

Day 3

**Session 3: Innovation
Micro-credentials**

New demands, new opportunities and challenges

Seychelles - CATS Consultation Week

Eduarda Castel-Branco



Dialogue, co-construction, sharing, ownership



01

**We Know – the Future of Work
is here - Transformation**

Drivers of change

Digitalisation - Automation - AI

Covid-19

Greening of economy and society

Societal movements: rights, democracy, information, innovation

- The future of work arrived ahead of schedule
- “2 years of digital innovation in 2 months”
- Remote work: post-Covid19
- Wave of innovation and launch of new generation of entrepreneurs
- Digitally enabled productivity gains accelerate 4th Industrial Revolution
- Reskilling
- Learning anytime, anywhere, anything
- Hybrid skills
- New types of qualifications: micro-credentials, digital certificates

**'Double-disruption'
scenario for workers**

Tandem Covid-19
recession x automation &
digitalisation

Top Skills 2023

Cognitive skills top the list of those deemed to be of greatest importance for workers in 2023.











Analytical thinking is considered to be a core skill by more companies than any other skill, making up, on average, 9.1% of the core skills reported by companies.

Creative thinking comes second, ahead of three self-efficacy skills – resilience, flexibility and agility; motivation and self-awareness; and curiosity and lifelong learning – which recognize the importance of workers' ability to adapt to disrupted workplaces.



Top 10 skills on the rise



- | | |
|--|---|
| 1.  Creative thinking | 6.  Systems thinking |
| 2.  Analytical thinking | 7.  AI and big data |
| 3.  Technological literacy | 8.  Motivation and self-awareness |
| 4.  Curiosity and lifelong learning | 9.  Talent management |
| 5.  Resilience, flexibility and agility | 10.  Service orientation and customer service |

Type of skill

■ Cognitive skills
 ■ Self-efficacy
 ■ Management skills
 ■ Technology skills
 ■ Working with others
 ■ Engagement skills

Source

World Economic Forum, Future of Jobs Report 2023.

Note

The skills judged to be increasing in importance most rapidly between 2023 and 2027



Fastest growing vs. fastest declining jobs

Top 10 fastest growing jobs

1.	AI and Machine Learning Specialists
2.	Sustainability Specialists
3.	Business Intelligence Analysts
4.	Information Security Analysts
5.	Fintech Engineers
6.	Data Analysts and Scientists
7.	Robotics Engineers
8.	Electrotechnology Engineers
9.	Agricultural Equipment Operators
10.	Digital Transformation Specialists

Source

World Economic Forum, Future of Jobs Report 2023.

Top 10 fastest declining jobs

1.	Bank Tellers and Related Clerks
2.	Postal Service Clerks
3.	Cashiers and ticket Clerks
4.	Data Entry Clerks
5.	Administrative and Executive Secretaries
6.	Material-Recording and Stock-Keeping Clerks
7.	Accounting, Bookkeeping and Payroll Clerks
8.	Legislators and Officials
9.	Statistical, Finance and Insurance Clerks
10.	Door-To-Door Sales Workers, News and Street Vendors, and Related Workers

Note

The jobs which survey respondents expect to grow most quickly from 2023 to 2027 as a fraction of present employment figures

Future of Jobs Report 2023 Image: World Economic Forum

Reskilling needs

44%

of workers' core skills
are expected to change
in the next five years



Source: World Economic Forum,
Future of Jobs Report 2023.

<https://www.weforum.org/agenda/2023/05/future-of-jobs-2023-skills>

02

**Green and digital
skills – in-demand**

Green-enabled recovery and growth

- Green with a touch of brown is the colour of recovery
- Greening of the economy and society – at heart of post-Covid19 recovery strategies and growth in many countries
- **Green growth opportunities abound across massive sectors such as energy, mobility, and agriculture.**
- Just as digital-economy companies have powered stock-market returns in the past couple of decades, so green-technology companies could play that role in the coming decades.
- EU, US, China, Japan, South Korea's Green New Deal, Canada, Africa – green stimulus packages

Major implications for jobs, education, training and skills;

- need to develop **environmentally friendly** technologies, production processes, products, services, and business models across all sectors of the economy;
- It changes the way **traditional occupations** are performed (and taught) and creates **new occupations**;
- It creates a demand for new skills and knowledge and the need to **upskill** and **reskill** large numbers of people;
- need to increase **environmental awareness** in education and training curricula;
- requires close interaction between education and training systems and their environments to build **skills ecosystems** in which skills development goes hand in hand with economic, technological and social change.

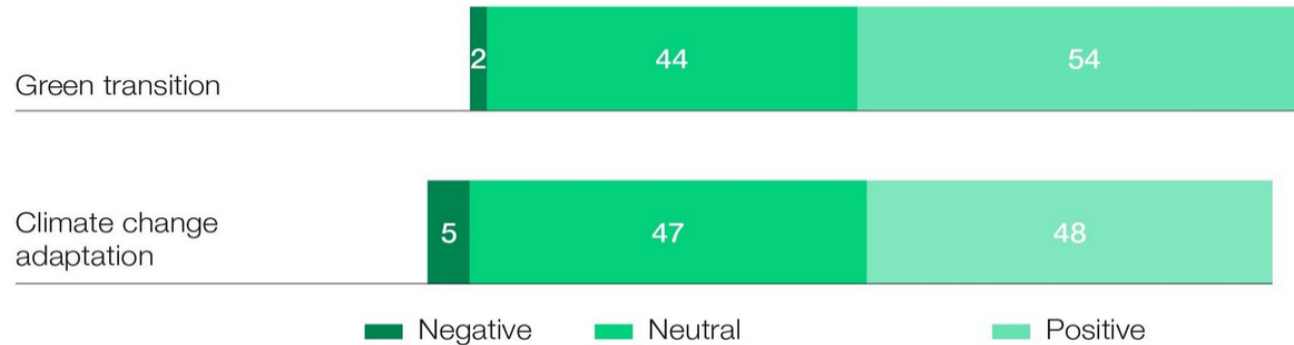
Green transition drives job growth

Future of Jobs

Green transition drives job growth



Expected impact of trends on jobs:



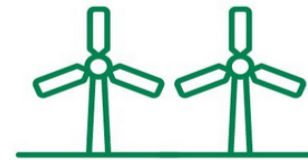
Including jobs such as



Sustainability specialist



Solar energy installation and system engineers, and



Renewable energy engineers.

Source: Future of Jobs, World Economic Forum, April 2023.

<https://www.weforum.org/agenda/2023/04/future-jobs-2023-fastest-growing-decline>

Greener jobs future

- To compensate for expected job losses, global efforts to decarbonize in response to the climate crisis are giving rise to a wealth of green jobs across sectors and industries.
- A green-recovery scenario could generate around 3.5% of additional global GDP growth and a net employment gain of 9 million new jobs each year, according to International Energy Agency data.
- The green transition could **create 30 million jobs globally in clean energy, efficiency and low-emissions technologies by 2030.**
- But while there has been continued growth in green jobs for the past four years, **reskilling and upskilling towards green skills is not keeping pace.**



<https://www.weforum.org/agenda/2023/04/future-jobs-2023-fastest-growing-decline>

03

**What is the labour market demand for -
green and digital skills?**

**Based on a data of ETF Big Data LMI
project (ex.: Egypt, Kenya)**



Green skills Demand

ETF Data – Online Job Vacancies Kenya, Egypt

Definitions



Green skills – an important area of debate and policy action and which has become a priority in research (quantitative and qualitative) and social communication. Several international organisations are working on the analysis and taxonomies related to green competences.

Cedefop defines green skills as "the knowledge, skills, values and attitudes needed to live, work and act in economies and societies that seek to reduce the impact of human activity on the environment".

Skills for the green economy consist of:

- **transversal skills**, linked to sustainable thinking and acting, relevant to all economic sectors and professions;
- **specific skills** needed to adapt or implement standards, processes and services to protect ecosystems and biodiversity and reduce energy, materials and water consumption;
- **highly specialised skills** needed to develop and implement green technologies such as renewable energy, wastewater treatment or recycling;

Skills for the green economy are also referred to as skills for green jobs, skills for the green transition or green skills.

Analysis of demand for skills: online job vacancy data

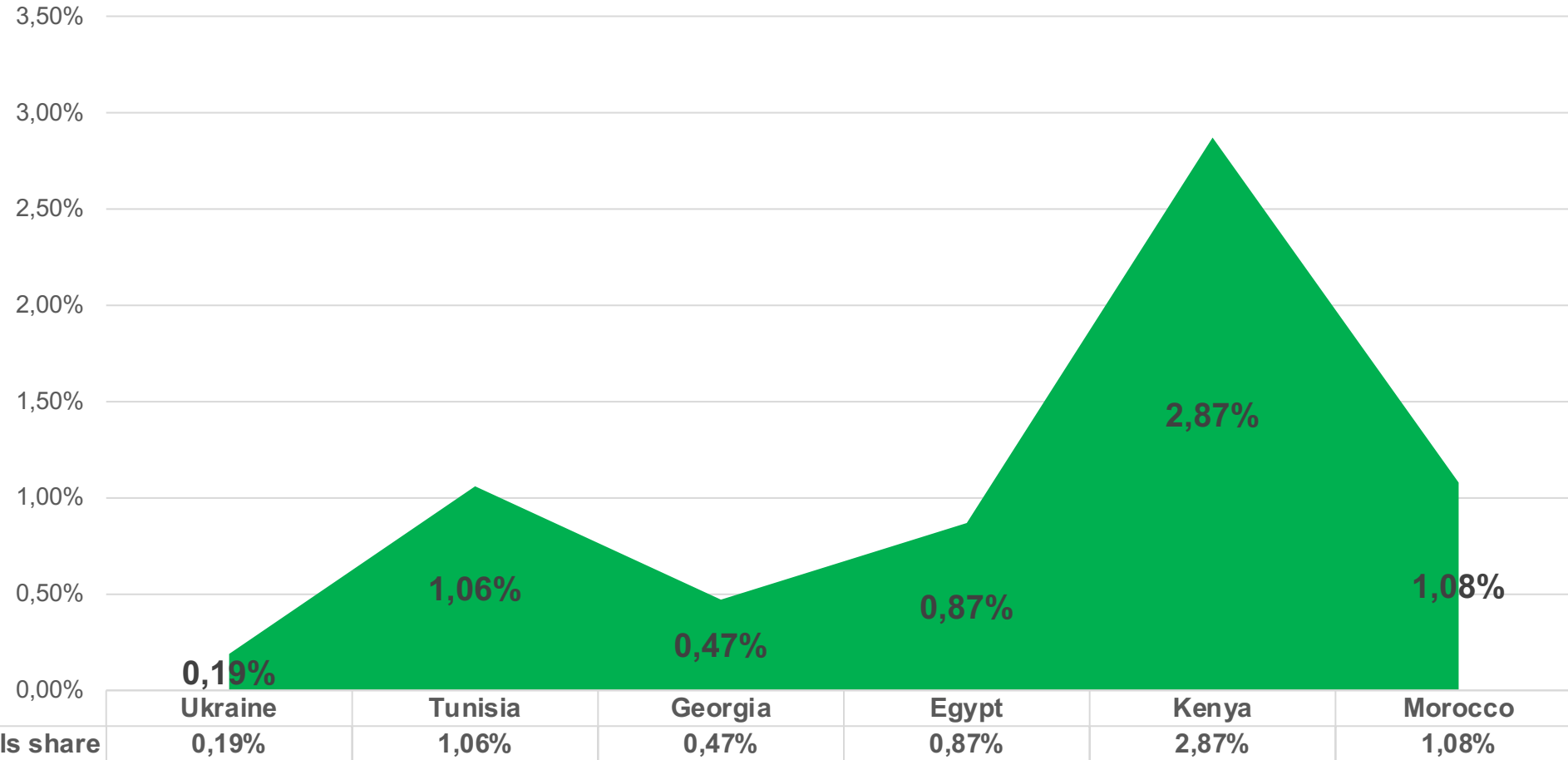
- Dashboards ETF project

[https://solutions.emsibg.com/?pc=x\\$fhADtD*cu\\$BjY9](https://solutions.emsibg.com/?pc=x$fhADtD*cu$BjY9)



ETF project: Online job vacancy – Big data for LMI

Green skills share - data updated until 31/12/2023



Green skills share = share of online job vacancies that required at least 1 green skill

