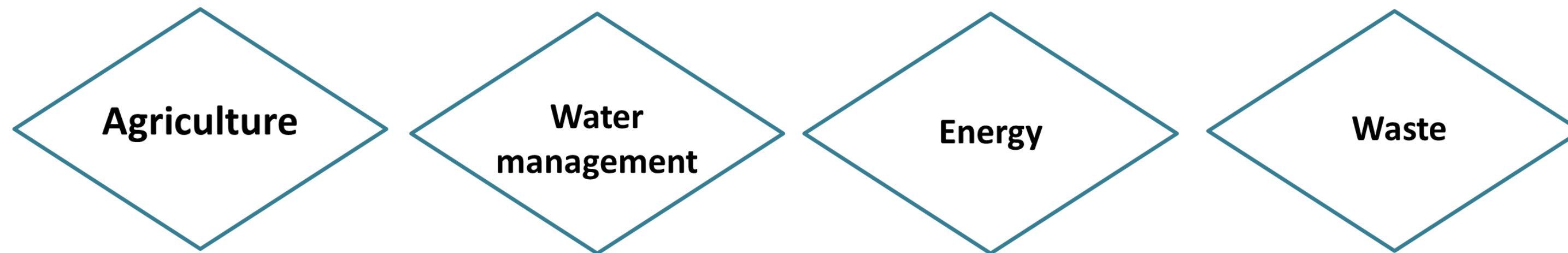
Source: The Adecco Group (2021), Skills for the Green Economy



Current
bottlenecks and
gaps that are
slowing down
the transition

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2.1 Knowledge gaps and skill bottlenecks



MITIGATION SKILL GAPS

- | | | | |
|--|---|---|---|
| <ul style="list-style-type: none">• Sustainable, low-carbon agricultural practices• Irrigation management• Crop management for low greenhouse gas emissions• Fertilizer application | <ul style="list-style-type: none">• Efficient use of water• Wastewater treatment and discharge | <ul style="list-style-type: none">• Energy audits• Energy-efficient equipment installation and maintenance• Renewable energy-equipment installation and maintenance | <ul style="list-style-type: none">• Waste minimization• Waste reuse and recycling• Waste-to-energy techniques |
|--|---|---|---|

ADAPTATION SKILL GAPS

- | | | | |
|--|---|--|---|
| <ul style="list-style-type: none">• Rainwater harvesting• Flood meadows• Buffer strips• Crop management• Soil management to prevent soil erosion• Cultivation of drought- resistant seeds• Pest control• Use of brackish water, line canals, drip irrigation to improve water use and avoid erosion | <ul style="list-style-type: none">• Pump and pumping equipment manufacture• Development and manufacture of water filtration and reuse technologies• Supporting efficient water management actions in urban areas• Sewer water system construction and rehabilitation• Irrigation engineering• Sustainable, climate-proof water use management• Rainwater management• Reverse osmosis technologies. | <ul style="list-style-type: none">• Climate-resilient energy equipment installation and maintenance• Adaptive hydropower plant design and maintenance• Designing small-scale energy technologies• Design and maintenance of waste to energy technologies• Energy-efficient technologies. | <ul style="list-style-type: none">• Waste entrepreneurship• Waste-to-energy design and maintenance |
|--|---|--|---|

Source: UNESCO-UNEVOC (2021), [Skills development and climate change action plans](#)

