

Skills for Digital and Just Transitions

SADC TVET Symposium, Johannesburg, South Africa

Interconnected Digital and green transitions



Part 1

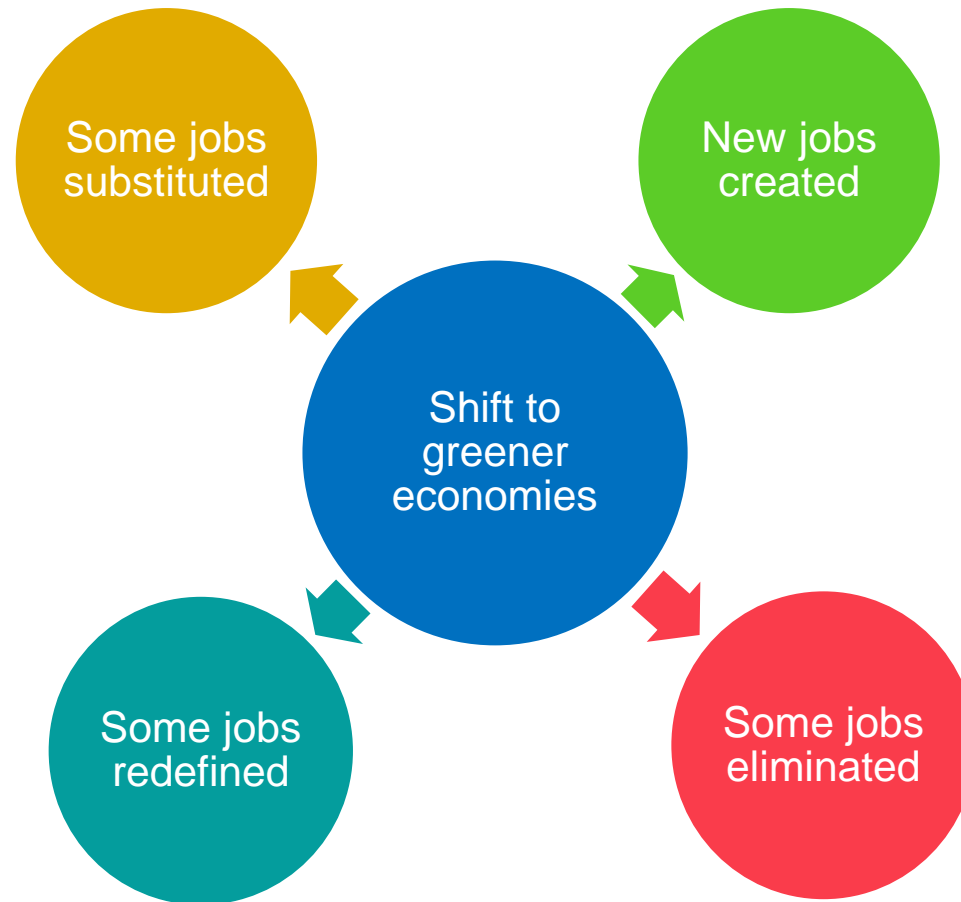
Skills for Just Transition


- **Greening of TVET: competency standards, curricula, programmes, processes**
- **VET for the circular economy**
- **Private sector engagement**

▶ Slido questions – Part 1

WHY: Climate change impacts on jobs and productivity

- ▶ By 2030, 2% of working hours can be lost, with decline to labour productivity.
- ▶ 1.2 billion jobs are closely linked to eco-system services.
- ▶ Achieving the 2-degree target brings net employment gains of 18 million new jobs by 2030.



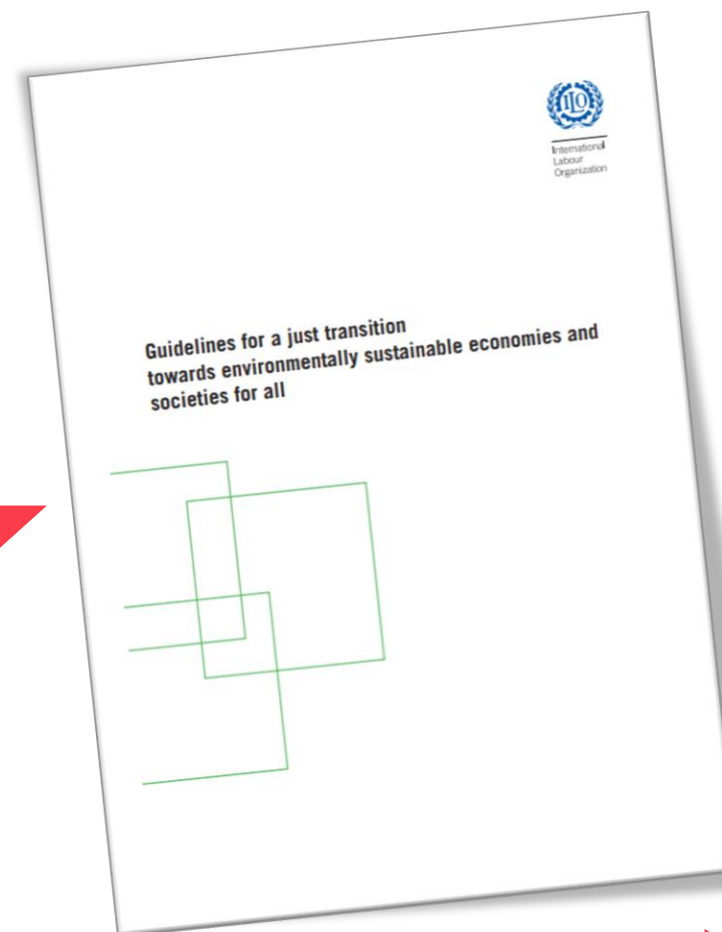
- 
- ▶ But, we are on a positive narrative: climate action can deliver more and better jobs, with the right set of policies.

ILO Just Transition Framework

In 2015, the ILO adopted the policy **guidelines for a just transition** towards environmentally sustainable economies and societies for all.

Skills development & ALMPs

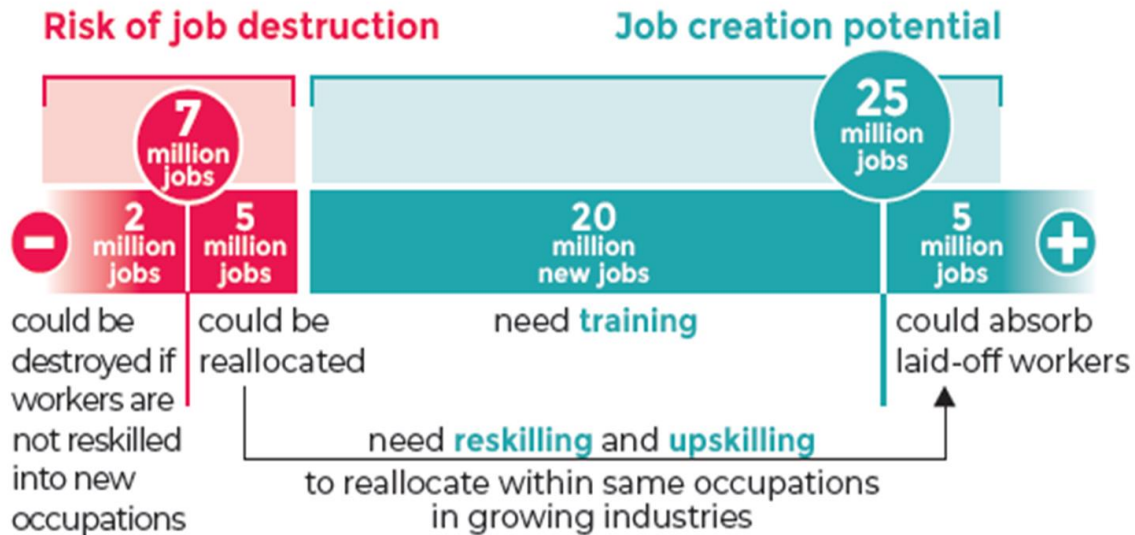
Key policy areas to address the environmental, economic and social sustainability.



