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Using real-time big data for TVET policies and strategies

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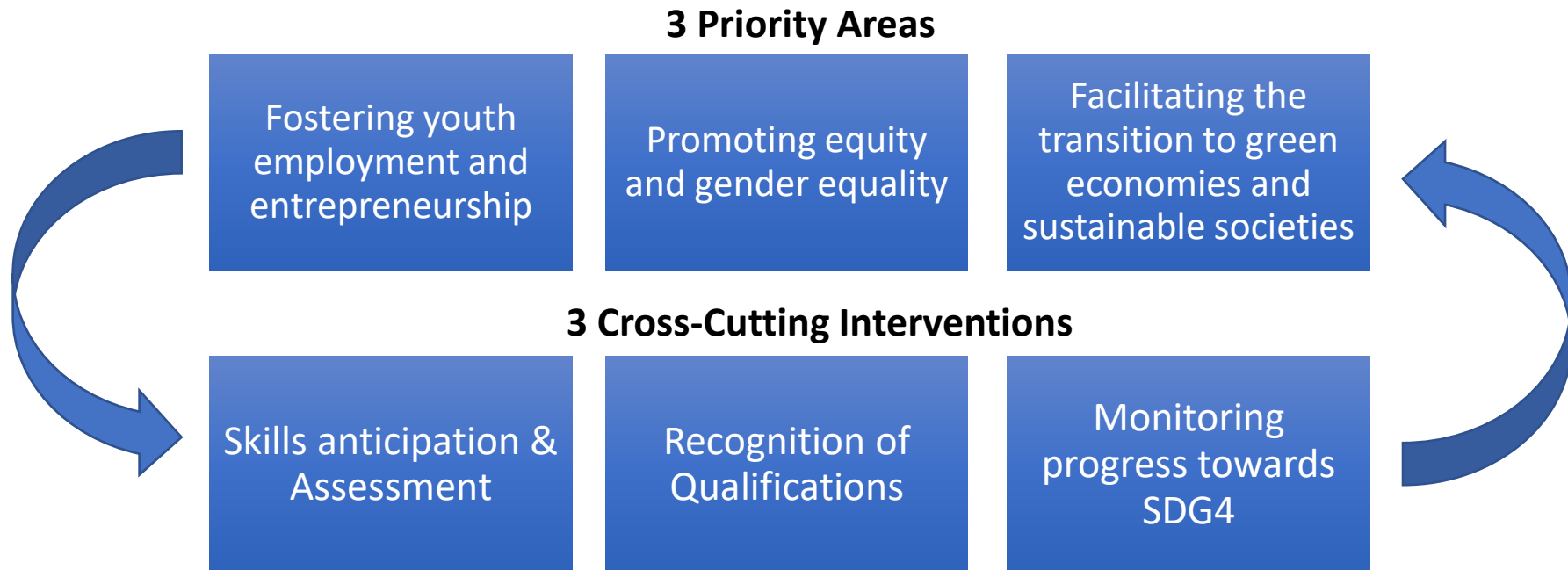
Programme Specialist

Section for Youth, Literacy and Skills Development

UNESCO



Background: UNESCO Strategy for TVET 2016-2021



Mid-term review (2019) & Final evaluation (Spring 2021) / Summative & Formative

- ❑ **Globally:** successful implementation of the Strategy
 - ❑ **UNESCO responded to changing demands:** Digitalization, Centres of Excellences & Innovation Hubs, (micro-)credentials, response to the COVID-19
- ❑ **Coordination improved:** TVET Community, UNEVOC Network, IAG-TVET
- ❑ **Efficiency:** Need for more standardized approaches, guidelines & tools

Evaluation results of the UNESCO Strategy for TVET 2016-2021

Quantitative Results: UNESCO reached its targets

50

countries
supported
worldwide

2,700

teachers
trained

5,000

TVET
stakeholders
formed

224

TVET
institutions
accompanied

\$72 M

mobilized for
TVET

Recommendations

- i. COVID-19 → UNESCO should response to **2 long-term trends: digitization and transition towards Sustainable Development** - Leveraging Global Education Coalition (GEC) and its Global Skills Academy (GSA)
- ii. Reinforce its partnerships with other TVET agencies and stakeholders (**IAG-TVET & UNEVOC Network**)
- iii. More attention to **lifelong Learning, credentials & quality of teaching workforce**