2.2 Education and training gaps

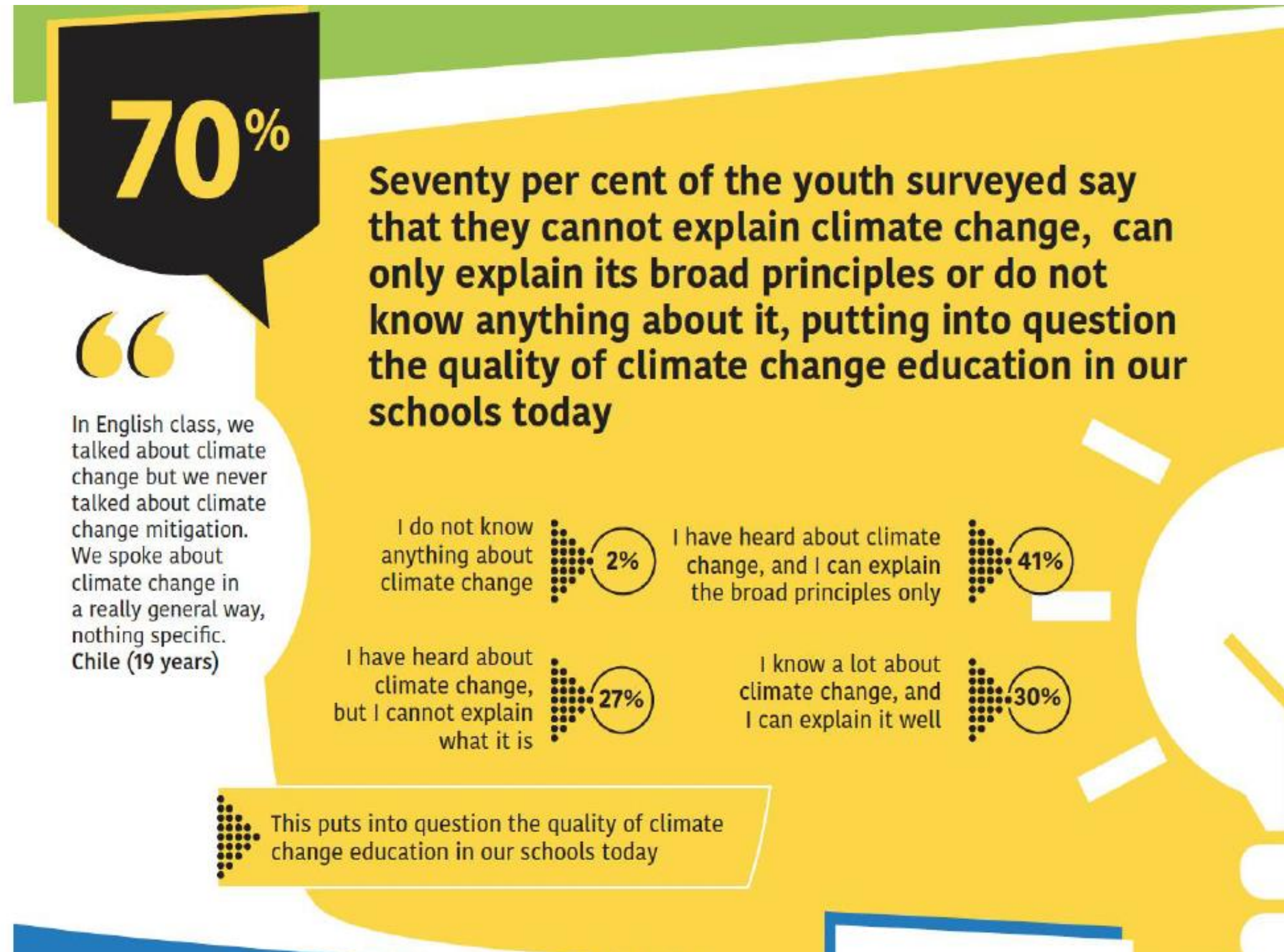


57 climate plans and communication documents reviewed by UNESCO-UNEVOC showed notable signs of progress in the areas of awareness-raising, education and skill development, and climate adaptation actions.

Other critical aspects such as skills anticipation, identification of new green skills and competency, teacher education and training of teachers and partnerships are not systematically infused in the planning and implementation of skill provisions.

Source: UNESCO-UNEVOC (2021), [Skills development and climate change action plans](#)

2.3 Education and training gaps



Youth demands

The quality of climate change education does not meet the needs and expectations of young people.