Investment in reskilling and upskilling is crucial for green transition

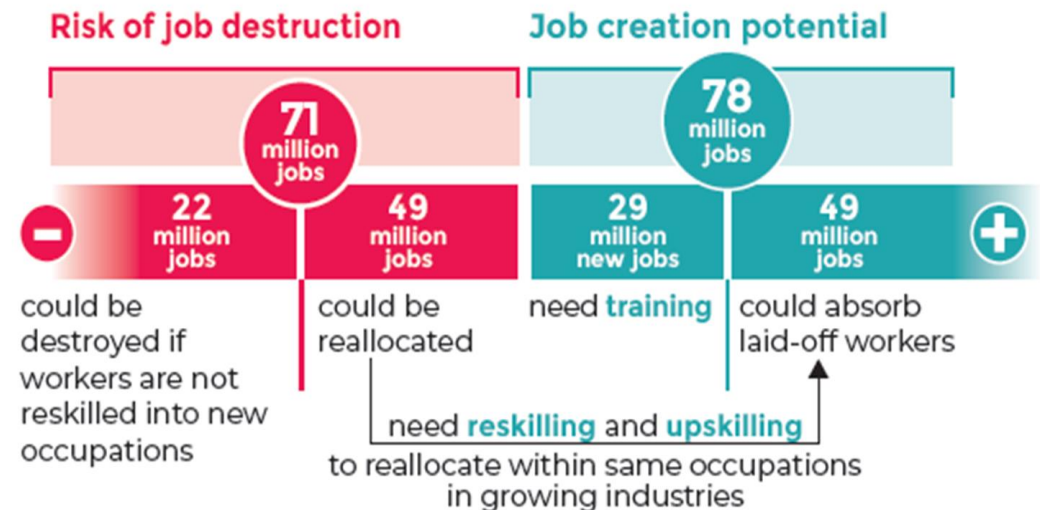
▶ Energy sustainability scenario, 2030

Potential job growth



▶ Circular economy scenario, 2030

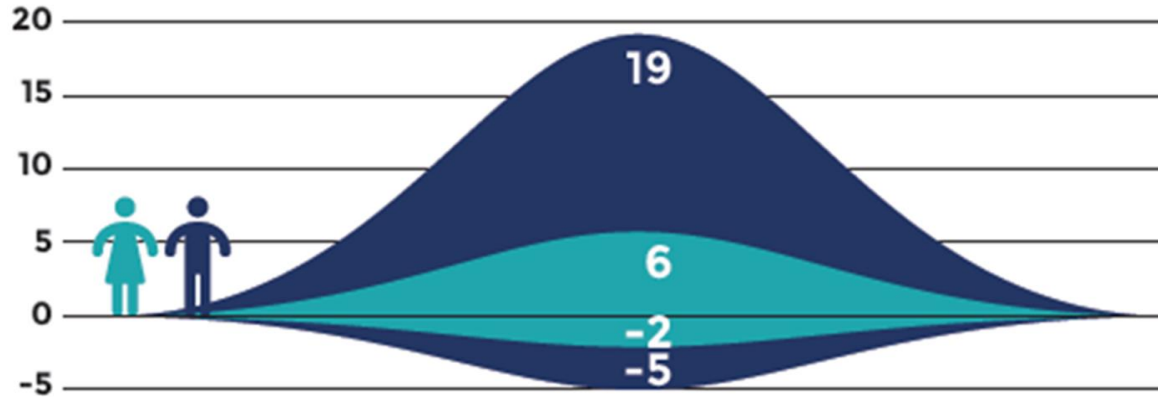
Potential job growth



Sources: ILO (2019) & Skills for a Greener Future. Infographic (2019).

Gender Outlook in both global scenarios

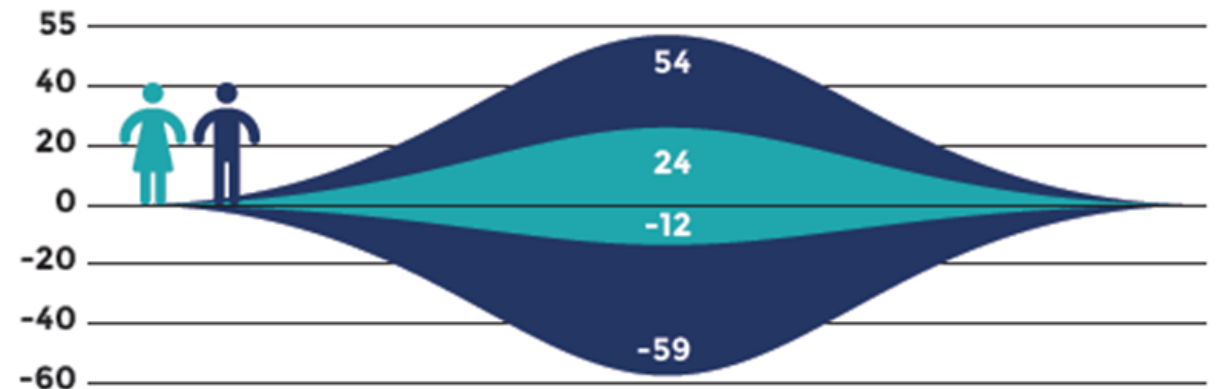
Job change by gender



Circular economy, 2030

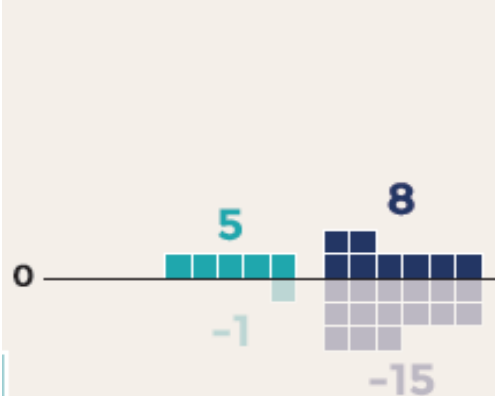
Energy sustainability, 2030

Job change by gender

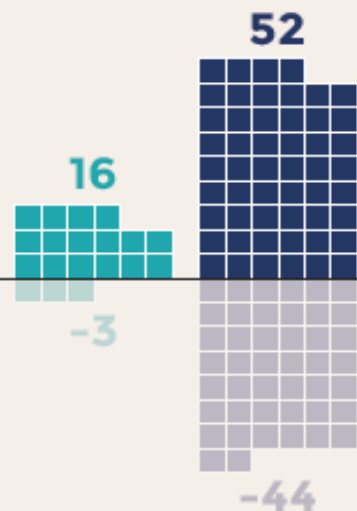


Re-skilling measures required at all skill level

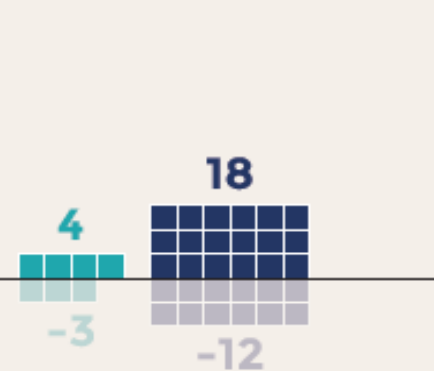
Low-skilled occupations
On-the-job learning or short training and upskilling programmes will be required.



Medium-skilled occupations
Short to longer upskilling and re-skilling programmes, technical and vocational education and training courses will be required.



High-skilled occupations
University degrees, longer upskilling programmes and continuous training programmes will be required.



HIGH

New occupations: agricultural meteorologists, climate change scientists; energy auditors, energy consultants; carbon trading analysts

Changing occupations: building facilities managers; architects; engineers

MEDIUM

New occupations: wind turbine operators; solar panel installers

Changing occupations: roofers; technicians in heating, ventilation and air conditioning; plumbers