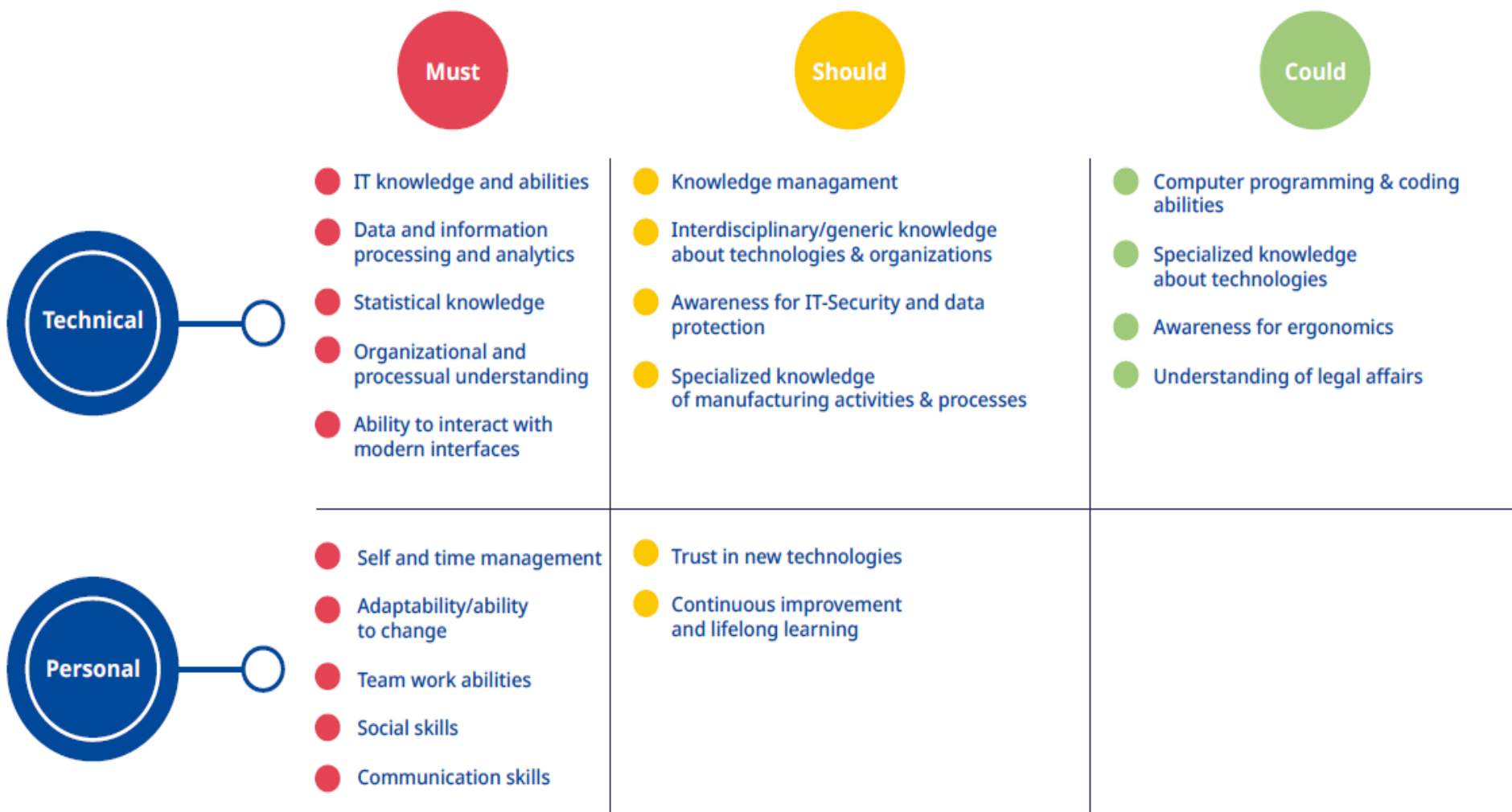


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**Education
2030**

Future qualifications and skills required from TVET



Source: ILO and UNESCO (2020). "The Digitization of TVET and Skills Systems"

Top 20 job roles in increasing and decreasing demand across industries (2020)

Increasing demand	Decreasing demand
<ol style="list-style-type: none">1. Data Analysts and Scientists2. AI and Machine Learning Specialists3. Big Data Specialists4. Digital Marketing and Strategy Specialists5. Process Automation Specialists6. Business Development Professionals7. Digital Transformation Specialists8. Information Security Analysts9. Software and Applications Developers10. Internet of Things Specialists	<ol style="list-style-type: none">1. Data Entry Clerks2. Administrative and Executive Secretaries3. Accounting, Bookkeeping and Payroll Clerks4. Accountants and Auditors5. Assembly and Factory Workers6. Business Services and Administration Managers7. Client Information and Customer Service Workers8. General and Operations Managers9. Mechanics and Machinery Repairers10. Material-Recording and Stock-Keeping Clerks