Kenya: highest green skills share, Ukraine – the lowest

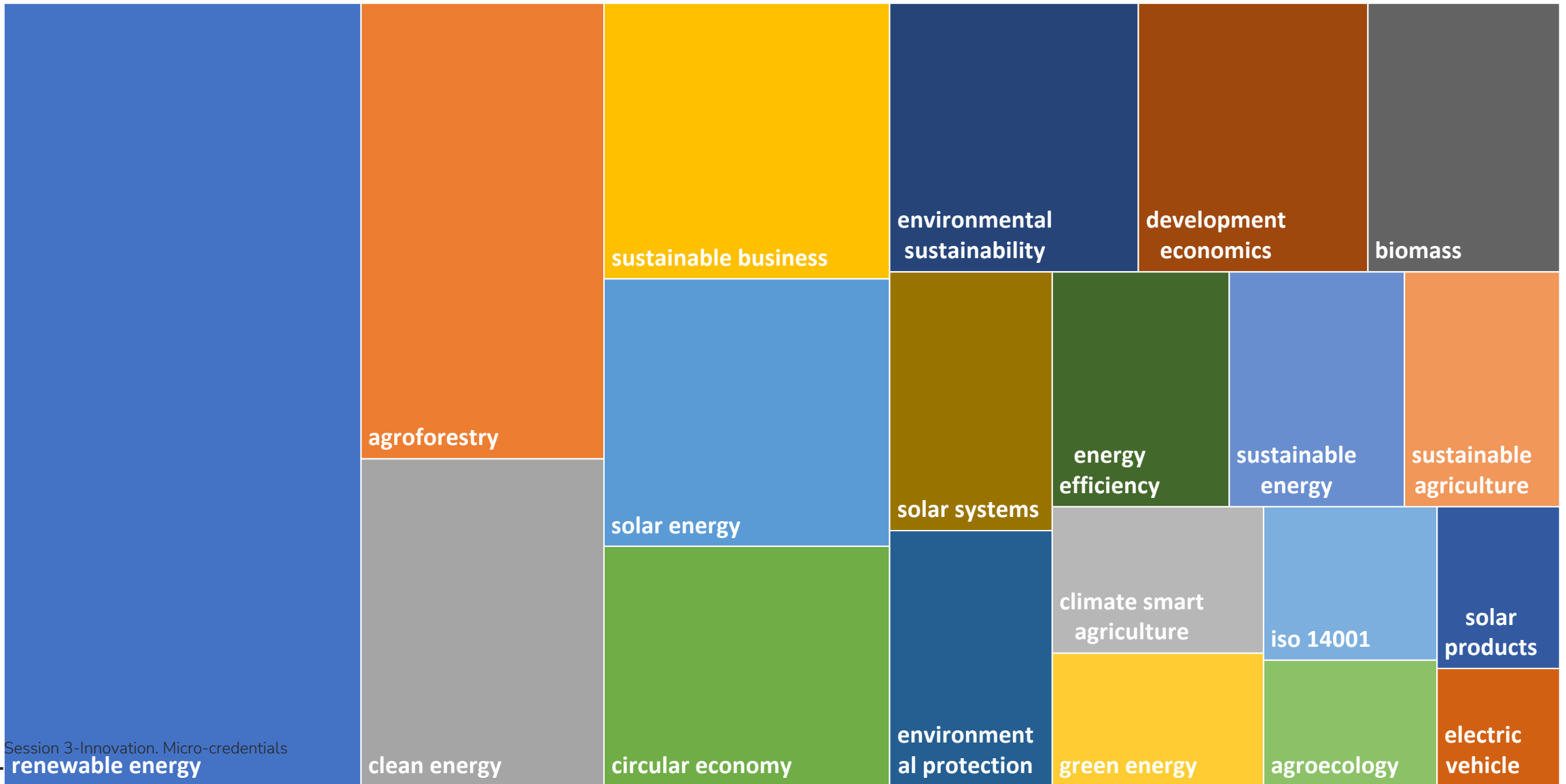
Used green skills taxonomy: ETF (225 terms)

Top 20 Green Skills Kenya

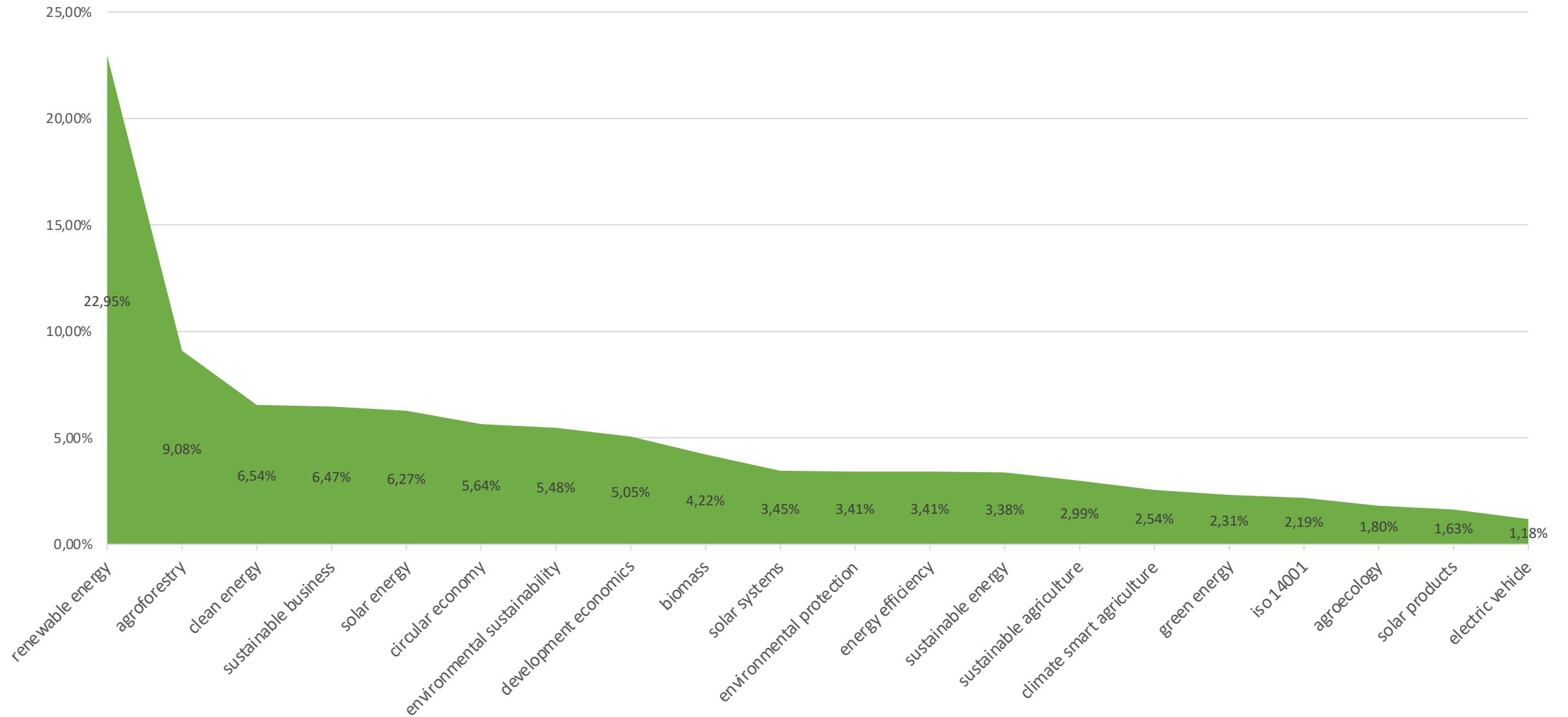
Skills / skill set	% (from 20)	Nº unique job postings
renewable energy	22,95%	2.598
agroforestry	9,08%	1.028
clean energy	6,54%	740
sustainable business	6,47%	732
solar energy	6,27%	710
circular economy	5,64%	638
environmental sustainability	5,48%	620
development economics	5,05%	572
biomass	4,22%	478
solar systems	3,45%	390
environmental protection	3,41%	386
energy efficiency	3,41%	386
sustainable energy	3,38%	382
sustainable agriculture	2,99%	338
climate smart agriculture	2,54%	288
green energy	2,31%	262
iso 14001	2,19%	248
agroecology	1,80%	204
solar products	1,63%	184
electric vehicle	1,18%	134

Top 20 green skills in OJV: Kenya

TOP 20 GREEN SKILLS KENYA - DATA COLLECTED: OCT 2022-JUL 2023

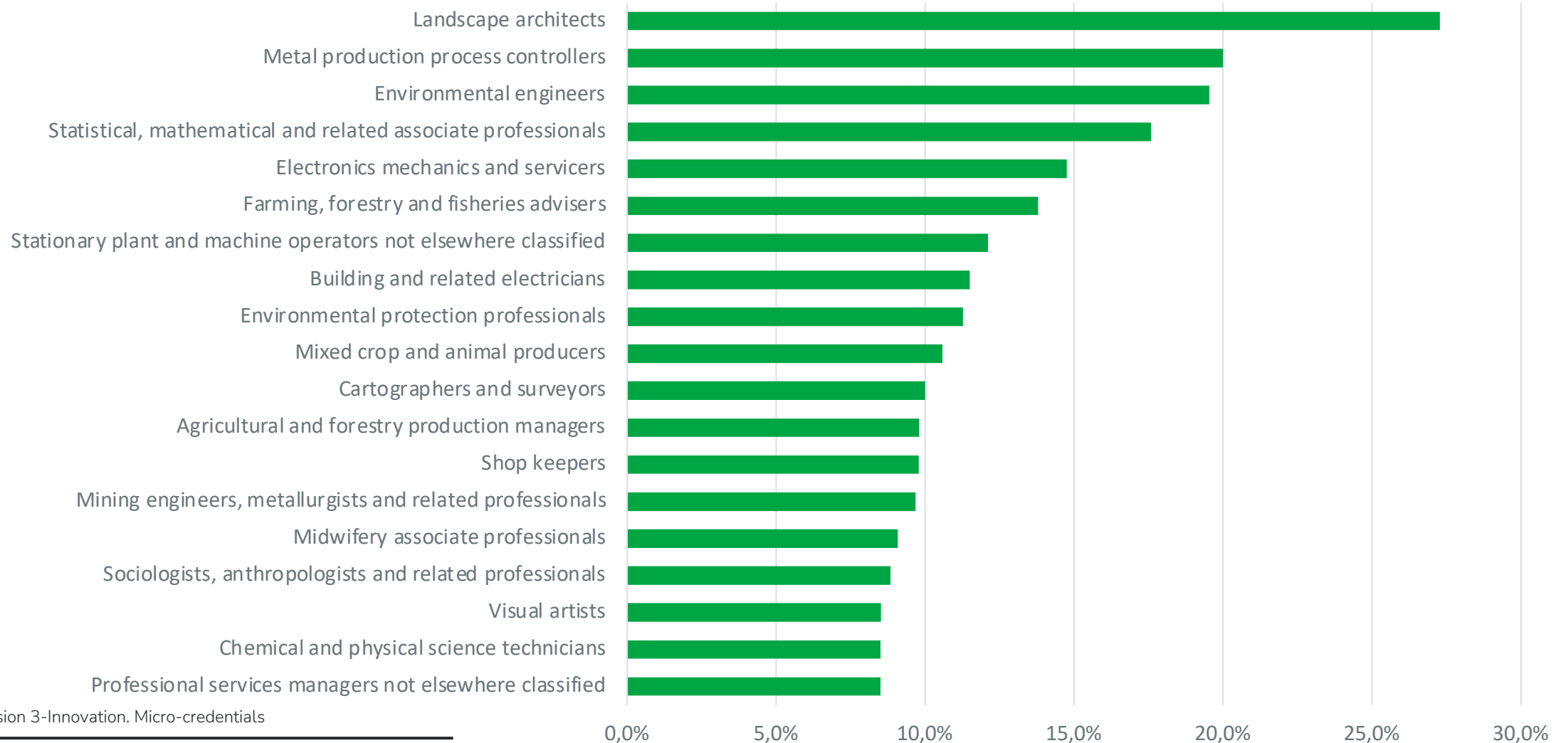


Top 20 Green Skills Kenya (2)



Kenya: green skills by occupation (share)

Kenya - Green share by occupation (data collected: Oct 22- Jul 23)



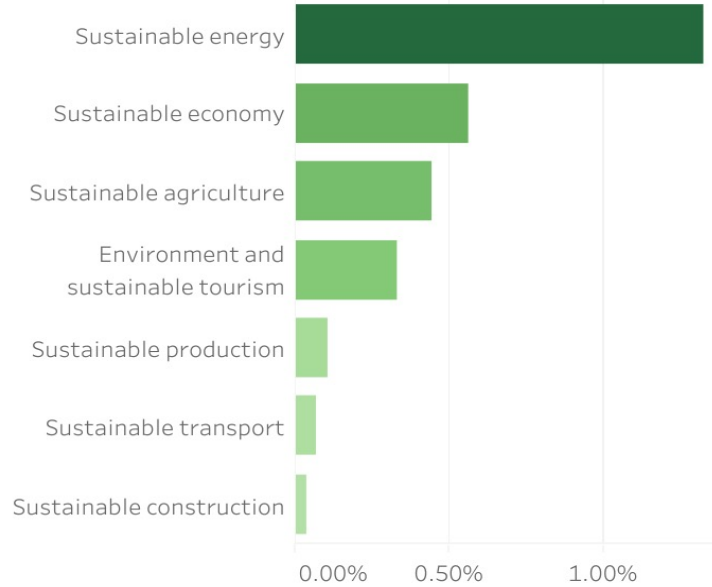
Kenya: Green skills required for selected occupations