LOW

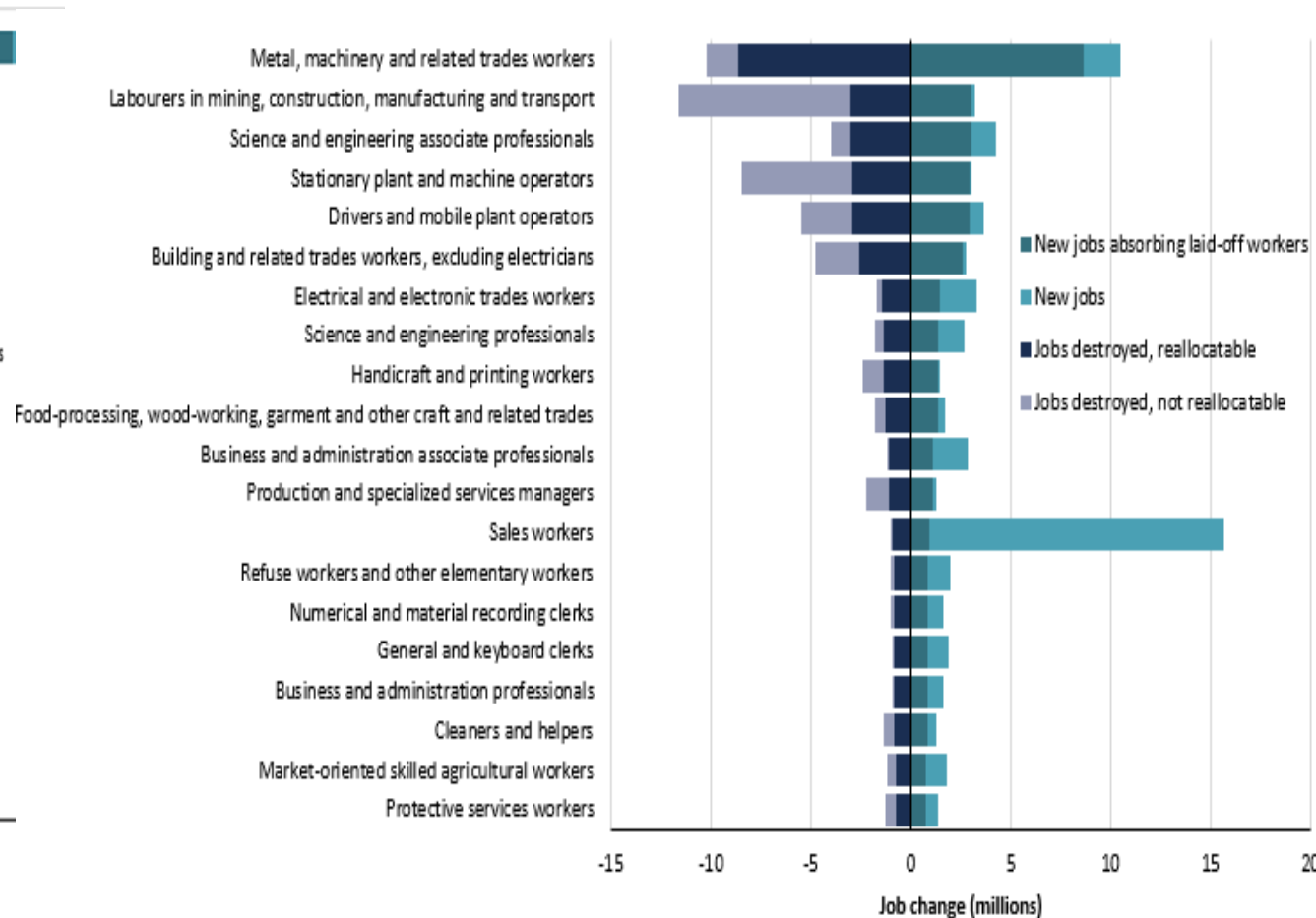
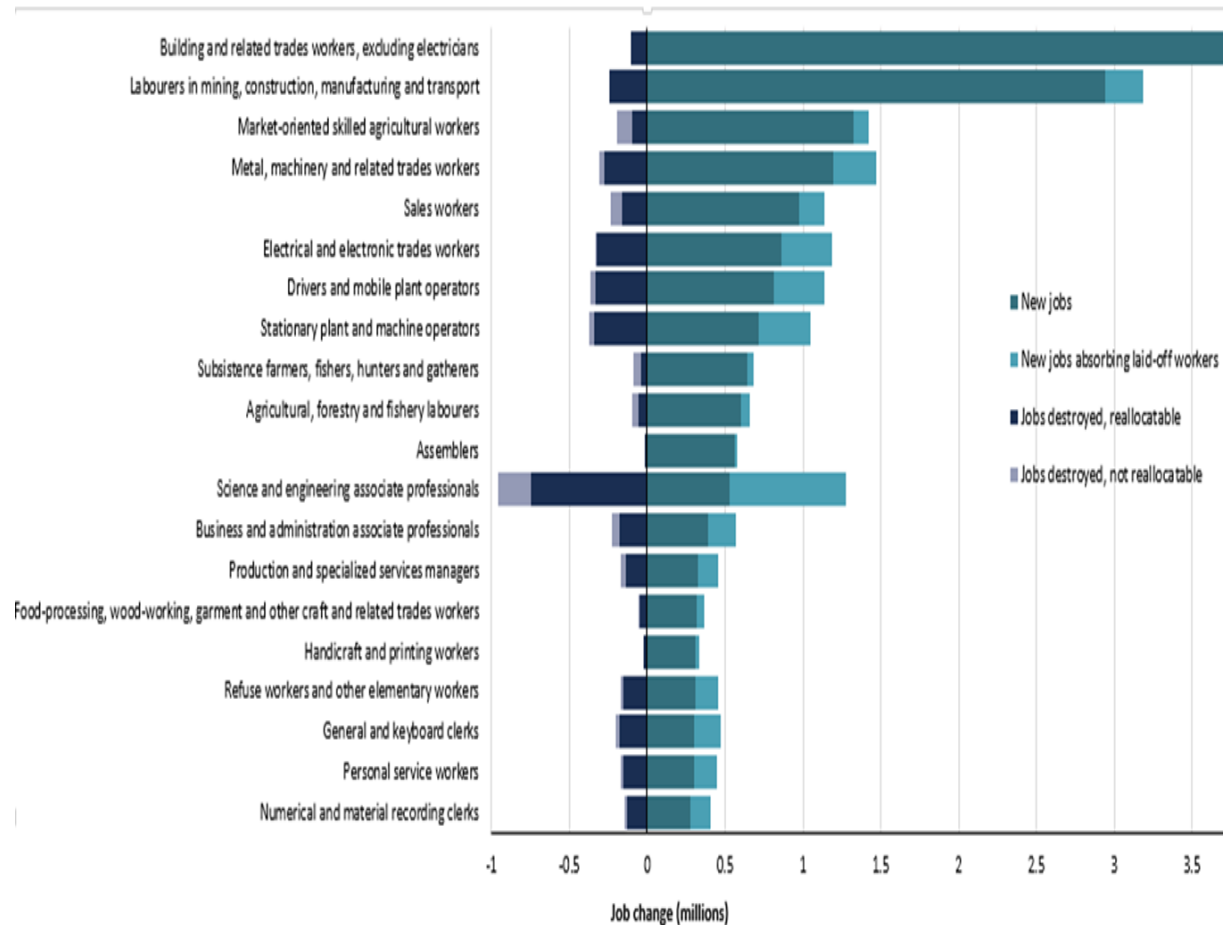
Refuse/waste collectors, dumpers

■ Energy transition scenario, 2030 (jobs in millions) ■ Circular economy scenario, 2030 (jobs in millions)

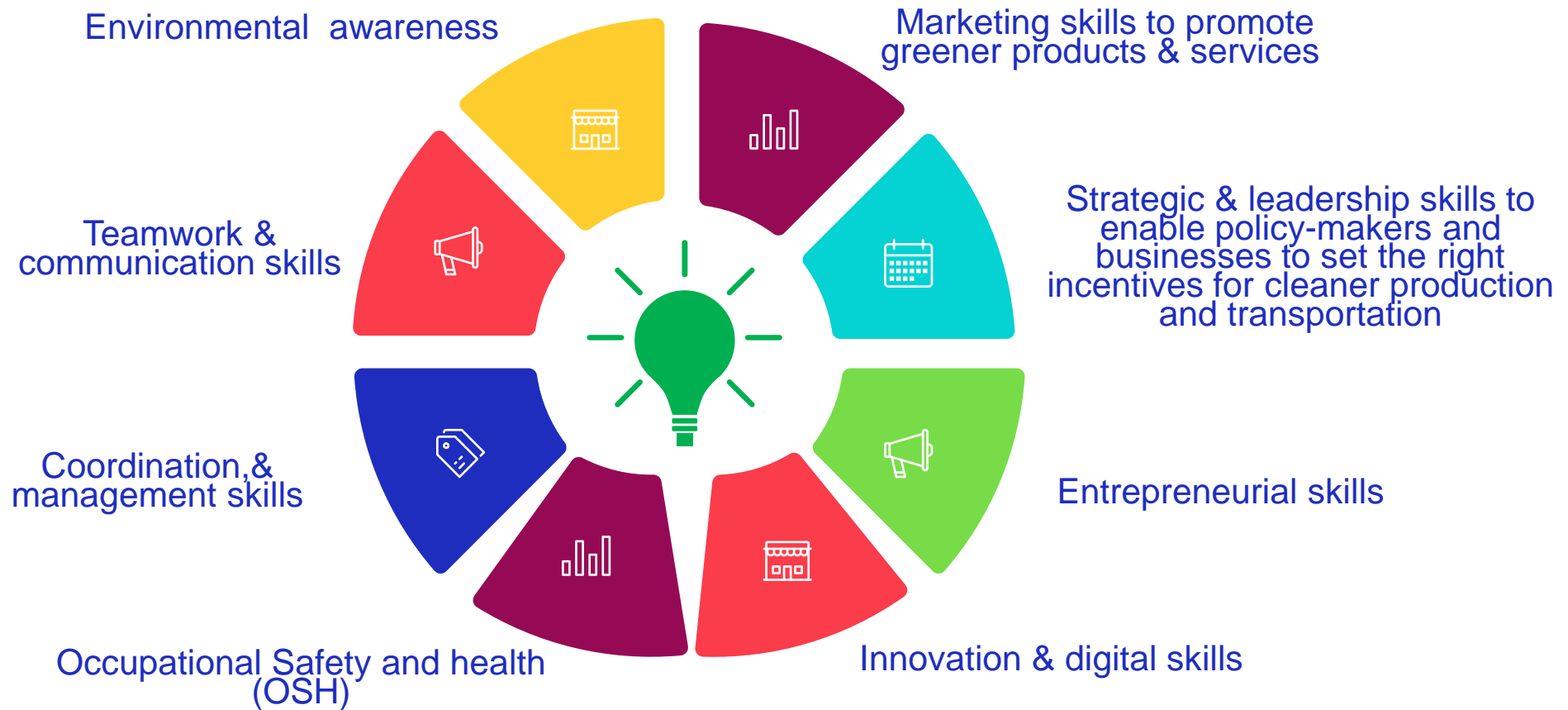
Green projection by occupation in two scenarios