Sources: Future of Jobs Survey (2020), World Economic Forum



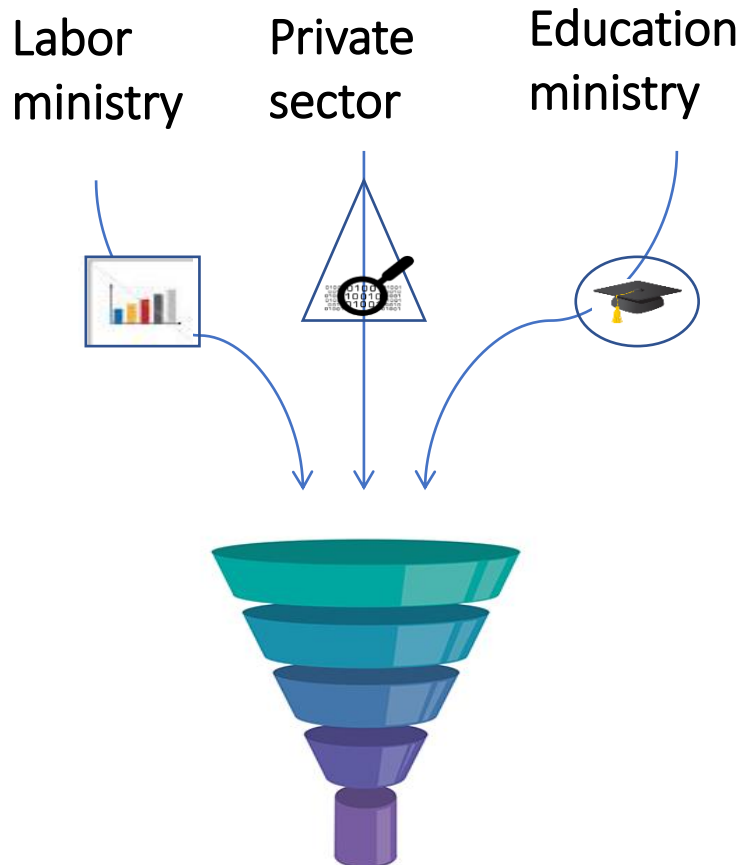
TVET/Labor market **Data challenges**

Data integration

Different providers/awarding bodies

Different data

Needs to be streamlined and fine-tuned for processing and analysis



Governance

No clear governance lines, that link and coordinate all the involved actors, target groups and processes.