Occupation	Green skill	Unique Job postings (Oct 22- Jul 23)
Electronics mechanics and servicers	solar panels	7
	solar energy	2
	environmental protection	2
Environmental engineers	environmental sustainability	32
	environmental protection	19
	sustainable procurement	9
	renewable energy	9
	sustainable business	7
	energy efficiency	7
	sustainable energy	5
	circular economy	4
	development economics	3
	climate smart agriculture	3
	green energy	2
	ecotourism	2
	clean energy	2
	carbon footprint reduction	2
	sustainable agriculture	1
	sustainability performance	1
	iso 14001	1
hydroponics	1	
clean technology	1	
agroforestry	1	
Metal production process controllers	iso 14001	2
Statistical, mathematical and related associate professionals	environmental protection	18
	clean energy	18
	energy efficiency	11
	green building	9
	sustainable materials	6
	sustainable building	6
	sustainable agriculture	6
	renewable energy	5
	circular economy	5
	biomass	4
	agroforestry	4
	sustainable energy	3
	hydropower	1
	biofuels	1

Green Share

2.59%

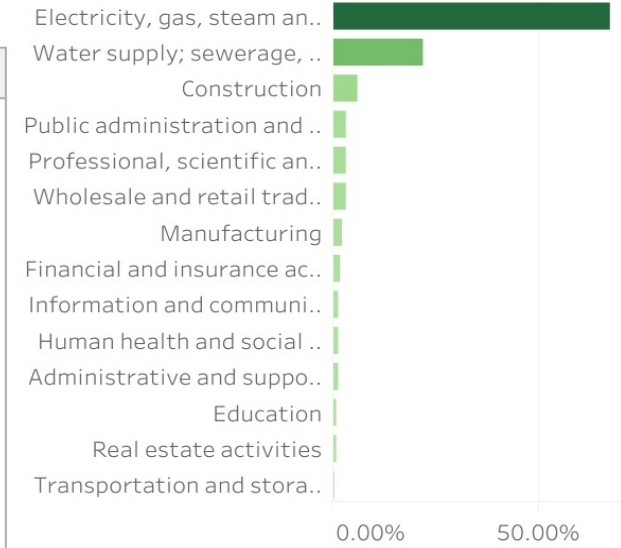
Select the Green skill family that you want to Analyze (then select it again to reset your choose)



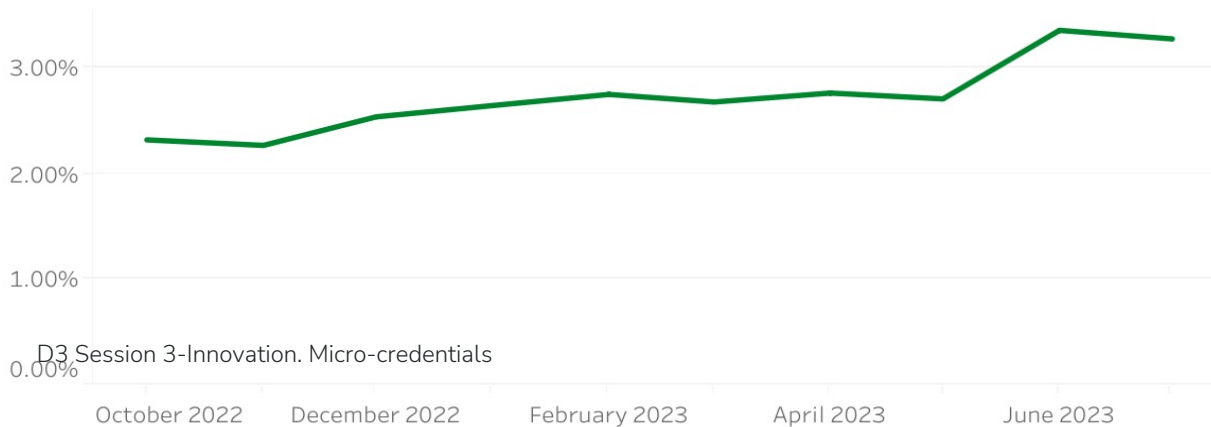
Share of green skill by occupation



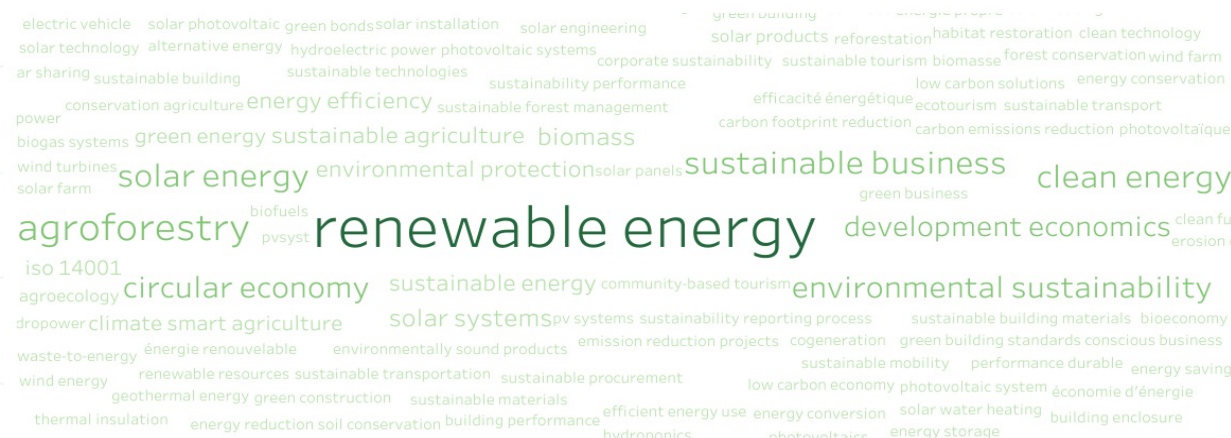
Share of green skill by industry



Share of green skill by release date



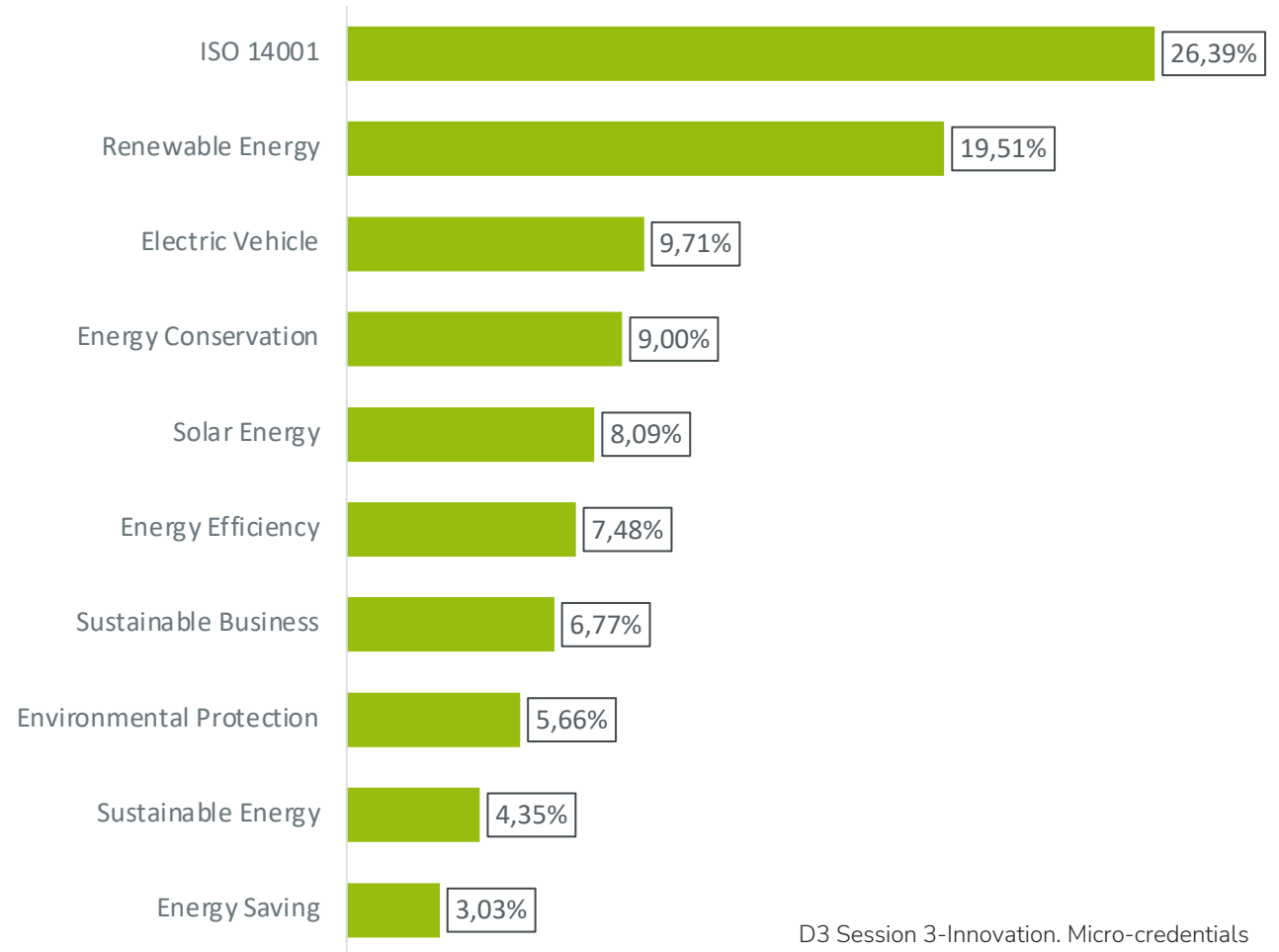
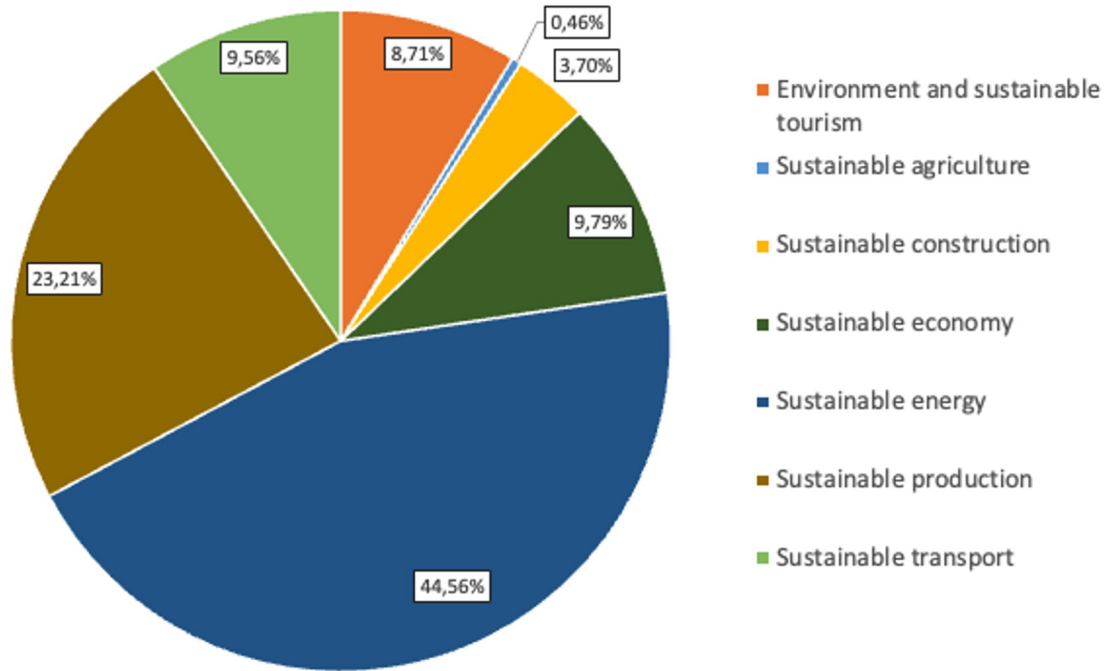
Most requested green skill