Energy sustainability scenario, 2030

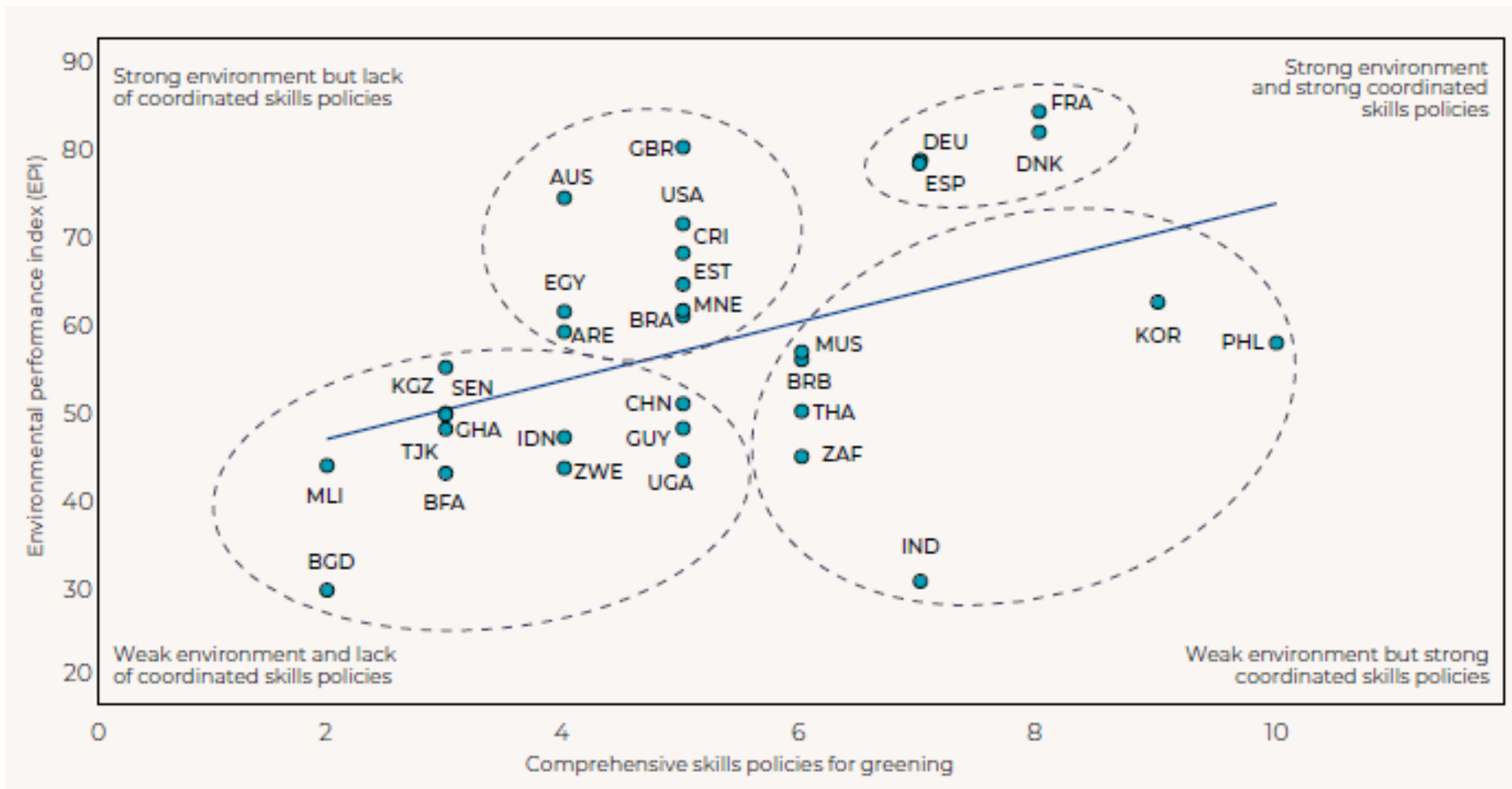
Circular economy scenario, 2030



Core employability skills are essential in green transition



Policy coherence is a key factor of success



Source: ILO (2019) Skills for a Greener Future

The 'How-to' Sections

Contents

- ▶ Key learning points
- ▶ Knowledge or 'theory' component
- ▶ Self-assessment tools
- ▶ Inspiring practical examples
- ▶ Hints and tips
- ▶ Checklists
- ▶ Links to useful resources



ILO knowledge products and tools on skills for a greener future

Skills for a
Greener Future: A
global view



Anticipating skill needs
for green jobs: A
practical guide

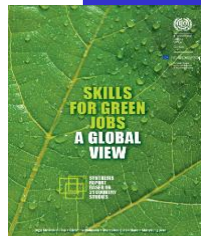


Skills and Occupation
Needs in Renewable
Energy



Skills and Occupation
Needs in Green Building

Skills for Green
Jobs: A global view



Policy Brief: Challenges
and enabling factors to
achieve a just transition



Comparative analysis of
methods of identification of
skills needs on the labour
market in transition to the
low carbon economy



Greening TVET and
skills development: A
practical guidance tool



Just Transition Policy
Brief: Skills development
for a just transition



For more information:

skills@ilo.org

ILO SKILLS - <https://www.ilo.org/skills>

Global KSP - <https://www.skillsforemployment.org/skpEng>

ZIMBABWE

1. Curricula development
2. Training of Trainers
3. Training of students (1,500)



Renewable Energy

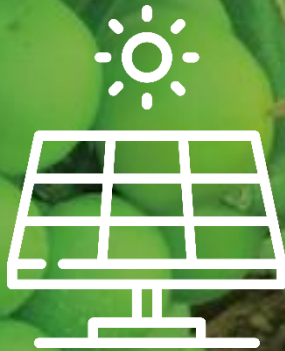


Agriculture



Biogas System
Installer

14 (4F) Teachers



Domestic Solar PV
System Installation
and Maintenance
Mechanic

27 (4F) Teachers



Solar Sales and
Marketing Agent

12(5F) Teachers



Solar Agro-
Processor

12 (6F) Teachers



Climate-Smart
Market
Gardener

12 (8F) Teachers

TVET Institutions and Private Sector Partnerships

Role of work-based learning



Skills for Energy in Southern Africa – A Public Private Development Partnership

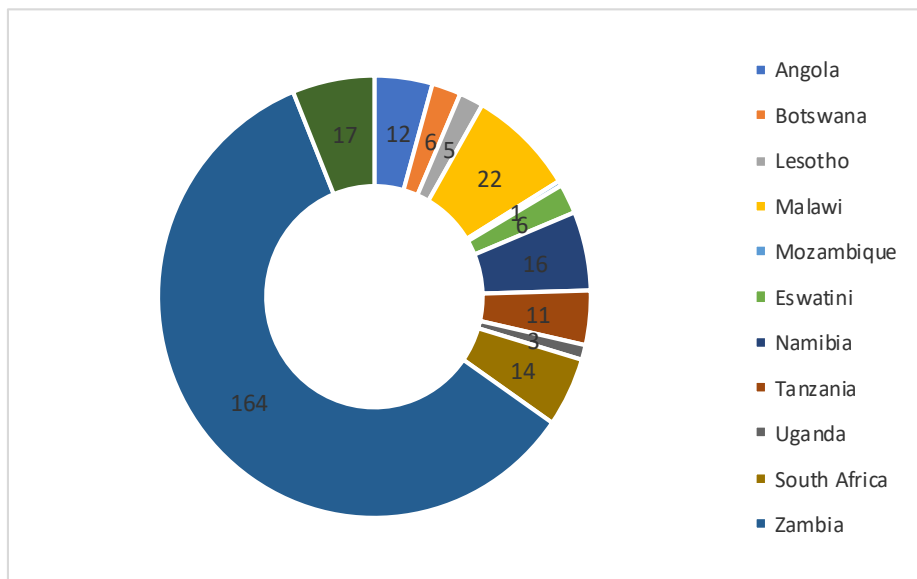
Objective: Increased uptake of Renewable Energy, Energy Efficiency and Regional Energy Integration interventions in Southern Africa, leading to a more sustainable and low carbon energy mix.