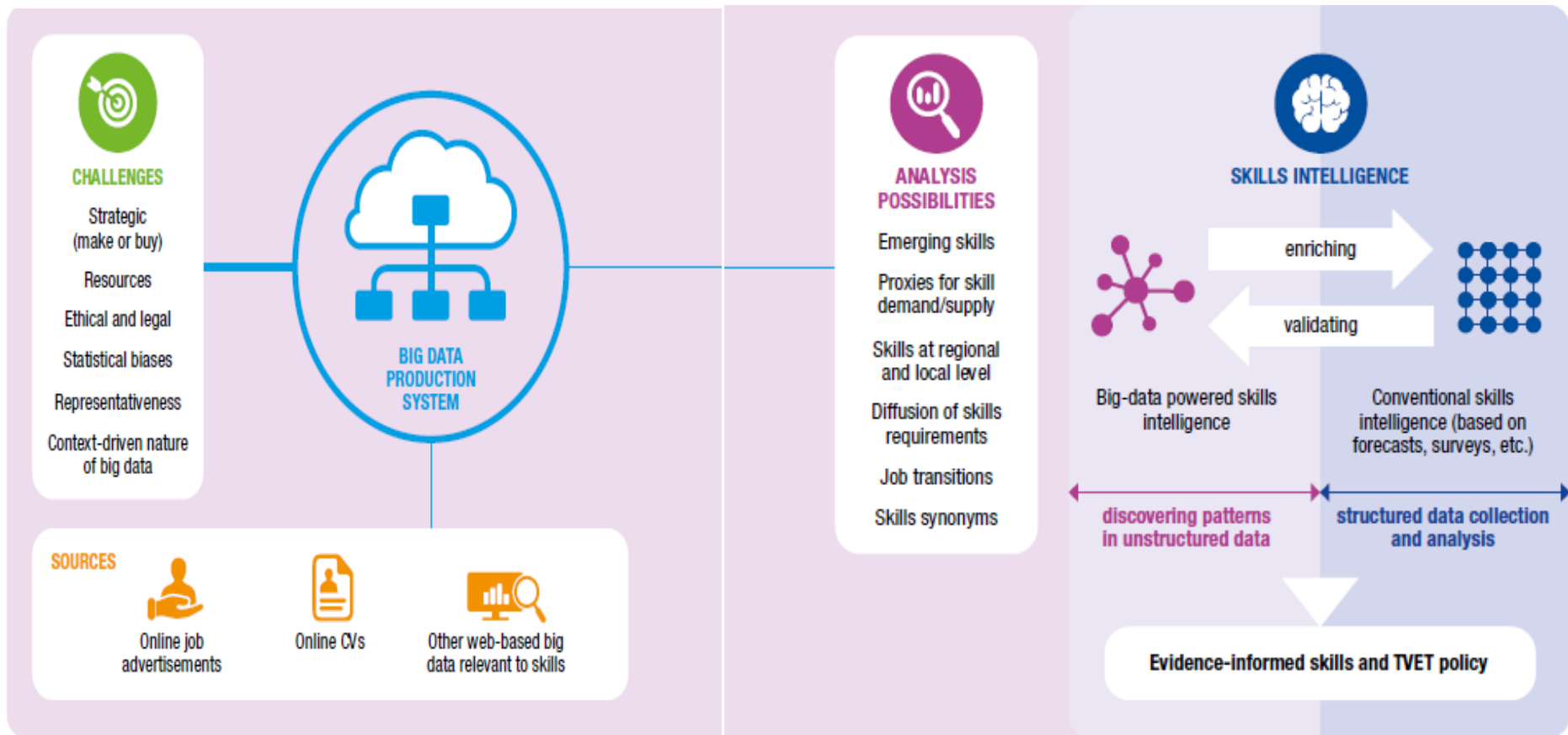
Data use

The results are not “translated” for and disseminated to target groups in a systematic way.

Data comparability

The results are not “translated” for and disseminated to target groups in a systematic way.

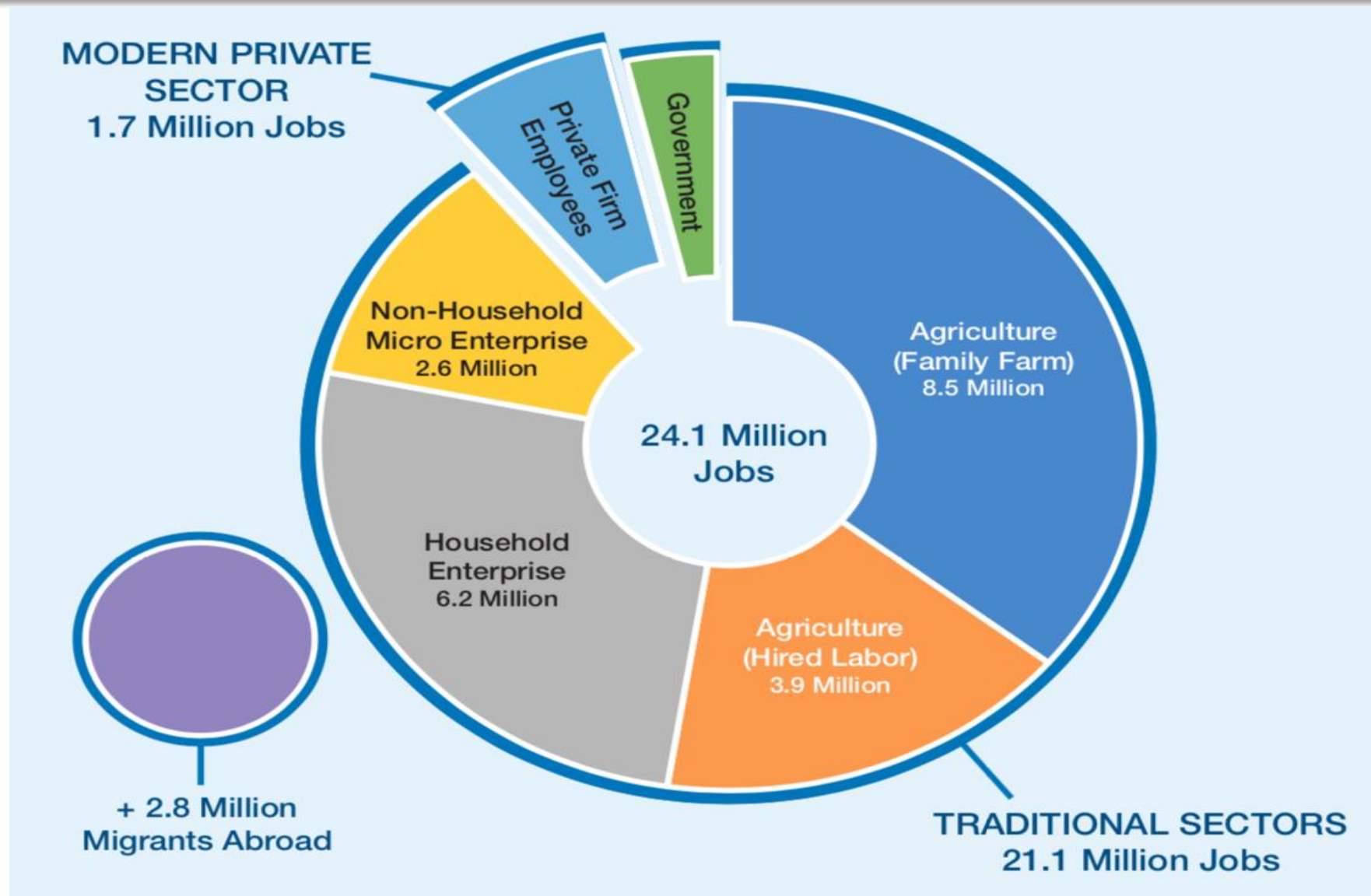
Skills anticipation: big data-powered & conventional skills intelligence