Egypt: Green Skills: TOP 10

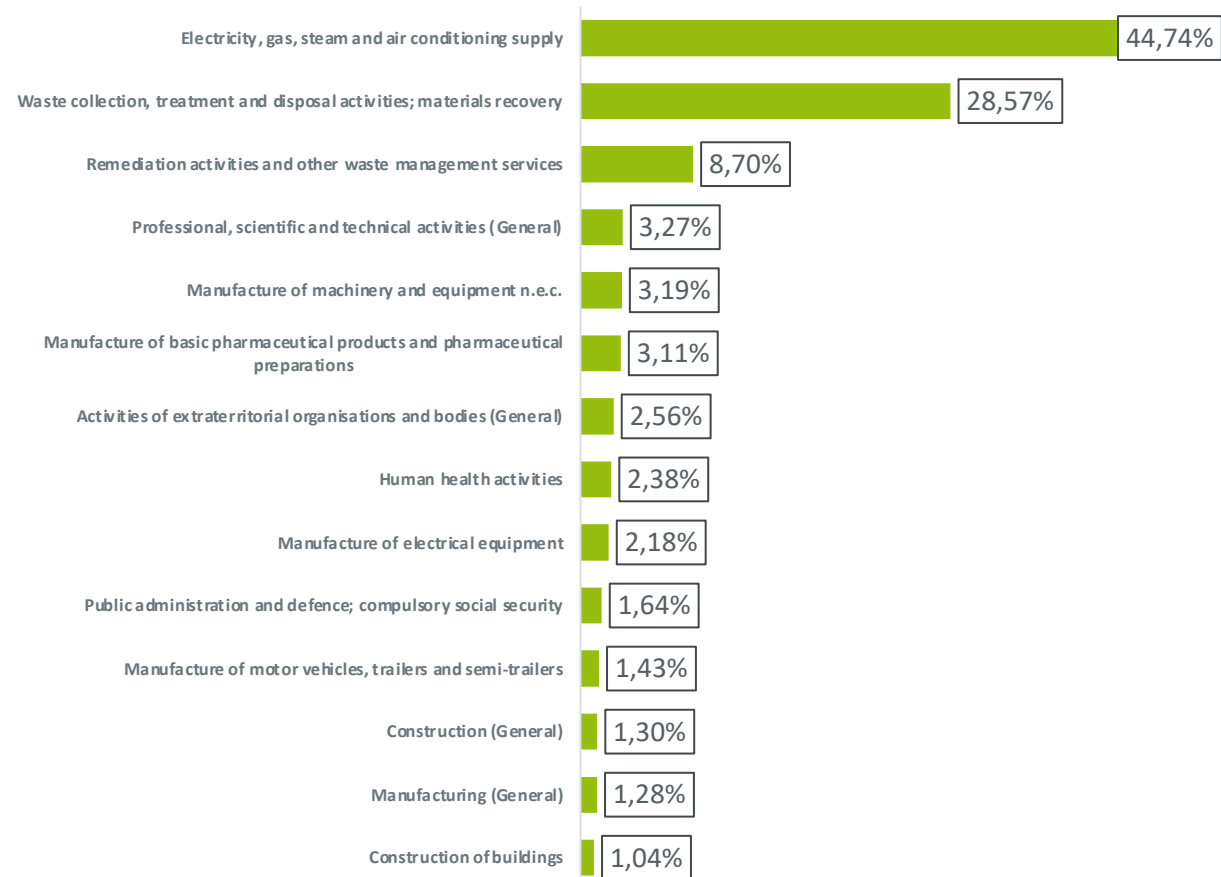
By Groups –
classification
ETF

Top Green skills

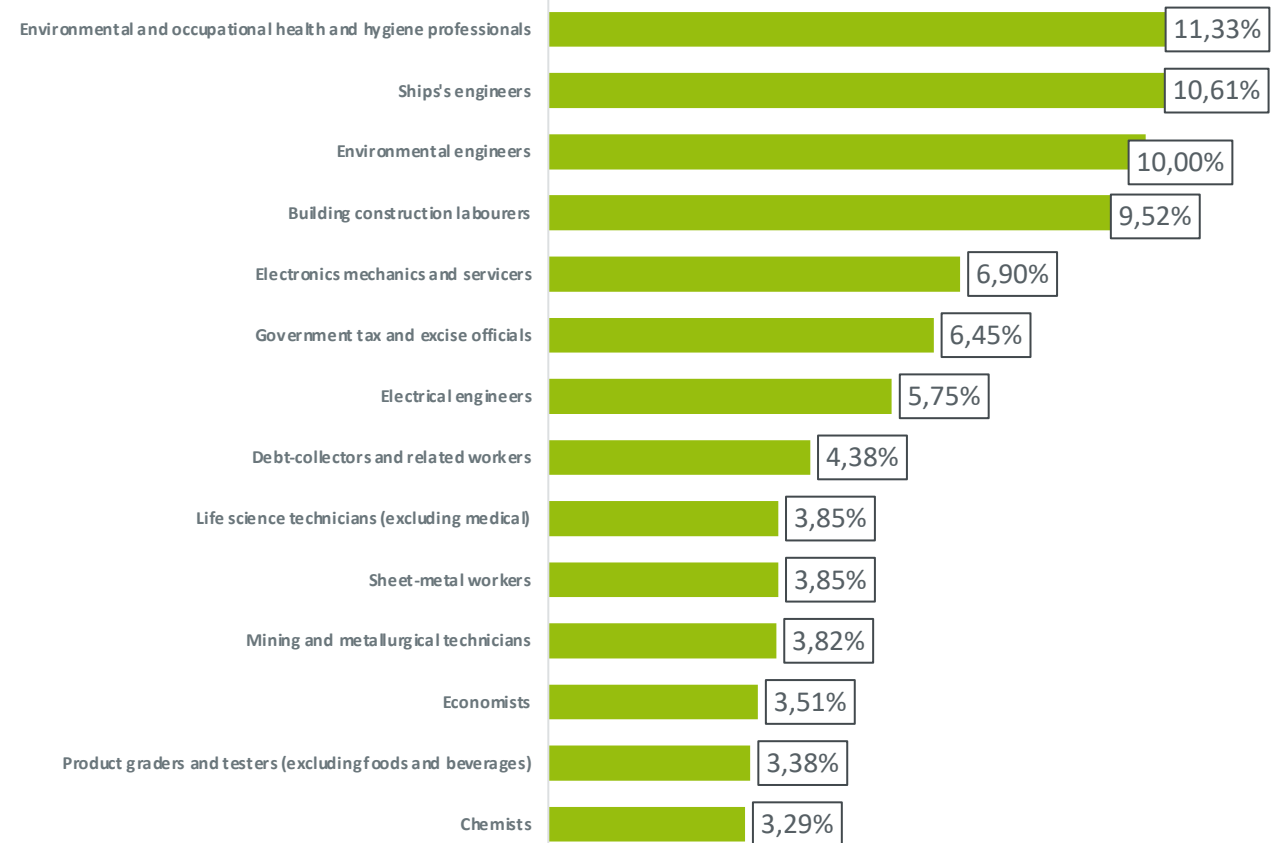


Egypt: Green skills: % by sectors and occupations

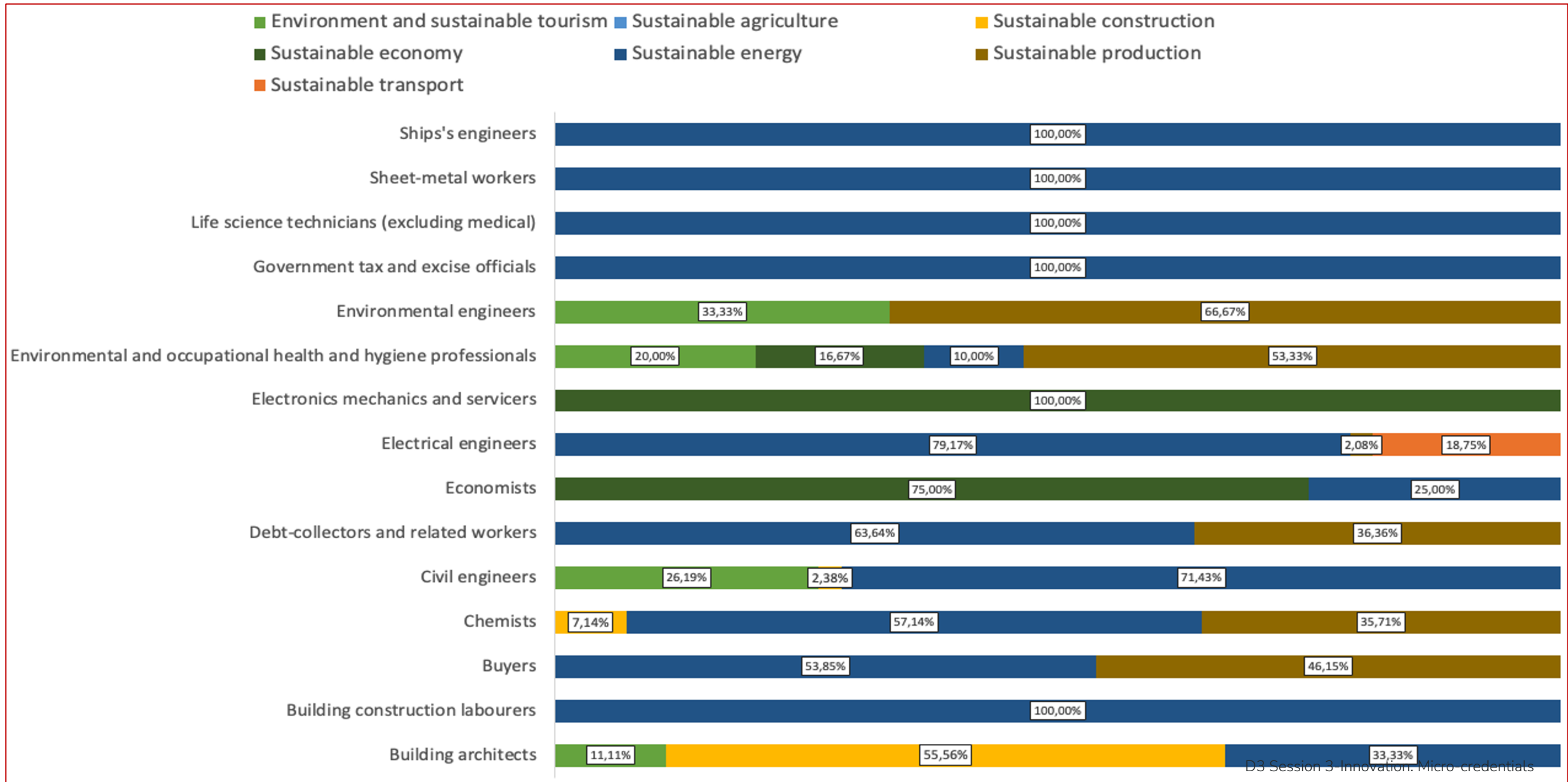
Sectors



Professions

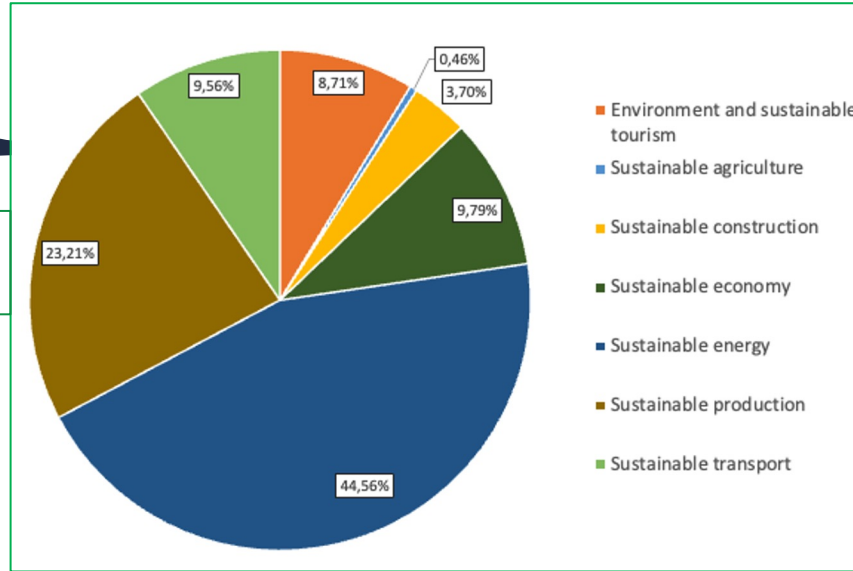


Egypt: Green skills: profiles of the greenest occupations

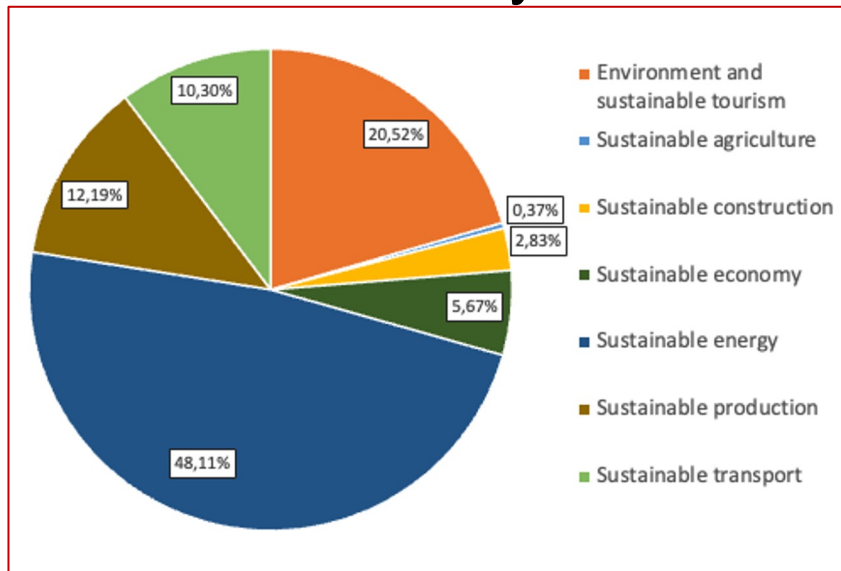


COMPARISONS: % OF GREEN SKILLS BY CATEGORIES

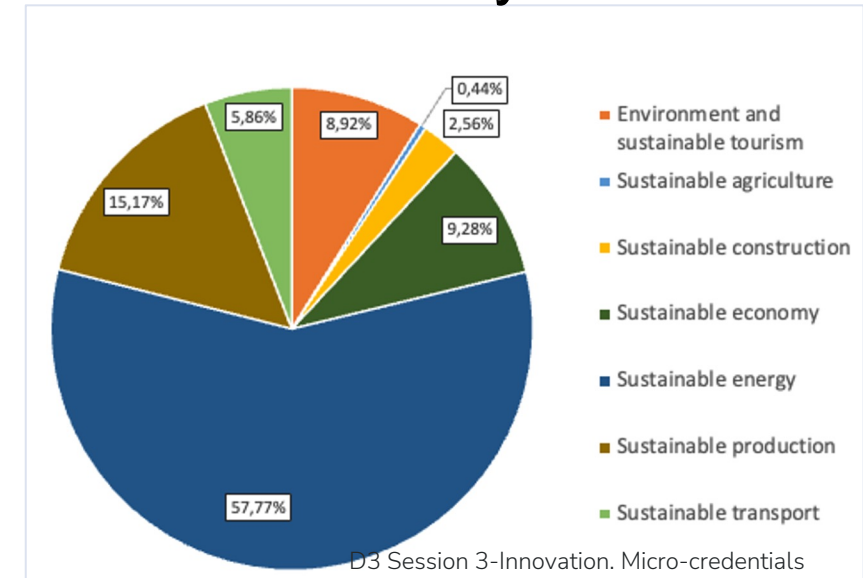
Egypt



Germany



Italy



D3 Session 3-Innovation. Micro-credentials

How about education – qualifications for green skills?

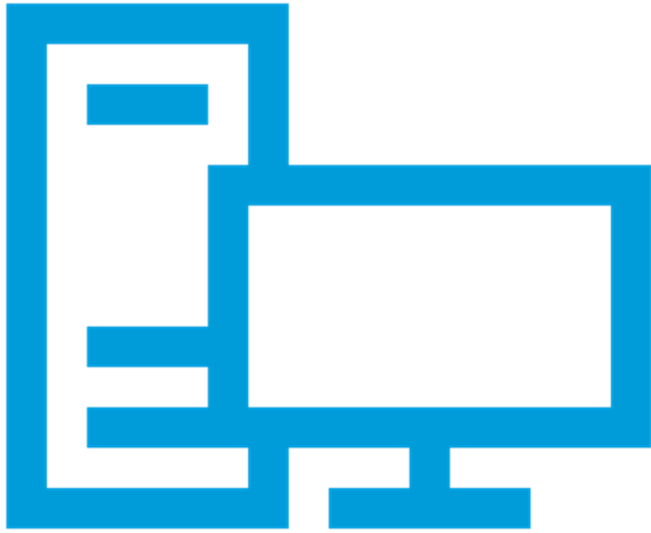