Outcome 1: More power technicians, engineers and managers in the SADC region have enhanced technical capacity to apply, manage and promote the latest RE, EE and REI technologies

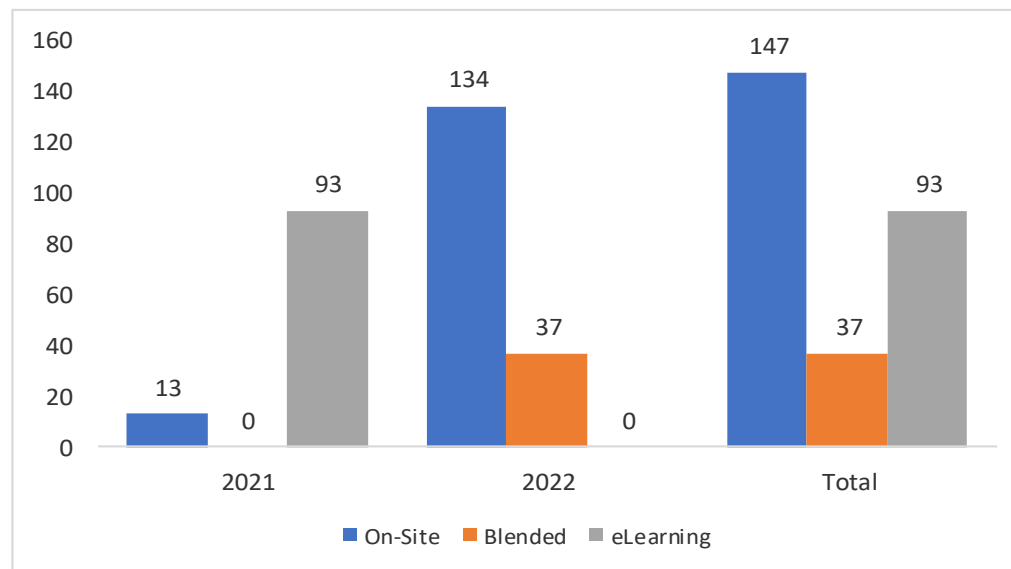
Outcome 2: KGRTC has built its brand and standing as the region's Centre of Excellence for competitive skills training in Renewable Energy, Energy Efficiency and Regional Energy Integration technologies

Skills for Energy in Southern Africa – A Public Private Development Partnership

Numbers of trainees reached in SADC and others



Trained per training delivery mode(2021-22)



► Discussion questions - Part 1

Understanding skills for a green economy

How to identify future occupational changes and skills gaps as a result of green transition?

What are the implications for technical and vocational education and training?

Given your own national context, what new competencies and courses should be developed?

Greening TVET

How to prioritise and undertake the greening of [competency standards, curricula, programmes and processes] at TVET level? What are the needs in terms of teachers' professional development?

Can you provide some examples of country level initiatives in this respect?

What mechanisms are in place to involve the private sector in the greening of TVET?

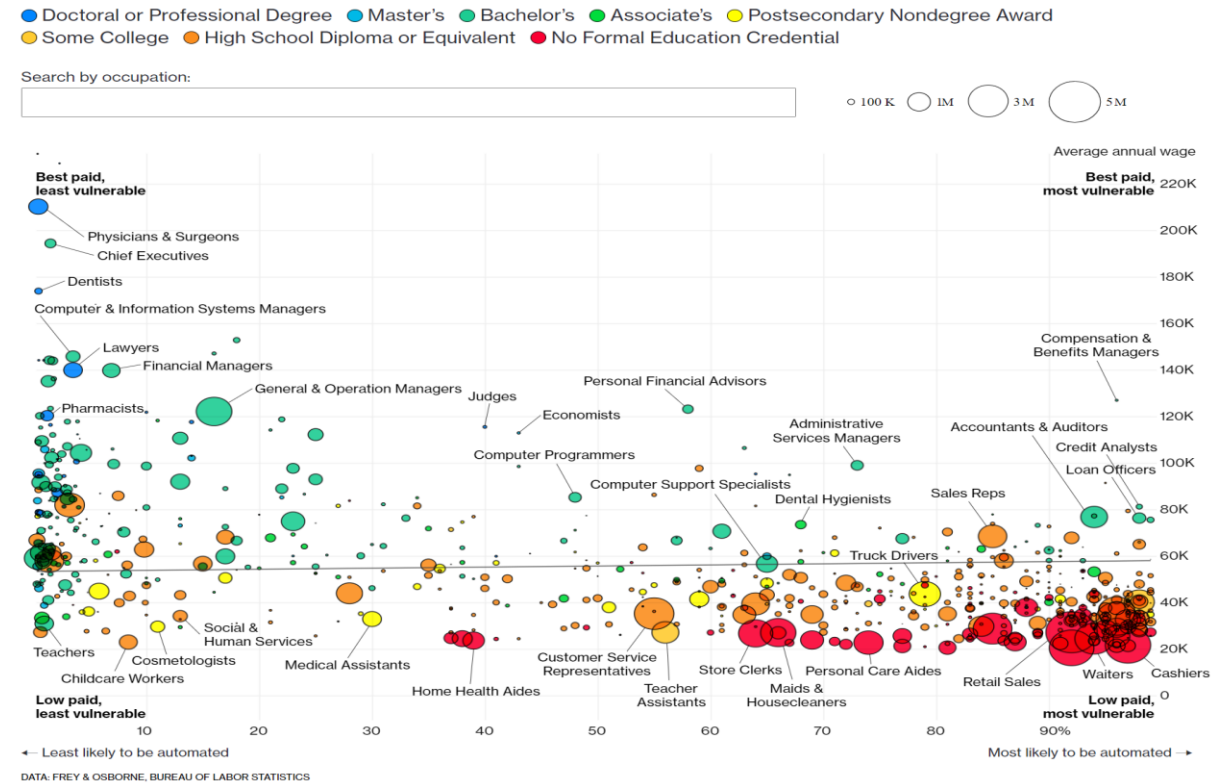
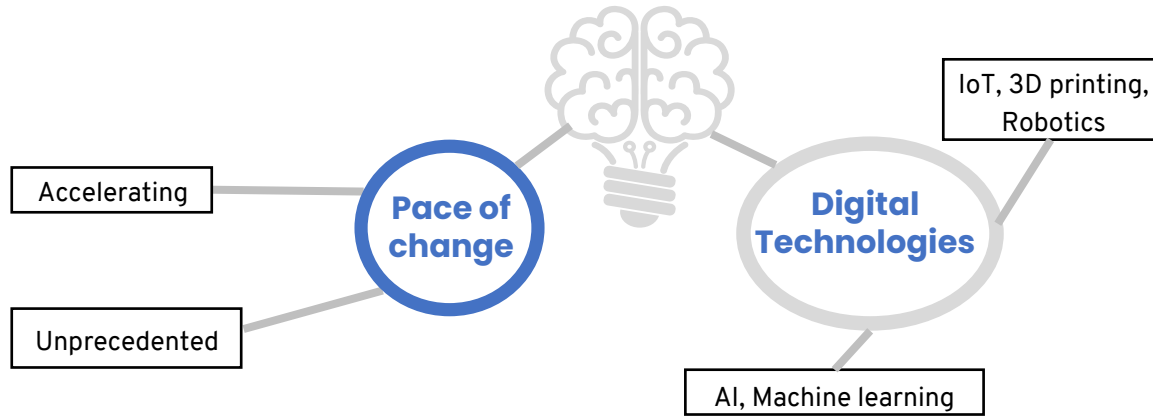
Part 2

Skills for Digital

- Digital transformation of TVET and skills development systems
- Training of Trainers in digital skills
- Using augmented reality / virtual reality for TVET
- STEM approach in TVET
- Digital skills and competencies for TVET

▶ Slido questions – Part 2

Employment changes induced by digital transformation



▶ Many estimates on susceptibility of jobs to automation

- ▶ Some argue – potentially all;
- ▶ Asia(ASEAN) - around 56% (ILO 2016);
- ▶ Half in advanced economies (Frey, Osborne 2013);
- ▶ More modest estimates – 14% (CEDEFOP 2019)
- ▶ Automatable ≠ Will be automated

▶ Job creation potential/learning opportunities

- ▶ Automation is unlikely to destroy all occupations
- ▶ Changes in the types and number of tasks in most occupations (**changes within occupations**)
- ▶ Realization of job creation opportunities will depend on ensuring that workers can move to newly created jobs (**transition by reskilling/upskilling**)

Why Institutions Should Prioritize Skills



Governments must identify and train for the in-demand skills needed to future-proof their labor force and accelerate economic growth



Employers

Businesses must focus on upskilling solutions to accelerate transformation, retain top talent, and make employees successful



and TVET

Higher education institutions must prepare students for successful job outcomes by prioritizing in-demand and human skills, job-based learning, and hands-on projects

Changes in occupations and tasks

▶ Jobs and tasks that will decrease in demand or automated:

▶ **Routine-based tasks** that include predictable physical activities, processing and collecting data, such as machine operators; data entry clerks, accounting and payroll clerks, auditors etc.