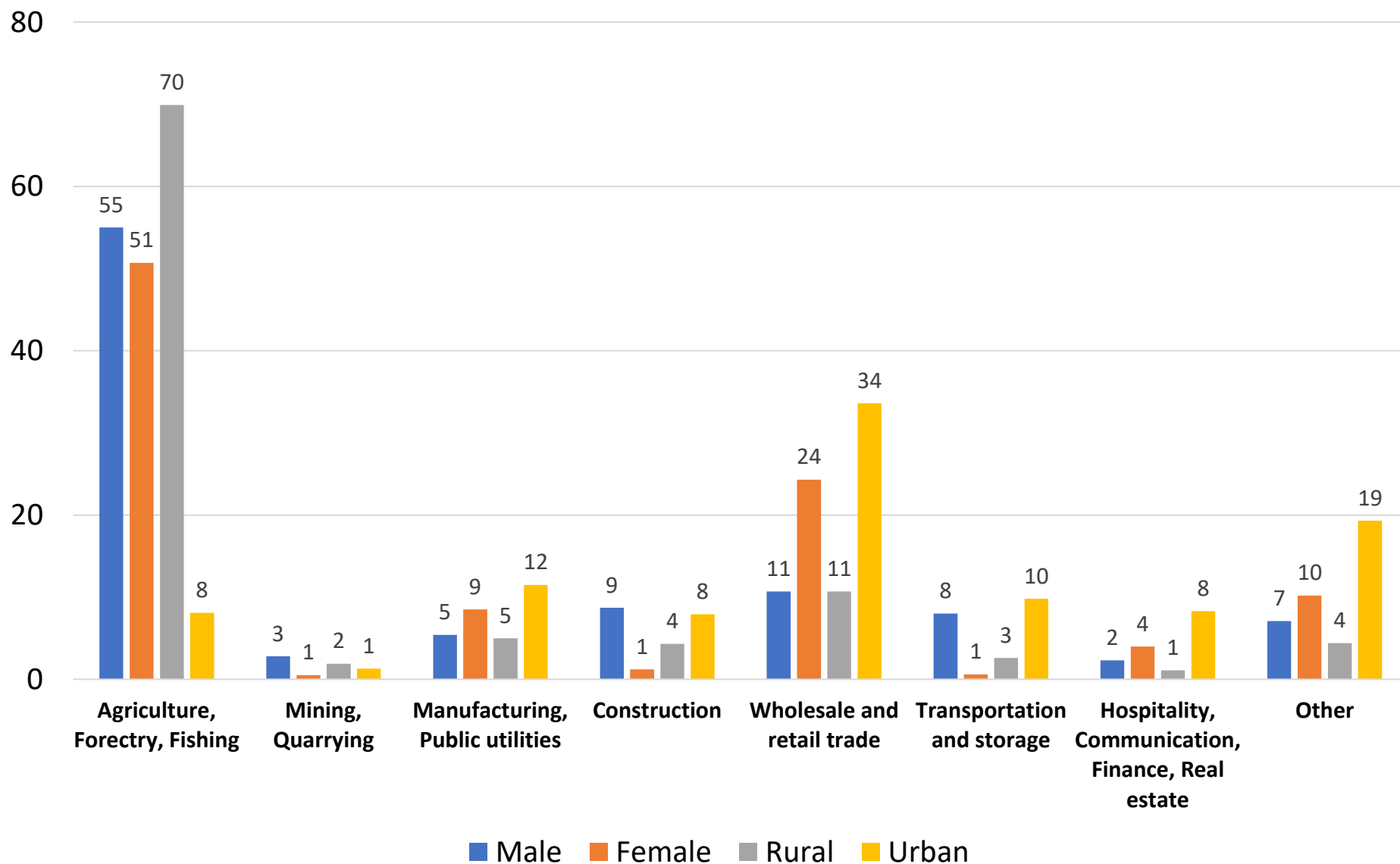
Source: Cedefop; European Commission; ETF; ILO; OECD; UNESCO (2021).

“Perspectives on policy and practice: tapping into the potential of big data for skills policy”.