Could you share some examples of Seychelles?

How can you *Green* the NQF?

Digital skills – overview of some features of demand



Analysis based on ETF data Job Listings - Egypt

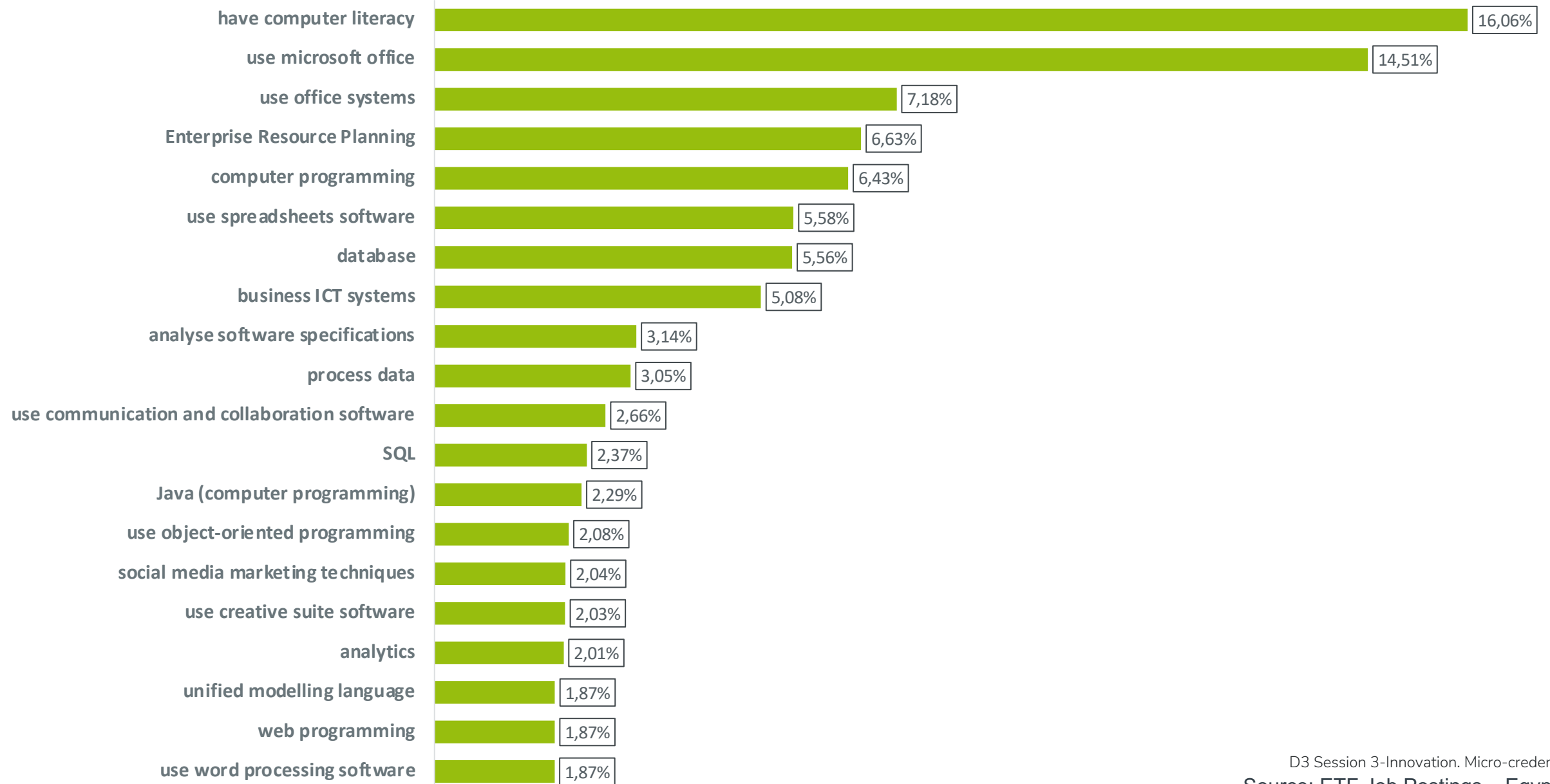


Digital skills

Ability to use digital technologies confidently, critically and responsibly and engage with them for learning, at work and for participation in society.

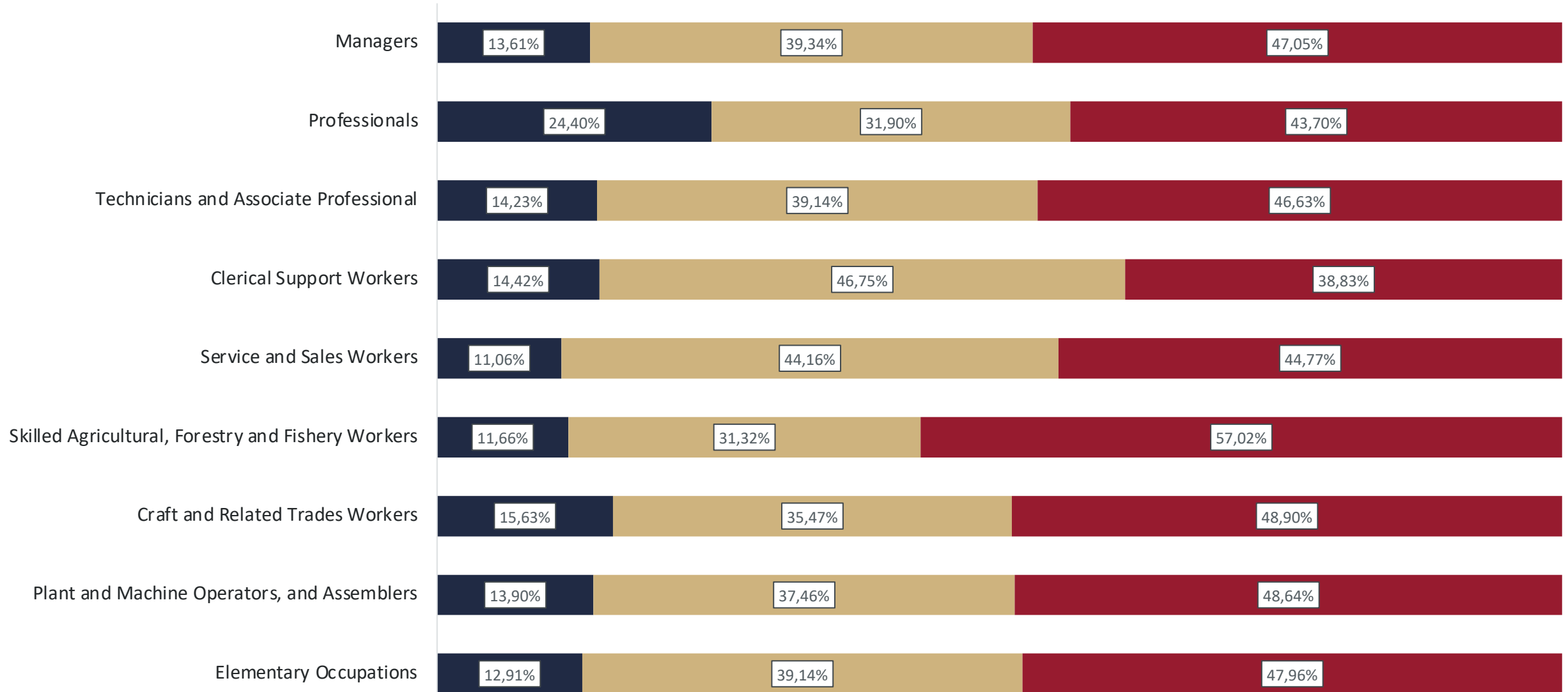
It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including coding), security (including digital wellbeing and cybersecurity-related skills), intellectual property issues, problem-solving and critical thinking.