▶ Changes of tasks **within established occupations**:

▶ Due to **technology adoption**, such as starting to use a smartphone by farmers; or digitalizing of patients' files by medical practitioners

▶ Due to **technology sophistication**, such as learning new software and work methods

▶ Due to **leveraging of the role of soft human skills** because of the technology

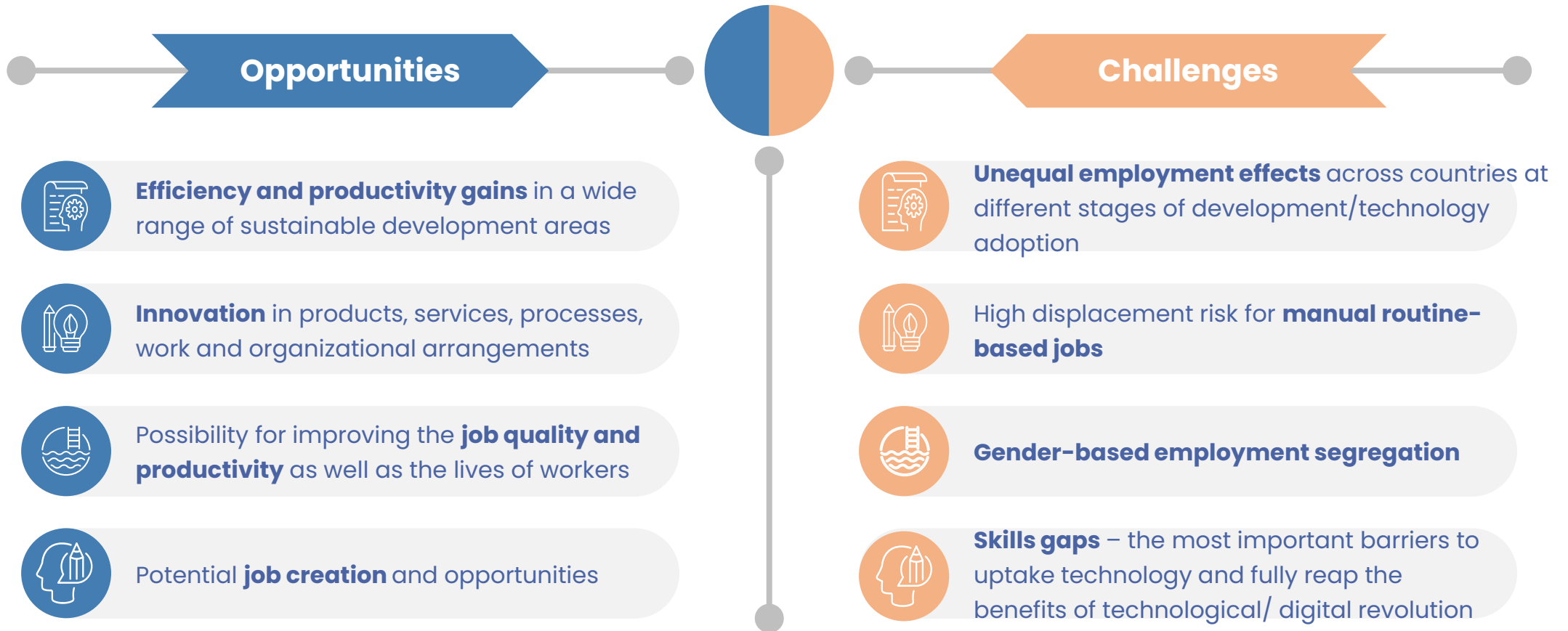
▶ **New jobs and tasks**:

▶ Roles that are significantly based on and enhanced by the use of technology, as well as "hybrid occupations"

▶ such as AI and Machine Learning Specialists, Process Automation Experts, Information and Cyber Security Analysts, cobot trainers etc

Source: ILO (forthcoming), "Changing Skills Demand for Digital Economies and Societies"

Technological change and digitalization: opportunities & challenges

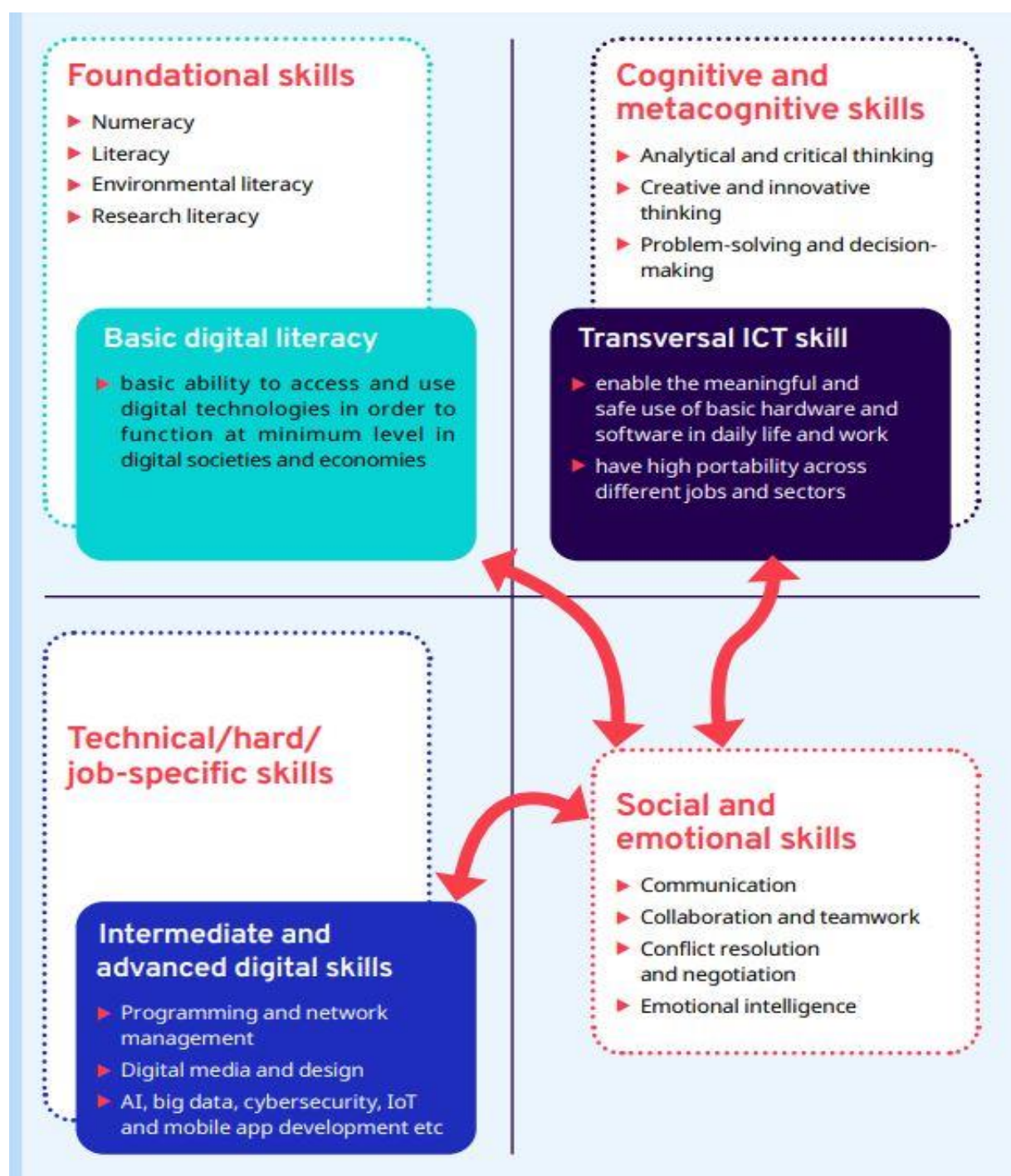


Source: ILO (forthcoming), "Changing Skills Demand for Digital Economies and Societies"