Source: UNESCO, 2023, [Youth demands for quality climate change education](#)

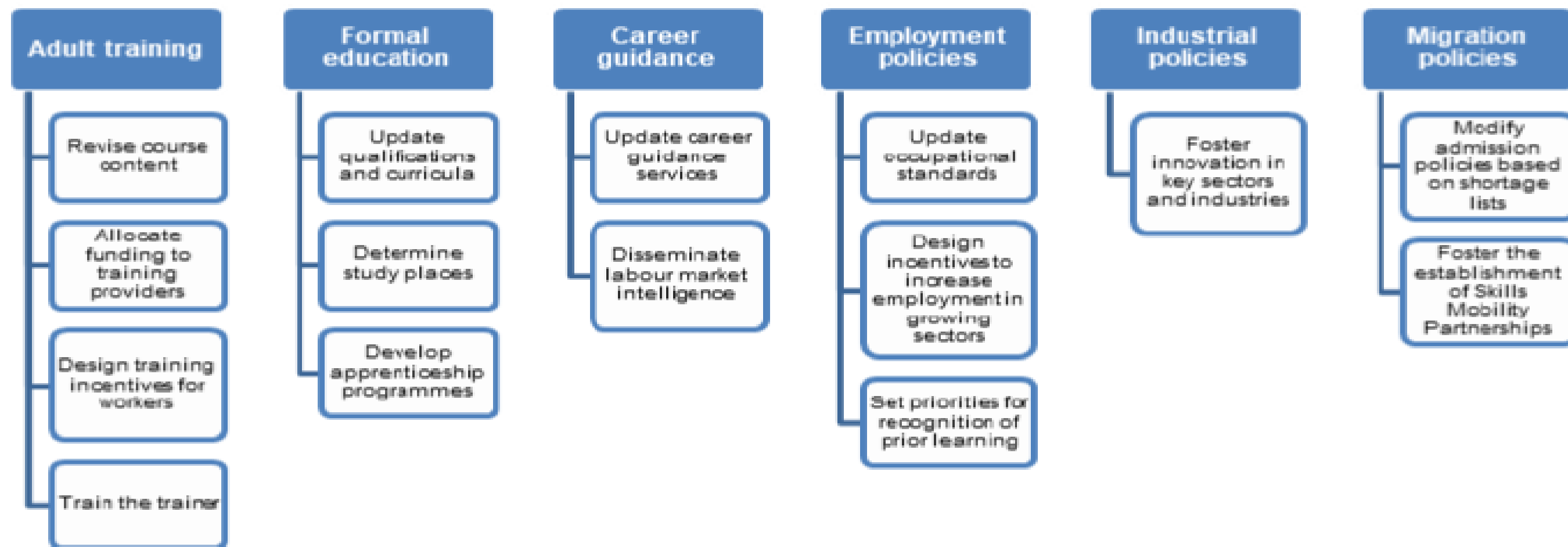
2.4 Evidence-based policymaking

Even if there is available evidence on skill shortages linked to the greening of the economy, it is **often unclear whether and how this information is used in policymaking**.

The use of data to support decision-making processes with respect to the green transition is **very limited**, often because:

- Green data are a **relatively new source of information**
- Green transition is **cross-disciplinary and requires collaboration between many stakeholders**, which can slow down the negotiations on how to use the final outputs

The OECD identifies 6 policy areas where skills assessment and anticipation (SAA) for the green transition can be used:



Source: OECD (2023), Assessing and Anticipating Skills for the Green Transition

Skills and capacities for future of work

How and why is world of work changing?