Myanmar: Jobs picture (Labor force survey)



Myanmar: Employment distribution



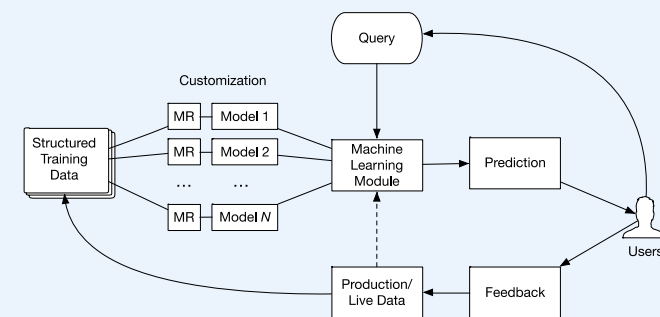
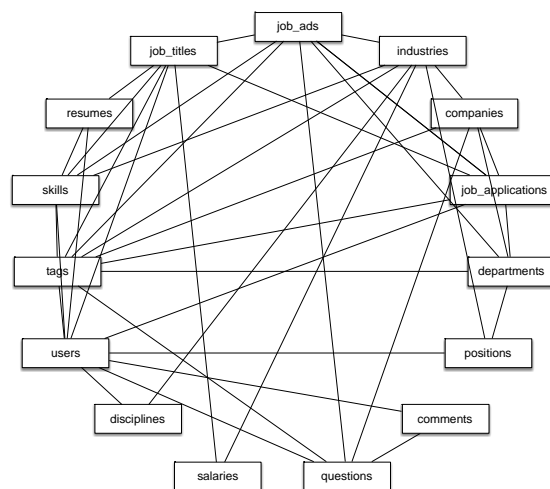
Investment in major infrastructure and industrial development

- 4 seaports
- 2 airports
- Upgraded railways
- New city development (Yangon and Mandalay)
- Integrated refinery and petrochemical complex
- New cement factories
- Industrial waste water projects
- 5 new power generation projects (solar, hydro and wind)

(Source: Directorate of Investment and Company Administration)

Approach: Big data analytics and artificial intelligence (AI)

JobNet.com.mm
Great Careers. Start Here!