Egypt: DIGITAL SKILLS: TOP 20



DIGITAL SKILLS: BY ISCO GROUPS (Occupations)

■ Digital skills rate ■ Soft skills rate ■ Occup-specific skills rate



DIGITAL SKILLS: IN DIGITAL AND NON-DIGITAL OCCUPATIONS

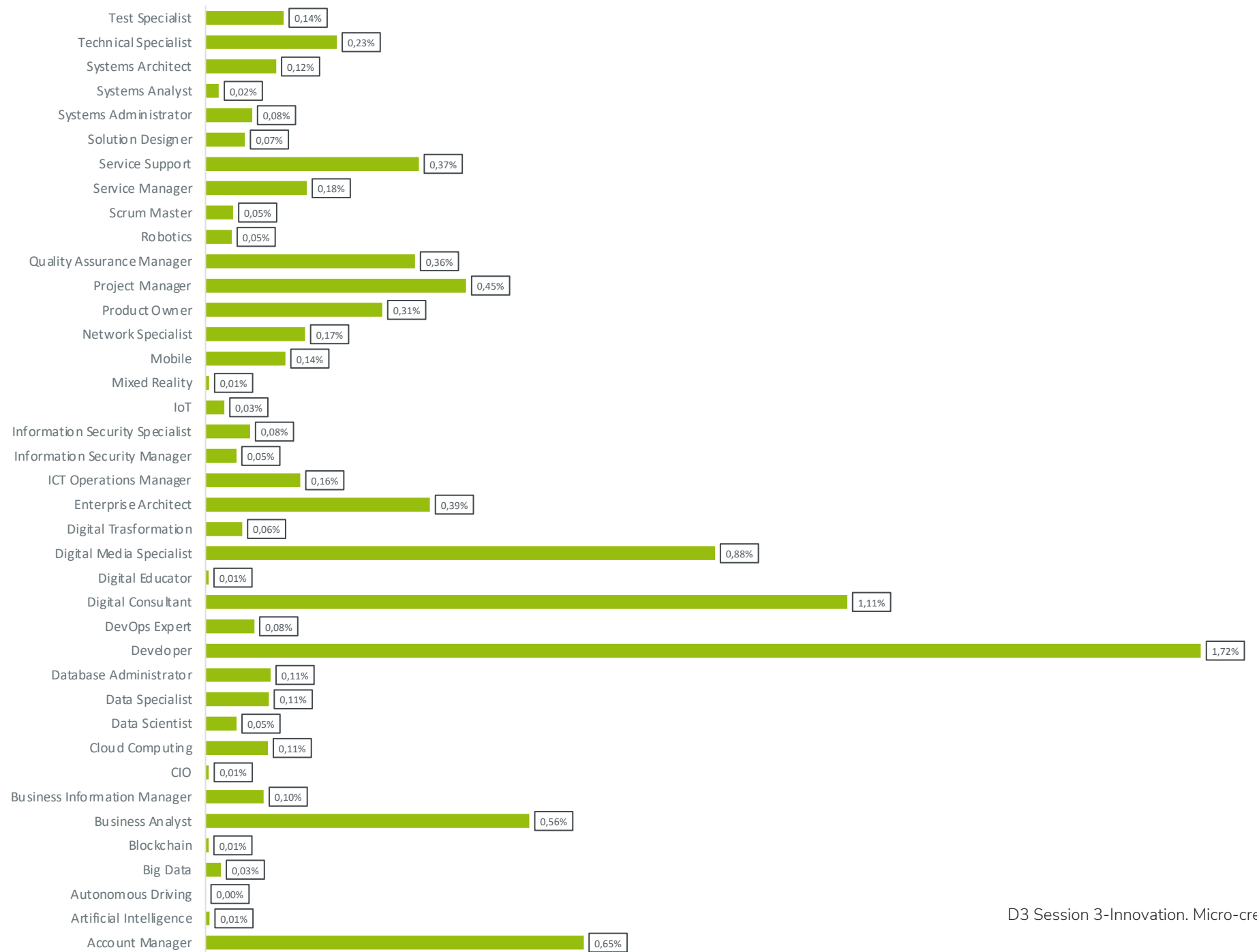
Occupation (ISCO 08)	Unique OJV 2022	Digital skills rate	Soft skills rate	Occupational-specific non digital skills rate
Database designers and administrators	158	54,00%	20,00%	26,00%
Web and multimedia developers	5418	48,00%	23,00%	29,00%
Systems administrators	1366	47,00%	25,00%	28,00%
Applications programmers	1343	44,00%	24,00%	32,00%
Software developers	14752	40,95%	26,32%	32,73%
Data entry clerks	351	40,13%	30,64%	29,23%
Mathematicians, actuaries and statisticians	174	39,08%	28,53%	32,38%
Database and network professionals	1780	38,77%	26,57%	34,66%
Computer network professionals	397	38,29%	29,08%	32,63%
Systems analysts	6593	28,64%	33,62%	37,74%
Graphic and multimedia designers	3686	25,39%	25,93%	48,69%
General office clerks	2022	21,92%	44,19%	33,89%
Environmental engineers	58	19,53%	36,15%	44,31%
Business services and administration managers	1785	15,78%	40,38%	43,84%
Personnel and careers professionals	4122	15,77%	39,97%	44,26%
Accounting and bookkeeping clerks	240	11,88%	33,99%	54,13%
Handicraft workers in textile, leather and related materials	2022	19,75%	31,85%	48,41%

ICT profiles

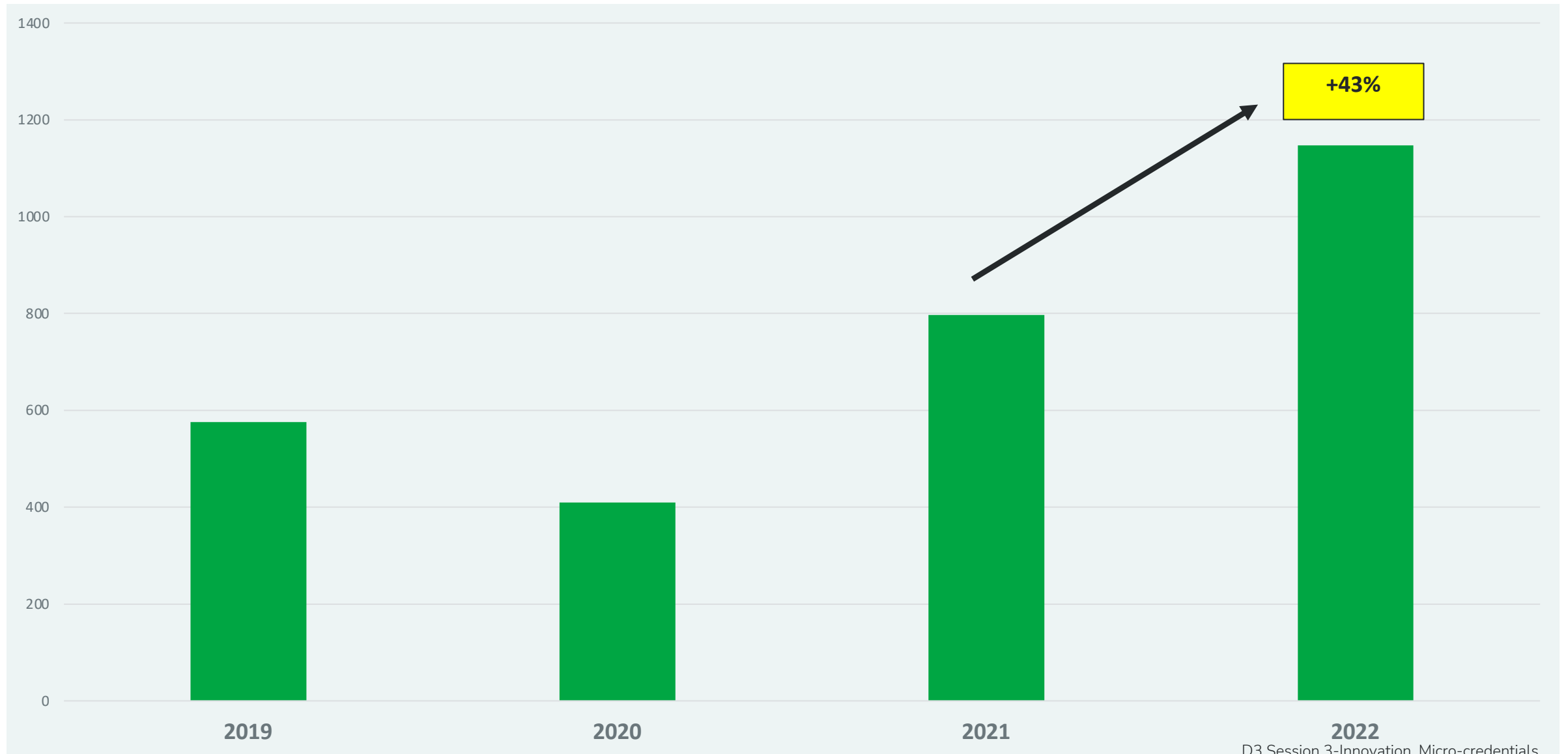
CEN-SENELEC

(UNIQUE OJV)

Source: ETF Job Postings – Egypt 2022

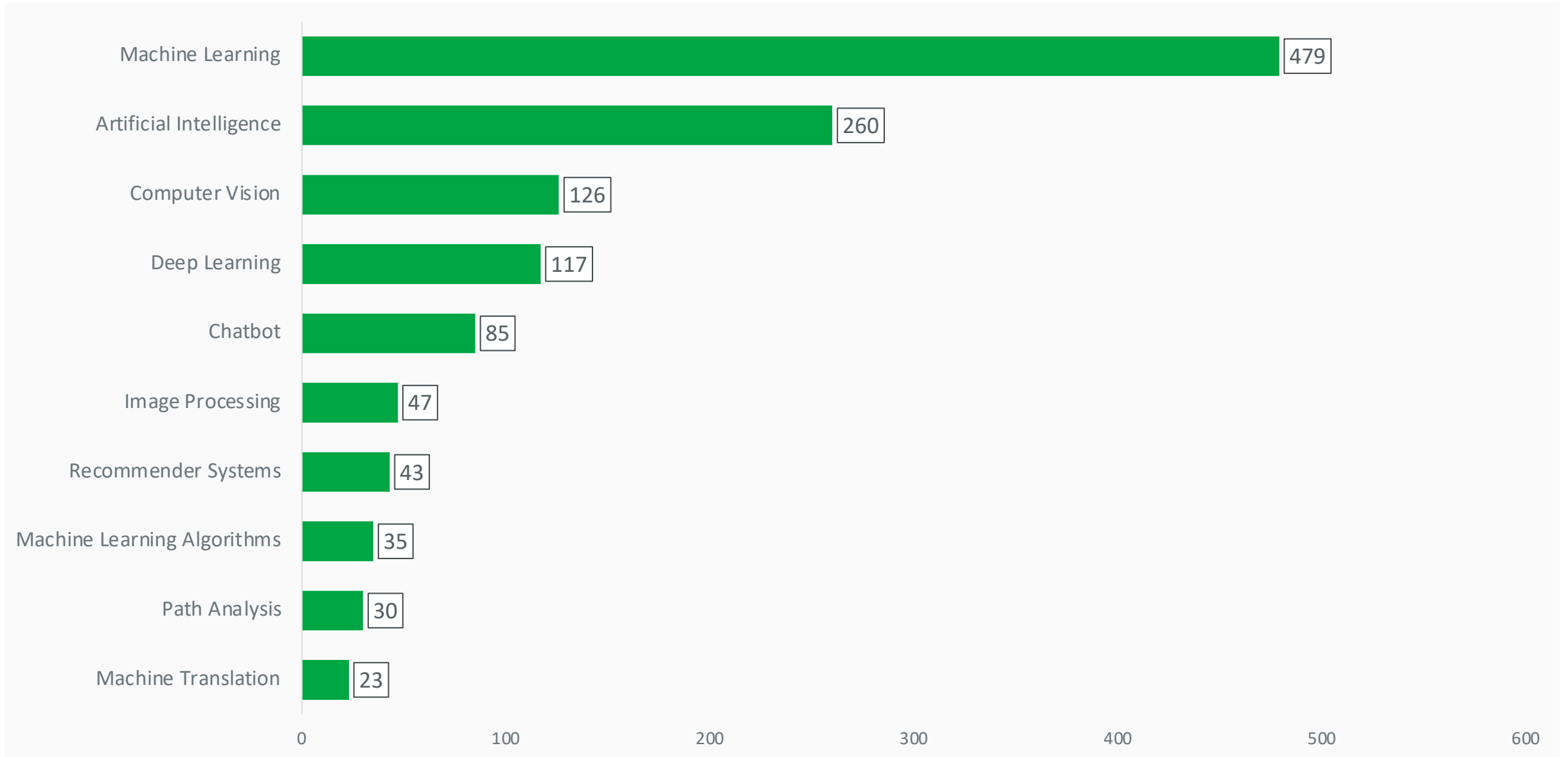


Demand for AI skills: growth (time for AI literacy)?



D3 Session 3-Innovation. Micro-credentials

TOP AI skills: from online job vacancies





What are the top Digital Skills on demand?

Are education and training programmes / LLL - adjusted / reviewed to meet demand?

How can the Ecosystem NQF-RPL-CATS address the skills gaps?

04

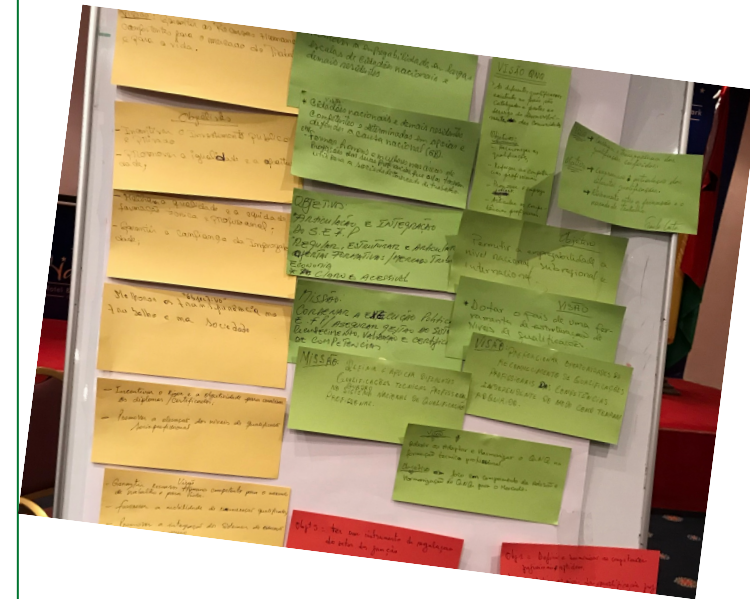
Micro-credentials

The number and diversity of micro-credential offerings has expanded substantially in recent years, accelerated by the onset of the COVID-19 pandemic.