Artificial Intelligence &
digital transition

Climate change &
green transition

Industry 5.0 focus on human,
environmental & social impact

Globalization &
migration

Increasing life expectancy,
declining fertility

G20 trends in efforts to build capacities and lifelong learning in the context of the future of work

AI & Education



Academies of Future Technologies cover 10+ cutting-edge tech fields: AI, aerospace, intelligent manufacturing, future energy, quantum tech, big data, deep space, deep sea, deep blue, and deep earth

Post-Secondary



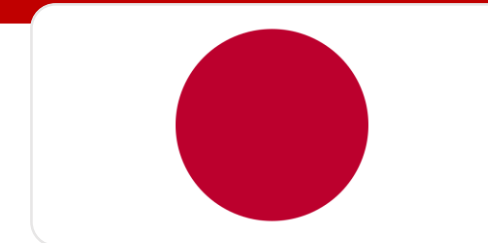
Personal Training Account (CPF): individuals in the labour market accumulate a personal training fund used to pay for training activities

TVET



Centres of Vocational Excellence: bottom-up creation of skills ecosystems for innovation, regional development, and social inclusion to rapidly adapt skills provision

Adult Education



Brush UP: programme offers certification of practical/specialized skills training conducted by HEIs that meet the needs of working adults and industry

Governance & Skills
Recognition



Lifelong Learning Promotion Plan: national plan for lifelong education, local governments make action plans for promoting lifelong learning, and various institutes and agencies support



The way forward and UNESCO's role

- Inter-Agency cooperation
- UNESCO's Strategy for TVET 2022-2029
- UNESCO's Global Education Partnership
- UNESCO's Global Skills Academy
- UNESCO-UNEVOC's new flagship programmes and UNEVOC Network initiatives

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UNEVOC

BMZ - UNESCO-UNEVOC Dialogue Forum of Green Skills for a Just Transition 14 September 2023

Education
2030

Implications for Education: A lifelong Learning Perspective of Greening Skills

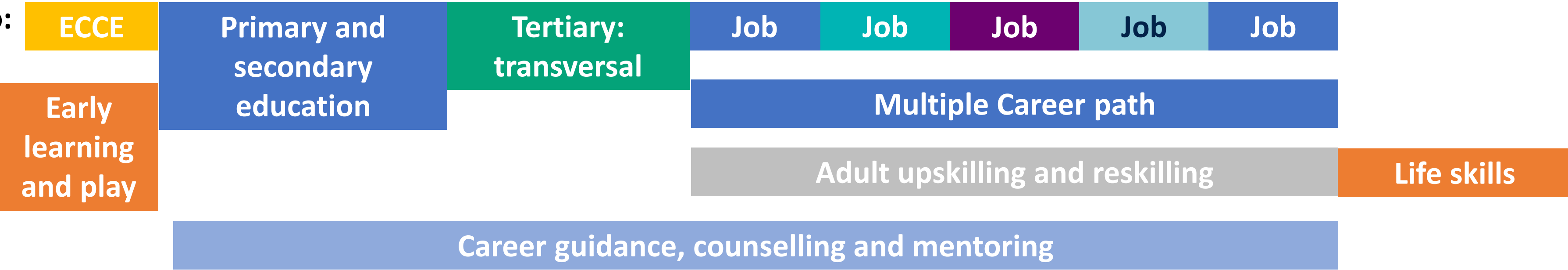
From:



Linear Path



To:



Life-Long & life-wide Path

Vision Statement of the Secretary-General on Transforming Education



Transforming Education: An urgent political imperative for our collective future

First and foremost, this calls for education systems to embrace the concept of life-long learning, with more flexible pathways and financial policy incentives to allow people to re-engage with education systems several times throughout their lives. Different avenues should be made available including non-formal routes, catch-up and bridging programs, accelerated learning, and the use of digital platforms.