Data Mining

Indexing data from multiple sources

Statistical Analysis

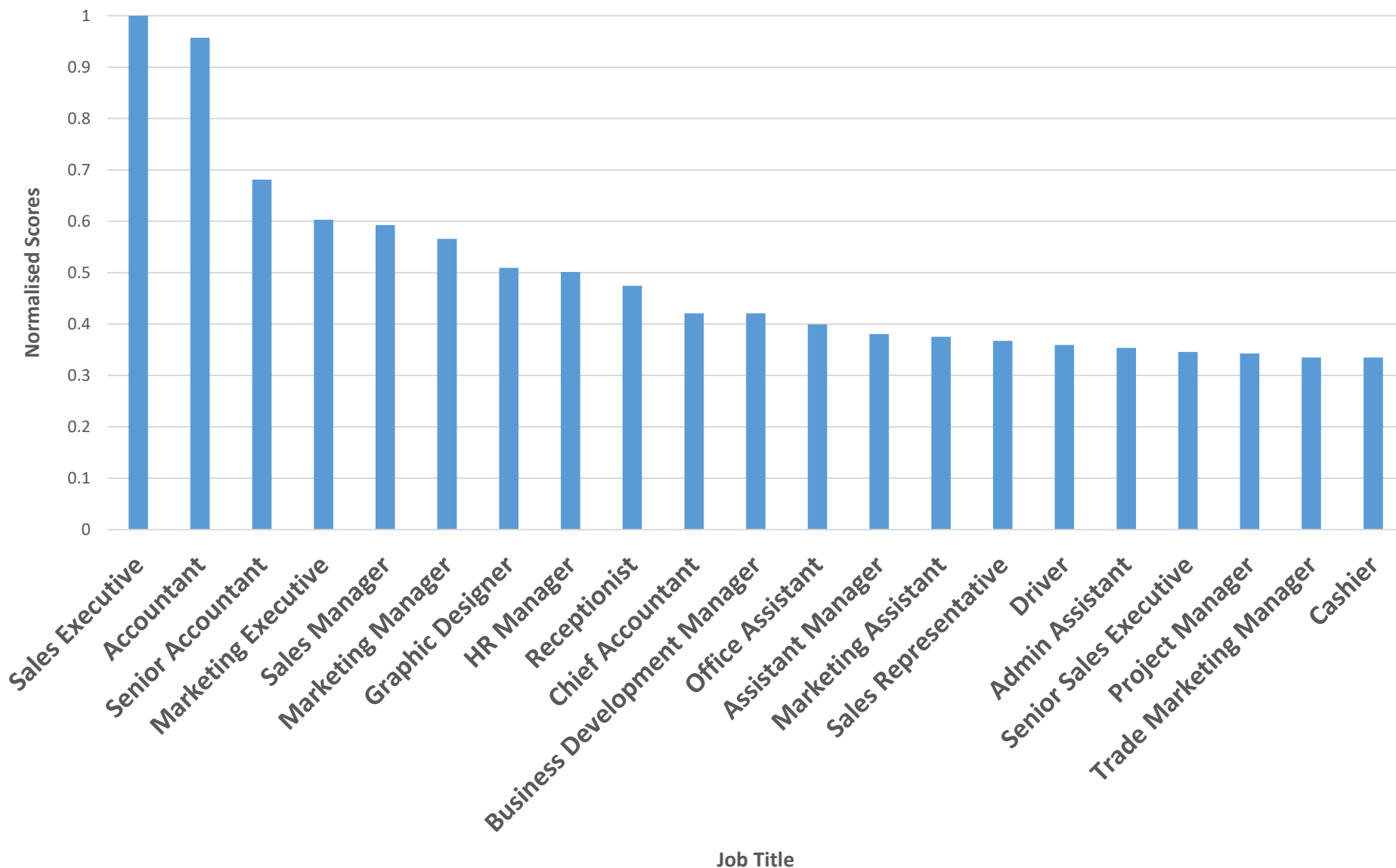
Data cleaning and relational extraction

Source: JobKred

Myanmar: Methodology of using big data

- Over 20,000 data points from *JobNet.com.mm* were cleaned up, with the job titles mapped to appropriate ones within JobKred's taxonomy.
- An initial analysis was then done using the mapped job titles to understand employer demand in the labor market, with frequency of the job titles as the indicator.
- Subsequently, the job descriptions were processed by JobKred's predictive engine to identify and discern skills relevant to the respective job titles. The employer demand for the skills were once again calculated using frequency of occurrence as the indicator.
- A preliminary analysis was done with the data obtained from the above.

Myanmar: Demand for the Top 20 Job Titles



Myanmar: Demand for the Top 20 Job Titles

Top Skills in Sales/Business Development

#1

Job Function by Demand

Top 10 Skills for Sales Executive

01	Sales
02	Identifying New Business Opportunities
03	Customer Service
04	Manage Client Relationships
05	Retaining Customers
06	Long-term Customer Relationships
07	Sales and Marketing
08	Introducing New Products
09	Sales Plan
10	Listening to Customers

Top 10 Skills for Sales Manager

01	Sales
02	Sales and Marketing
03	Sales Management
04	Sales Plan
05	Manage Client Relationships
06	Sales Operations
07	Customer Service
08	Identifying New Business Opportunities
09	Retaining Customers
10	Sales Growth

Top 10 Skills for Business Development Manager

01	Identifying New Business Opportunities
02	New Business Development
03	Manage Client Relationships
04	Business
05	Business Development
06	Sales
07	Helping Clients Succeed
08	Introducing New Products
09	Building Relationships
10	Client Services

JobKred



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Labour force surveys:

- Too slow and not being applied in current information system. Data not granular in terms of jobs and skills
- Lack of reliable labour market information system

Big data

- More real-time labor market information – can help reduce mismatch, increase efficiency, with granular job demand information

- 1. Reliability of data sources**
- 2. Coverage of data**
(white/blue collar jobs, formal/informal employment, etc.)
- 3. Data cleaning**
(double counting, missing values, reporting periods, etc.)
- 4. Taxonomy** (classifications, nomenclature, etc.)
- 5. Complementarity with other labor market information**
(establishment of a holistic and integrated skills governance)

The Way forward: Integrated Approaches and Skills Governance

Administrative Data

Survey Data

International Surveys
Data

Skills assessment

Skills foresight

Skills forecasting

Tracer studies

Longitudinal studies

Opinions studies



CENTRAL REPOSITORIES



EXCHANGE NETWORKS



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The world of work in **multiple transitions**

*TVET is at the **interface between education and the world of work**, and is expected to **facilitate the insertion of young people and adults into the labour market, and their career progression**.*