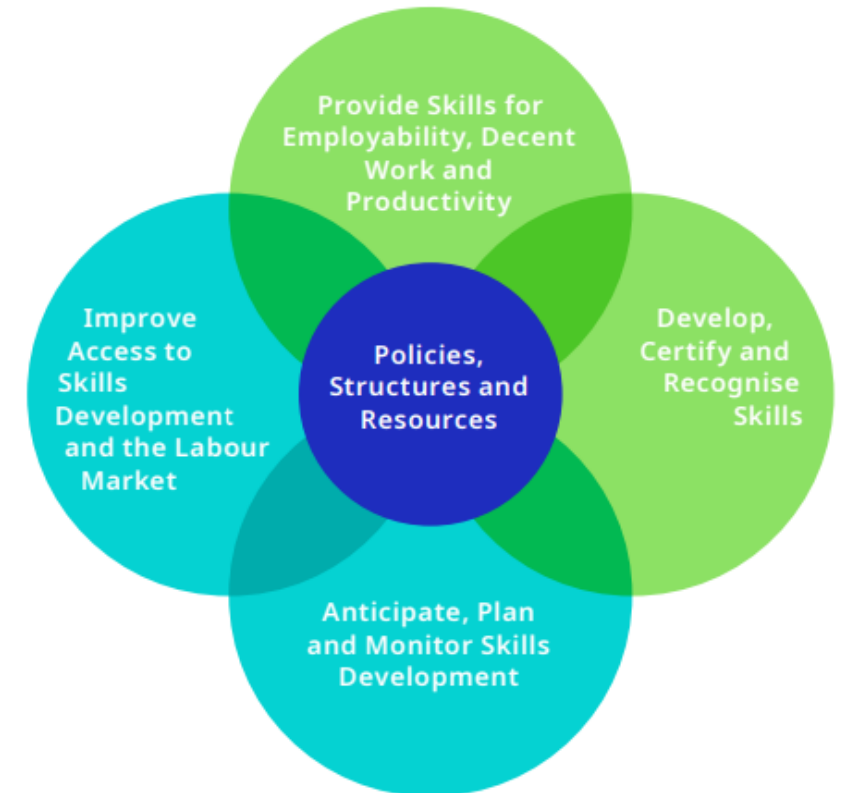
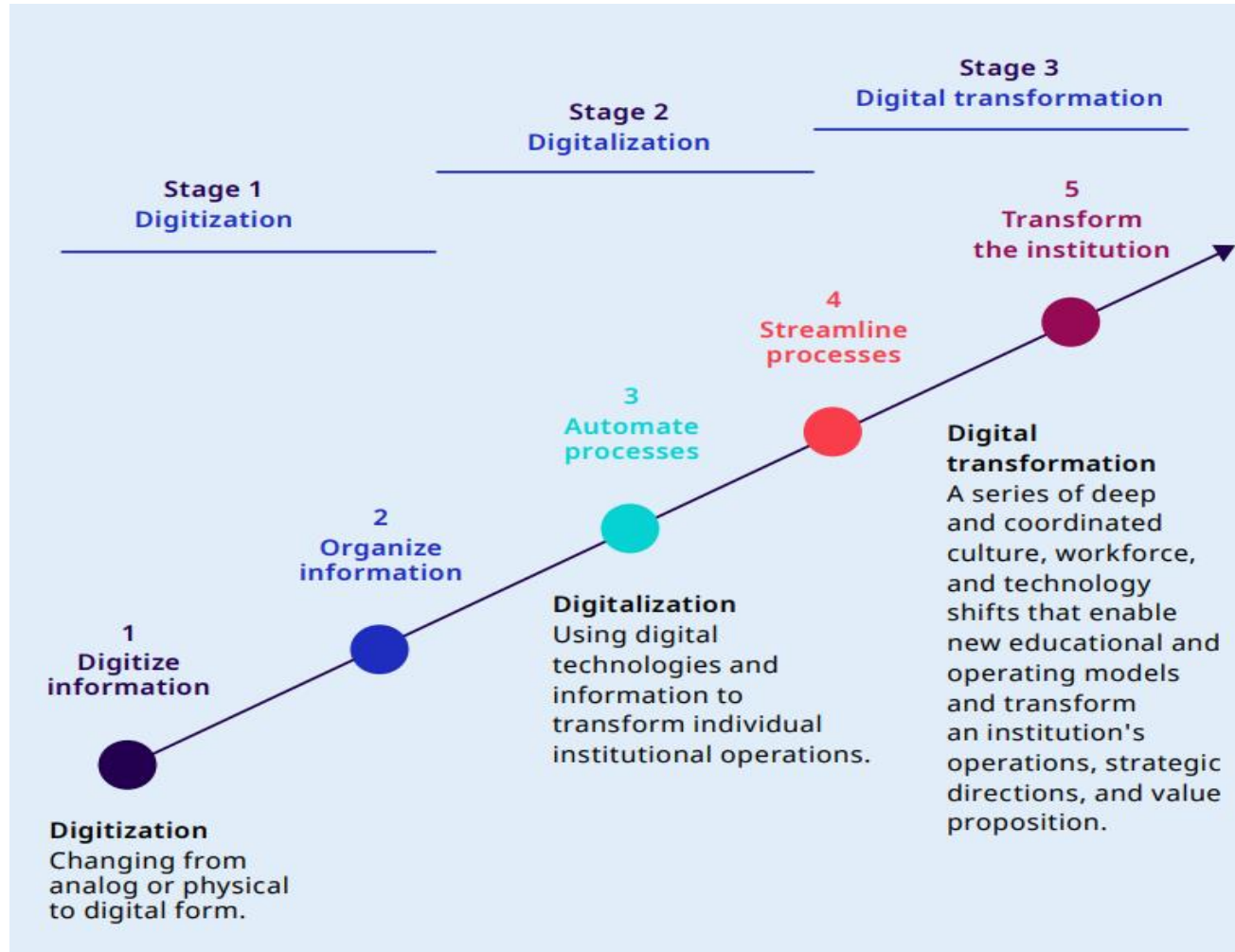
Digital skills as a subset of skills for digital economies



Sources: ILO (2021), Changing demand for skills in digital economies and societies



Digital Transformation of TVET – 3 stages



5 Key Principles in TVET Digital Transformation

Digitalisation
changes roles, for
everyone

Social Inclusion as
a key focus

TVET requires
specific digital
solutions

Change
management

DT requires a
workforce
development
approach

Focus on Trainers & Instructors

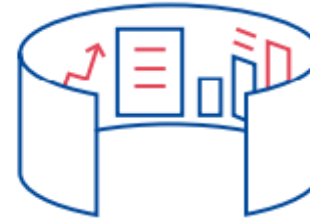
Key areas of learning holding promises for TVET

▶ Figure 2: Six areas of learning holding promise for TVET



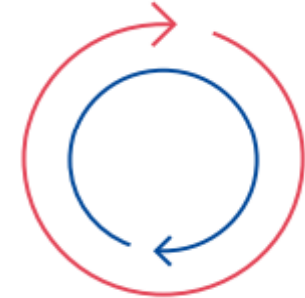
DISTANCE LEARNING AND ASSESSMENT

Learn anywhere and anytime



SIMULATION

Modelling of work-environments in digital worlds



FLIPPED CLASSROOMS

Receive knowledge at home/online, practice skills in class



GAMIFICATION

Using game incentives schemes to increase motivation



OPEN EDUCATION (RESOURCES)

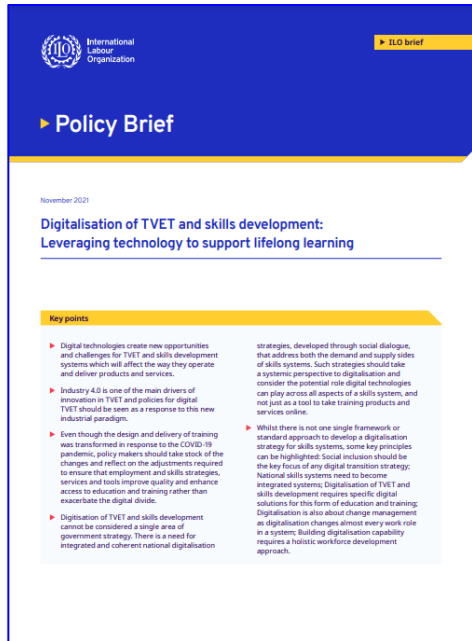
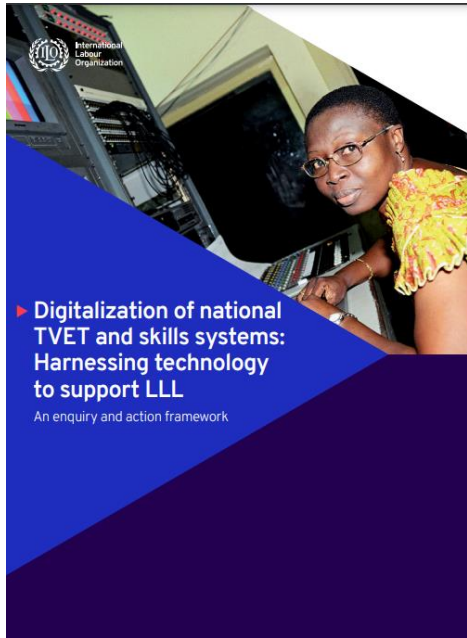
Increasing access to education by removing restrictions to content