A large part of all employees will need reskilling and the urgency of getting people back to work gives new momentum to “micro-credentials”, which hold **promises and challenges**.

The **common understanding** on the role and potentialities of micro-credentials in the era of digital learning and economy is central to the debate. Countries, regional communities and international organisations globally are deploying initiatives to clarify the state-of-play and develop policies and measures to better contextualise micro-credentials. Ex.: UNESCO, EU, Australia, African countries (Erasmus+ project, ACQF)

- Existing definitions (from OECD, European Commission, UNESCO, Australian Government) point to key characteristics of micro-credentials:
 - ✓ Referring to learning over a limited time and/or in a specific area
 - ✓ May form part of or add to formal qualifications
 - ✓ Potentially 'stackable' over time, adding to individual learning careers
 - ✓ Given their limited size and focus, more flexible than traditional qualifications
 - ✓ Based on assessed learning
 - ✓ Frequently delivered in a digital form.



Global debate towards common definition of micro-credentials (UNESCO and partners)

- In 2019-2021 UNESCO promoted a global debate towards a common definition of micro-credentials, based on extensive expert consultation, analysis of definitions from 15 countries and literature review. The key proposals and underpinning reflection were discussed in September at an international conference (UNESCO, 2021). **The author of the report (Oliver, 2021) concludes “When it comes to micro-credentials, micro is the distinguishing feature, but to be accepted and trusted, micro-credentials must be seen to bear the quality hallmarks of credentials”.**
- Credentials verify, validate, confirm, or corroborate a person’s learning achievements, knowledge and preparedness for performing tasks. Credentials are diverse with regard to their scope, status and purpose.
- A large subset of credentials can be referred to as **macro-credentials**: degrees, diplomas, certificates and licences, often awarded by accredited, recognised or regulated educational and other institutions or organisations. They indicate learning achievement of a broad body of knowledge, transferable skills or technical proficiency and may take a number of years to complete.
 - Purposes: personal or general educational advancement; qualifying to practice a particular profession or to follow a particular career path.

Micro-credentials: proposed definition

Another large **subset of credentials** can be referred to as **micro-credentials: focused on a specific set of learning outcomes in a narrow field of learning and achieved over a shorter period of time.**

Micro-credentials are offered by commercial entities, private providers and professional bodies, traditional education and training providers, community organisations and other types of organisations.

While many micro-credentials represent the outcomes of more traditional learning experiences, others verify demonstration of achievements acquired elsewhere, such as in the workplace, through volunteering, or through personal interest learning. Micro-credentials are often promoted as an efficient way to upskill workers across the lifespan.

- **The proposed definition (Oliver, 2021) states that a micro-credential:**

1. Is a record of focused learning achievement verifying what the learner knows, understands or can do;
2. Includes assessment based on clearly defined standards and is awarded by a trusted provider;
3. Has stand-alone value and may also contribute to or complement other micro-credentials or macro-credentials, including through recognition of prior learning; and
4. Meets the standards required by relevant quality assurance.

Potentialities of micro-credentials

Micro-credentials are one of the **big movements** in education and training.

The should be at **service of Big Ideas**, rather than being considered the Big Idea...

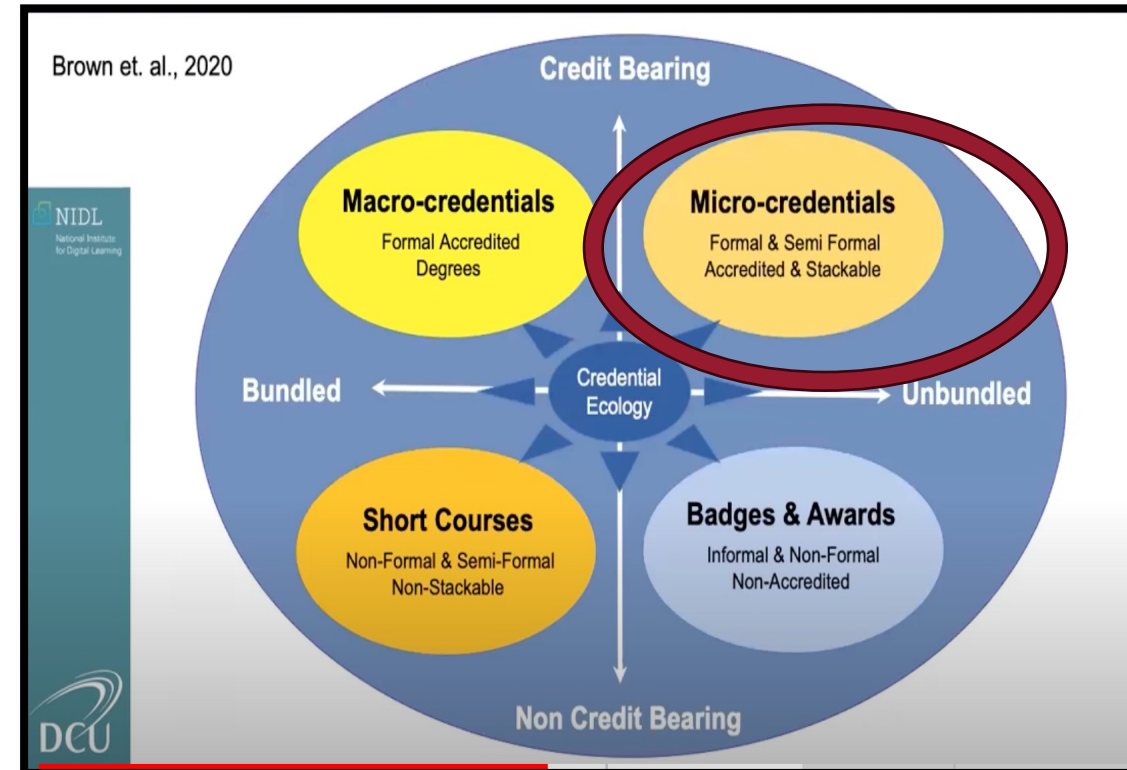
Micro-credentials can help **certify the outcomes of small, tailored learning experiences**.

They make possible the **targeted, flexible acquisition of knowledge, skills and competences** to meet new and emerging needs in society and the labour market and make it possible for individuals to fill the skill gaps they need to succeed in a fast-changing environment, while not replacing traditional qualifications.

They can, where appropriate, complement existing qualifications, providing added value while not undermining the core principle of full degree programmes in initial education and training.

Micro-credentials could be designed and issued by a variety of providers in different **learning settings** (formal, non-formal and informal learning settings)

Credential ecology: quadrants



[Access the video](#)

Mike Brown, MC Observatory

Micro-credentials

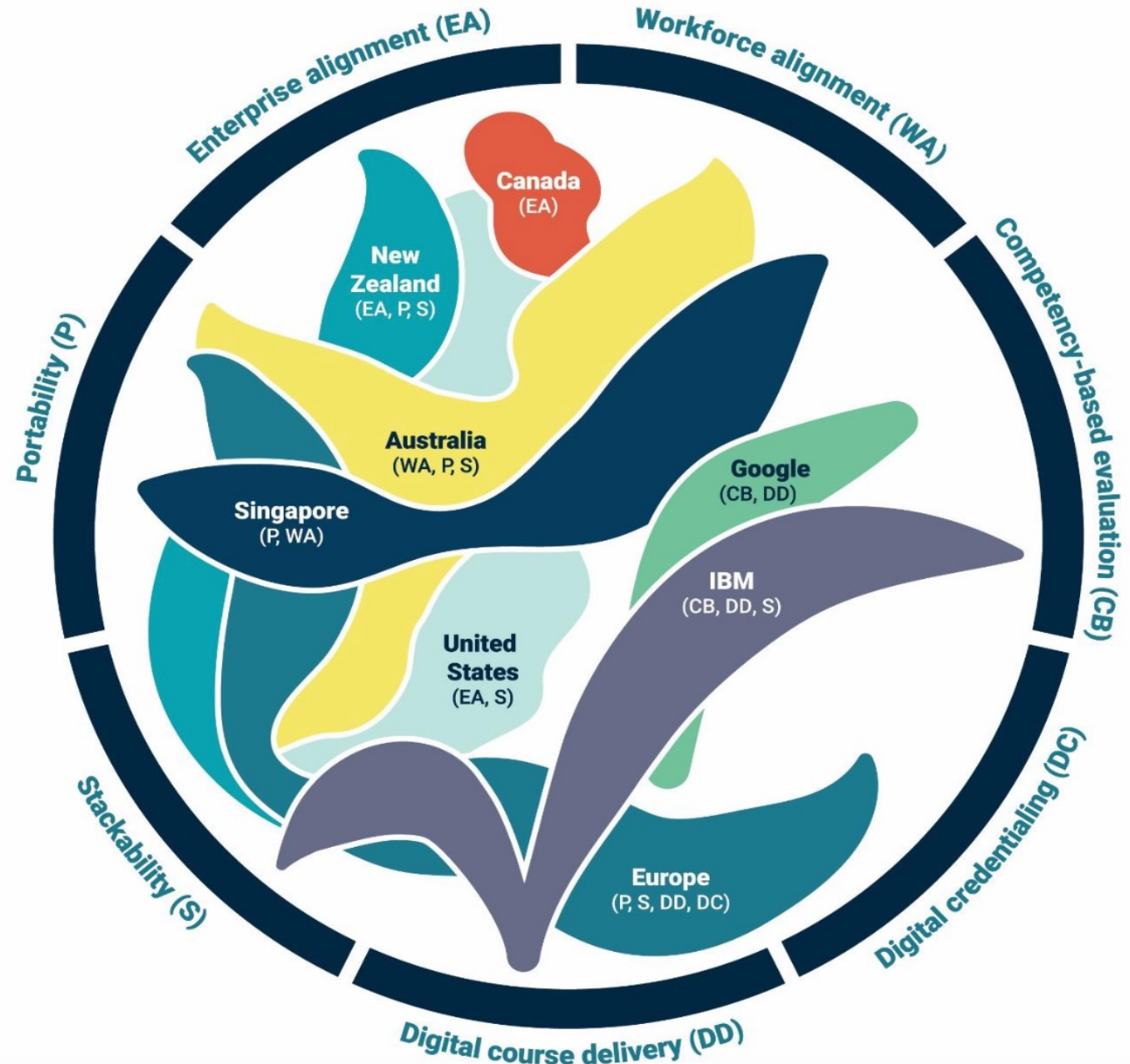
Stylized version: how different micro-credential regimes aim to incorporate varying sub-sets of the **seven qualities**.

- **Note: Stackability is a common feature for US, NZ, A, EU, IBM**

Approaches to Stackability of Micro-credentials Options for Ontario, Prepared for Ontario Council on Articulation and Transfer, March 2023

https://www.oncat.ca/sites/default/files/media-files/r2246_micro-credentials_final_report_21-3-23.pdf

The Seven Qualities of Microcredentials



OECD: Contexts in which Micro-credentials are expected to play a role

 Upskilling and reskilling

 Employability

 Lifelong Learning

 More flexible, learner-centred education

 Access to and completion of education and training

 Student international mobility

 Social inclusion

 Active citizenship and well-being

OECD, 2023. Micro-credentials for Lifelong Learning and Employability: Uses and Possibilities: <https://www.oecd-ilibrary.org/docserver/9c4b7b68-en.pdf?expires=1683402111&id=id&accname=guest&checksum=EC532C674B9D2AB9D69D7DB18202E488>

Way forward for governments

- Micro-credentials do not deliver on their potential automatically.
- For micro-credentials to play a role in enhancing learners' employability, facilitating access to higher education, improving degree completion, and promoting social inclusion, **policymakers need to make interventions to steer and support learners and providers.**

1

Micro-credential initiatives need clarity about their purpose and target population if they are to be effective in achieving their goals

2

Funding support for micro-credential learners and providers should be sustainable and ensure micro-credentials remain accessible to all

3

Achieving the full potential of micro-credentials will require changes to quality assurance and academic recognition policies

4

Information provision for learners needs to go beyond the development of an online information portal to reach a wider population

5

Public policies can encourage collaborations between education and training providers and industries in micro-credential development and delivery

OECD, 2023. Micro-credentials for Lifelong Learning and Employability: Uses and Possibilities: <https://www.oecd-ilibrary.org/docserver/9c4b7b68-en.pdf?expires=1683402111&id=id&accname=guest&checksum=EC532C674B9D2AB9D69D7DB18202E488>

Australia National Micro-Credential framework

The Australian Government (2021) adopted the [National Micro-Credentials Framework](#), which uses the following definition:

- A micro-credential is a certification of assessed learning or competency, with a minimum volume of learning of one hour and less than an Australian Qualifications Framework (AQF) award qualification, that is additional, alternate, complementary to or a component part of an AQF award qualification.