Economic recovery: 2020 recession and long-term impact

Technological change: Digitization, Automation, 5G, AI => Industry 4.0

Informality: 61% of total employment

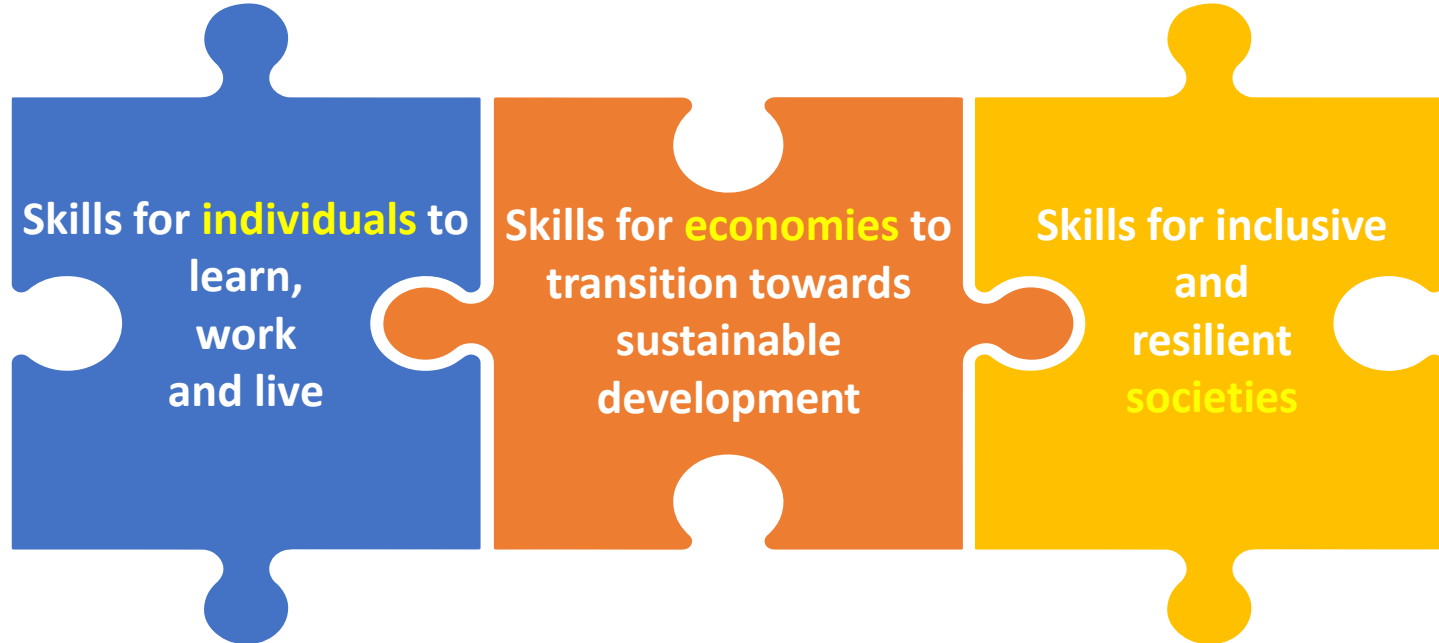
Demographic transition: Youth bulges / Ageing populations

Societal and political issues: Right to ED, intergenerational solidarity, migrations

Sustainable Development: Climate change, biodiversity, green transition



New UNESCO Strategy for TVET 2022-2029



- ❑ Target populations that have had limited access to skills / Inclusion
- ❑ Lifelong learning (LLL) opportunities for adults and the elderly
- ❑ Experience new training modalities including through digital technology
- ❑ Prepare for jobs in of the future : digital economy; creative industries

- ❑ Countries need to align their skills agenda with economic transitions and labour market needs (job destruction & creation, STEM skills)
- ❑ The private sector is central in expressing skills needs, work-based learning (WBL), investing in skills, recognizing, certifying and valuing the skills acquired; stakeholders platforms

- ❑ More participatory governance of institutions and programmes
- ❑ Encouraging young people to engage in public affairs
- ❑ Renewal of training content, skills and pedagogies including problem-based education, collaboration and civic competencies, scientific and digital and information literacy etc.

Cross-cutting interventions

Data and knowledge lever

- **Collecting and analysing data** on TVET programmes and their outcomes
- Develop a **framework of key indicators** with the UNESCO Institute for Statistics (UIS) to improve the ability of Member States to monitor progress towards SDG4
- Develop a **'global skills tracker'** to document skilling, reskilling and upskilling programmes, and the training and work trajectories of young people
- Create a **repository of TVET plans and strategies**, including their monitoring and evaluation (M&E).

Normative lever

- *The Convention on Technical and Vocational Education (1989)*
- ***The Recommendation Concerning Technical and Vocational Education (2015).***
- *1960 Convention against Discrimination in Education,*
- *1966 Recommendation concerning the Status of Teachers*
- *1997 Recommendation concerning the Status of Higher-Education Teaching Personnel*
- *2015 Recommendation on Adult Learning and Education*
- *2019 Global Convention on Higher Education.*

Network and partnerships

- Inter-Agency Group on Technical and Vocational Education and Training (**IAG-TVET**)
- The Teacher Task Force (TTF)
- The Global Education Coalition (GEC), the **Global Skills Academy (GSA)** and the Broadband Commission

How can we **work together**



International
Labour
Organization



United Nations
Educational, Scientific and
Cultural Organization



Member of
COVID-19

Global Education Coalition
Launched by UNESCO



Inter-Agency Group on
**Technical and Vocational
Education and Training (TVET)**

TVET
Policy Review



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International Conference on Transforming Technical and Vocational Education and Training (TVET) for successful and just transitions

7 – 8 December 2021 13:30-15:30 (CET)

Online event



THANK YOU!

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