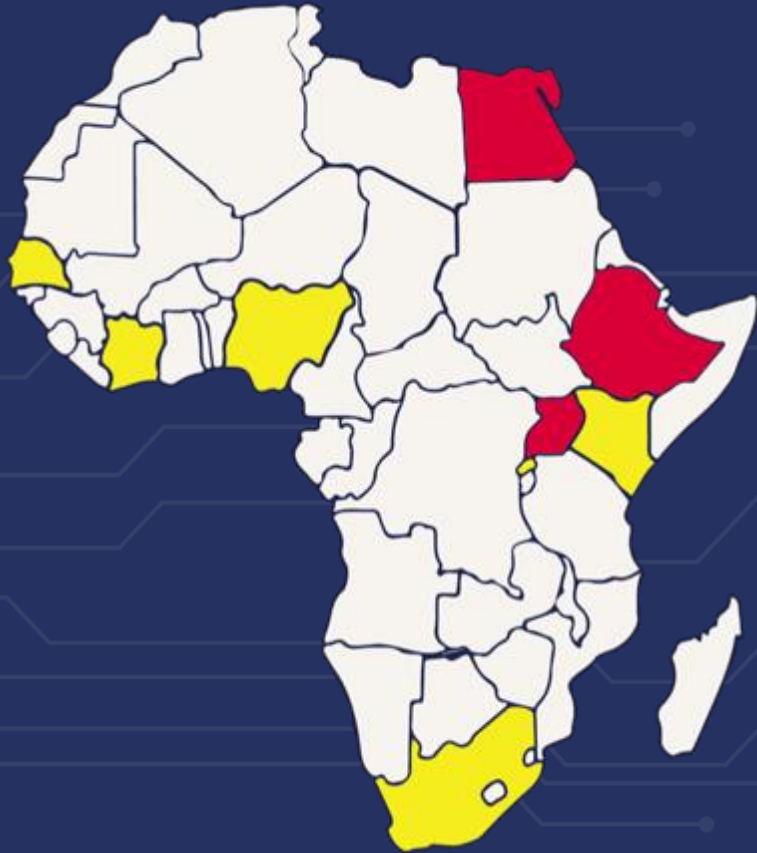
PERSONALISATION

Enabling each student to study according to their own abilities and aspirations

Some Key Publications and Guidance on Skills Development Digitalization



AU/ILO/ITU INITIATIVE "BOOSTING DECENT JOBS AND ENHANCING SKILLS FOR YOUTH"



Pilot countries



Côte d'Ivoire



Kenya



Nigeria



Rwanda

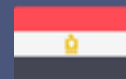


Senegal



South Africa

Expanding to...



Egypt



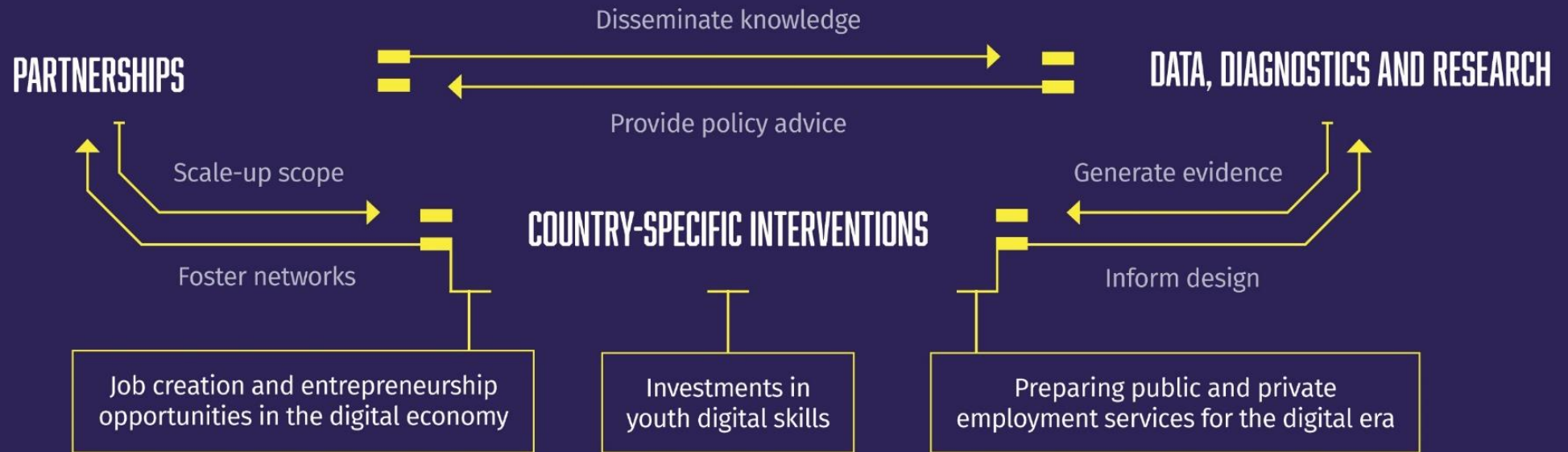
Ethiopia



Uganda

Implementation approach

Increase the number of young Africans in target countries able to access decent work in the digital economy, through an iterative cycle of programme implementation, partnership development and understanding what works



Assessment of skills supply and demand in the digital economy to unlock opportunities for youth NEET in South Africa

A nationwide, broad and inclusive assessment whose scope is to identify gaps, opportunities and detect specific skills needs that, if addressed, can generate new employment opportunities for young people



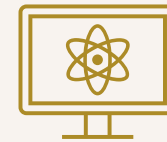
Nationwide, broad and inclusive study



Possible existing employment opportunities



Possible learning pathways: Focus on skilling and upskilling



Insights of entrepreneurial opportunities



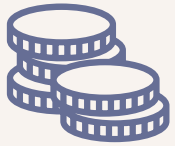
Perspective of young people

Relevant context for the research to add value:

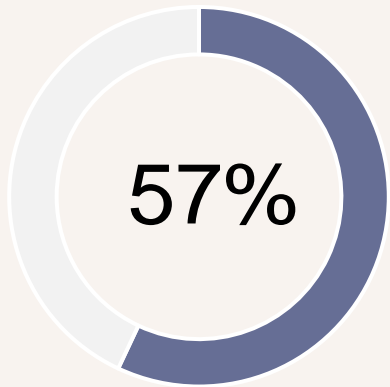
- National Digital and Future Skills Strategy
- Presidential Commission on the Fourth Industrial Revolution
- Digital Economy Masterplan, Presidential Youth Employment Intervention / Pathway Management Network
- Global Initiative on Decent Jobs for Youth
- Findings from district level research and interventions

Perspective of young people

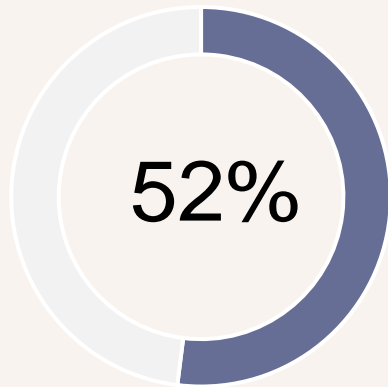
Young people consider financial support and internet access as most important to acquire digital skills



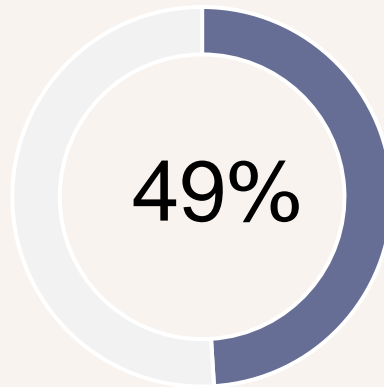
Money and financial support



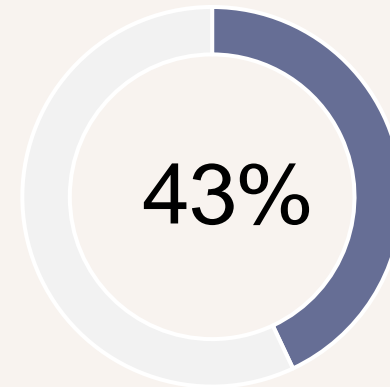
Better connectivity or internet access



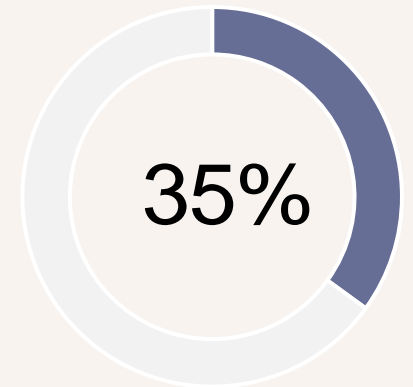
Information on how to acquire digital skills



Cheaper internet



A job or practical experience



Discussion questions - Part 2

Skills for digital transformation

Are there regional approaches that could be adopted to introduce /accelerate the digital transformation of the TVET ecosystem and institutions, bearing in mind the different contexts of member states?

Given the dynamics in the world-of-work, what methodology should be adopted to evaluate and upgrade current digital skills development programmes?

How to augment the generally insufficient skills of trainers in relation to technological and digital methods?

What process should be adopted to translate required STEMI competencies into information input/reference documents for curriculum development?

How to mainstream innovation and technology into TVET curricula development and programmes in stimulating tech-entrepreneurship?

How do you see the intersection between the green transition and digital transformation?