Reinforce better green skills outcome in TVET strategy implementation



ANALYTICAL AND NORMATIVE FRAMEWORKS

- Development of Green Skills Taxonomy
- Policy advice to integrate global citizenship education and Education for Sustainable Development into TVET policies and programmes

CAPACITY DEVELOPMENT AND TECHNICAL SUPPORT TO MEMBER STATES

- Support countries in greening TVET systems (curricula, credentials, campuses and teacher training)
- Design of new forms of certification, qualifications and competencies for learners
- Capacity development for decision makers, TVET leaders and managers, TVET teachers and trainers
- Technical assistance to MS to perform assessment of skills demand (skills intelligence, job market analysis)

ADVOCACY & PARTNERSHIP

- Greening Education Partnership (ESD and TVET inter-sectorial approach)
- SDG and Greening TVET knowledge exchange platform
- Peer Learning Community engagement
- Inter-Agency group for TVET cooperation

Source: UNESCO Strategy for TVET (2022-2029) Available at <https://unesdoc.unesco.org/ark:/48223/pf0000383360>

UNESCO Greening Education Partnership

- Launched by UNESCO at UN Transforming Education Summit, New York, September 2022
- Attracted 70 Member States, 700+ organizations (as of June 2023)

Goal of the initiative:

- Strong, coordinated and comprehensive global collaboration among stakeholders on climate change education

Key results:

- Co-creation of a Multi-Partner Trust Fund
- Development of a global green school quality standard
- Development of green curriculum guidance
- Development of guidelines on teacher preparedness



Source: UNESCO

Agency cooperation: priorities and potential synergies

Observed gaps in the current siloed approach in TVET system support

- **There is too much emphasis on conducting research, instead of development and delivery** of skills supply and capacity building
 - ❖ Consequence: reduced entry into green economy jobs due to limited understanding of opportunities for employment and career progression in the green transition
- Interventions and research vary from being **very specific and context-focused** (e.g. focus on teachers and trainers or sectors) **to more generic and less context-specific** (e.g. global and regional)
 - ❖ Consequence: perpetuates working in silos and neglect of the overall system; limited resilience of systems to shocks.
- **Under-investment and limited understanding of green finance**
 - ❖ Consequence: reduced adoption and support of green skills.

*There could be many advantages in acknowledging, integrating and aligning the different organisations' interventions and research. This can ensure that additional and new interventions and research **build on each other's complementary strengths, link to ongoing initiatives and fill the gaps in capacity support for the greening of TVET.***

Note: Based on UNESCO's grey literature review of the different actions in greening TVET for a just transition by different organizations working in TVET and green transition (unpublished).

UNEVOC Network: a global platform for cooperation, knowledge sharing and capacity building



Support for Greening TVET in the UNEVOC Network (2021-2023)



BRIDGING INNOVATION AND LEARNING IN TVET ([link](#))

New Qualifications and Competencies (NQC)s for the **dual transition**

- **Over 900 members** of the BILT community engaged in activities on NQC)s



2022 TVET LEADERSHIP PROGRAMME (*Rethinking TVET systems and programmes for the green transition*) [link](#)

- **140 TVET leaders and managers** from 61 countries trained in greening approaches



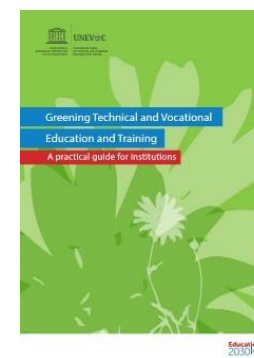
TVET RESILIENCE & POST-PANDEMIC RECOVERY

- **Over 200 TVET teachers** supported in greening curricula and training (TVET resilience project [link](#); ToTs on Circular Economy [link](#))



UNEVOC COACTION INITIATIVE

- **169 TVET staff** reached by Co-action Initiative training support



GREENING TVET INSTITUTIONS

- **Over 80 UNEVOC Centres** and other TVET institutions progressed in their actions to green TVET



KNOWLEDGE PLATFORM

- **Over 600 persons** reached by knowledge-sharing webinars ([link](#))



PROMISING & INNOVATIVE PRACTICES

- **15 practices** on Greening TVET disseminated

Source: UNESCO-UNEVOC

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