What can constitute a micro-credential?

- TVET skill sets or units of competency.
- Modularised, assessed components of existing higher education curriculum or subjects.
- Industry learning that is assessed (such as vendor certifications, professional learning).
- Other forms of assessed learning or competencies (e.g. Vocational Education/Higher Education /Industry courses not currently accredited by a regulatory authority, and those by other providers).

What does not constitute a micro-credential?

- Unassessed learning or courses, including work-integrated learning without an assessment.
- Badges which are obtained through participation only (i.e. without an assessment).
- Formal qualifications within the AQF and macro-credentials, including diplomas, certificates and master's degrees.

Australia: National Micro-credentials Marketplace

- <https://www.microcredseeker.edu.au/>
 - **Microcred Seeker: “The new way to get ahead”**
 - Goal: Seek, explore and compare courses (tertiary education and training providers)
- Course levels – according to Dreyfus model:
 - ✓ Novice
 - ✓ Advanced beginner
 - ✓ Competent
 - ✓ Proficient
 - ✓ Expert

3 clusters of micro-credentials

Skill Credential	Learning Unit	Short Learning Programmes
1-25 hours of learning	25-150 hours of learning	150-1500 hours of learning Typically consists of more than one learning unit
Awarded within the context of non-formal learning	Awarded within the context of formal learning and include options for assessment	Awarded within the context of formal learning and include options for assessment
Not explicitly quality assured by external QA	Often explicitly quality assured by external QA	Always explicitly quality assured by external QA
Linked to the acquisition of a specific competence	Linked to the acquisition of a set of learning outcomes	Linked to specific career progression goals
		Can be mapped to qualification frameworks, either as 'partial qualifications' or as a special category of micro-qualifications



Integrate micro-credentials into national and regional qualifications frameworks.

[The NQFs aim to] make qualifications easier to understand and compare. The NQFs classify qualifications by level, based on learning outcomes - that is, what the holder of a certificate or diploma is expected to know, understand, and be able to do. This classification reflects the content and profile of qualifications.

Source: [Cedefop \(2022\)](#).

Two approaches for mapping micro-credentials to existing NQFs:

- A **new micro-credential qualification type** may be established under the NQF.
- A micro-credential may be **outlined as a subunit** of an existing qualification on the NQF.

<https://www.nzqa.govt.nz/nzqf/search/microcredentials.do>



Final version for signatures for the purposes of section 452 of the Education and Training Act 2020

NZQA Board: Date: 28 Nov 2022

Minister of Education: *CA* Date: 15/12/22

Micro-credential Approval and Accreditation Rules 2022

1. **Authority**
 - 1.1 These Rules are made under section 452 of the Education and Training Act 2020.
2. **Commencement**
 - 2.1 These Rules commence on the 28th day after the date of approval by the Minister under section 452(5) of the Education and Training Act 2020.

421 micro-credentials in online register. With NQF level (3 to 8). Credits: 5-40...

Register of NZQA-approved Micro-credentials

Keyword

Developer name or Education Organisation number

Search

421 results found. Displaying page 1 of 3.

Next Page >>

Please refine your search, if required.

Title	Level	Credits	Developer	Approval Date	Review Date	
Core Construction of Forestry Roads (Micro-Credential)	3	40	Muka Tangata - People, Food and Fibre Workforce Development Council	01/2024	30/12/2026	⏪
ADAS (Trainee) Offshore ROV Pilot (Micro-credential)	5	20	Omne Marine Training Centre Limited	08/2022	02/08/2024	⏪
ADAS Diver Medical Technician (Offshore) (Micro-credential)	5	10	Omne Marine Training Centre Limited	07/2022	02/08/2024	⏪
ADAS Diver Medical Technician (Onshore) (Micro-credential)	5	10	Omne Marine Training Centre Limited	07/2022	30/10/2025	⏪
ADAS Diver Medical Technician (Refresher) (Micro-credential)	5	5	Omne Marine Training Centre Limited	08/2022	02/08/2024	⏪
ADAS Offshore Supervisor Trainee (Air) (Micro-credential)	6	6	Omne Marine Training Centre Limited	08/2022	02/08/2024	⏪
ADAS Onshore ROV Pilot (Micro-credential)	4	29	Omne Marine Training Centre Limited	08/2022	02/08/2024	⏪

Example 1: "Excavator Operator" micro-credential – NZQA register

Excavator Operator (Micro-credential)	3	29	Besafe Training Limited	22/09/2023	▼
<p>Aim</p> <p>The aim of this micro-credential is to train skilled operators to operate and manage hydraulic excavators on construction sites, so that they are able to place materials with minimal spillage, stock-pile and other related activities in accordance with company and industry standards including health and safety legislation.</p> <p>This micro-credential targets excavators' operators who are employed with no formal training or qualification. It will also enable learners to meet the Construct Safe Tier 2 Health and Safety Competency Test for excavators.</p> <p>Learners will be assessed against unit standard 17310 and must complete an "WTR" endorsement training (unit standards 16701, 16702, 16703) that is pre-requisite for operating excavator to successfully graduate from this micro-credential.</p> <p>Outcome</p> <ul style="list-style-type: none"> Operate a special-type vehicle safely and legally by obtaining an W, T or R Licence endorsement Apply excavation health and safety regulations in accordance with company and job requirements Perform site and excavator checks Operate excavator to load, unload, stock-pile, strip, and trim materials Perform special lifting and post-operational procedures <p>Education Organisations that can deliver this Micro-credential</p> <p>Besafe Training Limited</p>					

Example 2: Cybersecurity for risk and security management

Cybersecurity for Risk and Security Management (Micro-credential)	7	30	New Zealand School of Education Limited	10/2023	29/09/2025	
--	---	----	---	---------	------------	---

Aim

This micro-credential provides graduates within New Zealand and overseas with expertise in information security and risk management. Its relevance spans various stakeholders, enhancing career prospects for learners, empowering Māori communities in digital safety, aiding industries and employers with data protection, meeting the demand for specialists in professions, and bolstering security awareness in communities.

Graduates will be able to demonstrate skills in governance, risk management, compliance, and security program development, preparing them to identify and mitigate risks while aligning security with organisational goals. This micro-credential serves as a gateway to advanced internationally recognised certifications such as ISACA CISM and CRISC. Culturally, it promotes diversity, opening cybersecurity roles for Māori learners, while contributing to community well-being and New Zealand's cybersecurity objectives.

Outcome

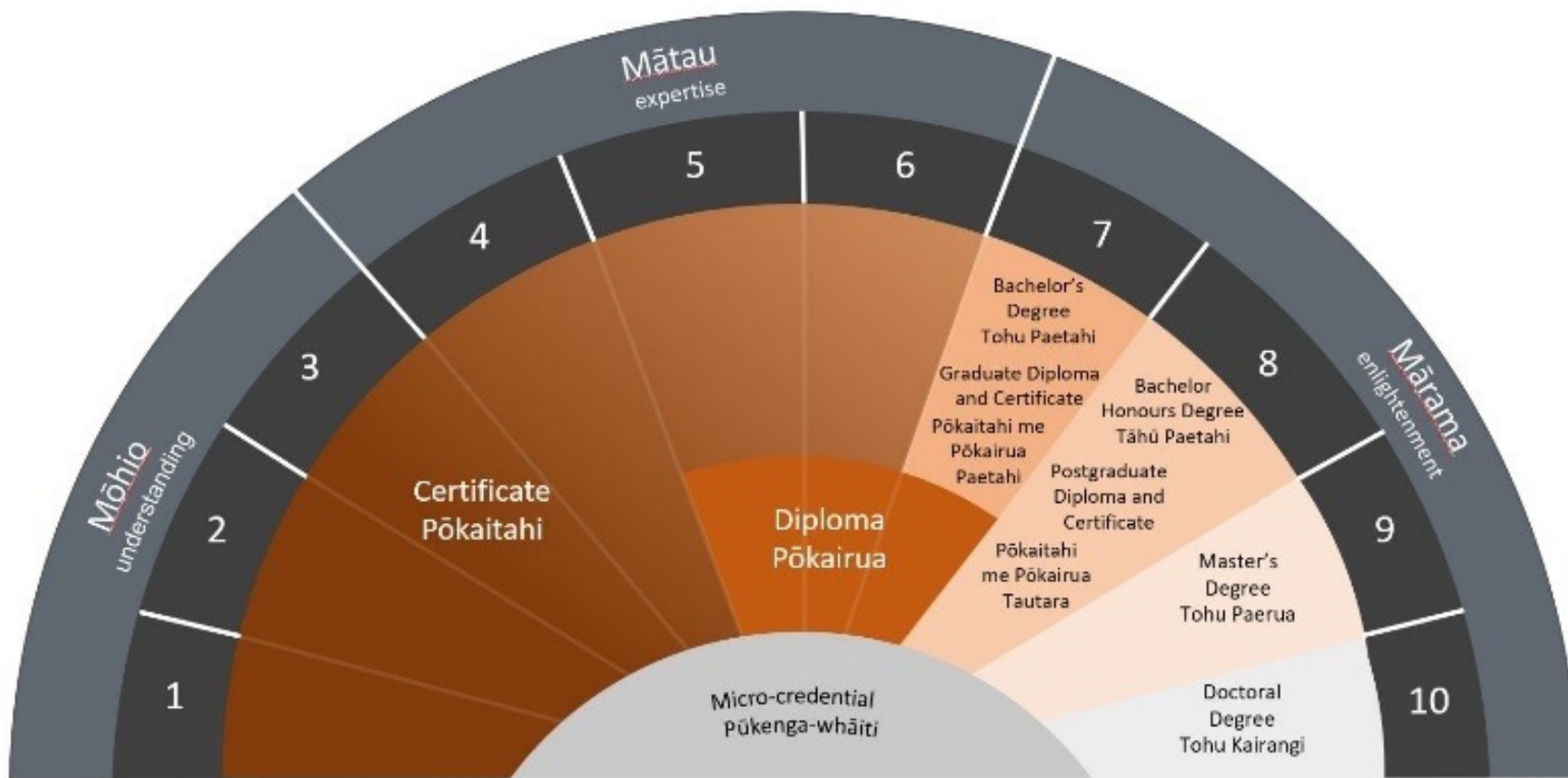
Graduates of this micro-credentials will be able to:

- Analyse information security governance as it applies to the business environment.
- Apply information security risk management techniques to identify, assess, and mitigate potential threats and vulnerabilities within an organisation's information systems.
- Design and implement an information security program for a business within the context of industry standards and frameworks.
- Evaluate incident management best practice as applicable in a business setting.
- Apply information technology and security principles to strengthen an organisation's security posture.

Education Organisations that can deliver this Micro-credential

New Zealand Skills and Education College

New Zealand Qualifications Framework



Micro-credentials can be listed at any level (from 1 to 10) of the New Zealand Qualifications and Credentials Framework (NZQCF).

They must:

- Have at least one credit (10 learning hours) and are typically more than 5 credits and less than 40 credits.
- State the learning outcomes, demonstrate that they meet an industry or community need and include an assessment component.
- Vocational micro-credentials must include any relevant skills standards



February 2024

Stacking Micro-credentials

This document guides qualification and programme developers on stacking micro-credentials within a programme.

What is stacking?

Stacking, in the context of this document, means including *one or more* approved standalone micro-credentials within a programme that NZQA formally recognises.

Micro-credentials can form part of a programme that leads to a qualification if:

- the micro-credential aligns with and contributes to the qualification's outcomes and strategic purpose, and
- the overall design of the programme is coherent.

NZQA approval is required to stack micro-credential(s) in a programme.

Why stack micro-credentials in a programme?

A programme that includes micro-credentials can offer learners

- a meaningful learning pathway for accumulating relevant and necessary skills
- the opportunity to gain valuable skills in a shorter time
- the opportunity to check interest and aptitude before committing to a whole programme.

Six considerations

Rationale

Structure

Enrolment

Alignment to the programme

Credit Recognition Transfer (CRT)

Ongoing review

NZQF: Stacking of micro-credentials (2)

There are six key areas to consider. Questions and answers follow:

Rationale

<p>What is the rationale for stacking a micro-credential in a programme?</p>	<p>The rationale for including a micro-credential in a programme should be clear to establish meaningful learning pathways for the learners.</p> <p>Stakeholders' support for including a micro-credential in the programme should be evident.</p>
--	--

Structure

<p>How will the micro-credential function as a programme component?</p>	<p>The micro-credential must fit precisely into the programme as either <u>a compulsory or elective component</u>. This means the following should remain the same as the approved standalone micro-credential:</p> <ul style="list-style-type: none"> • Title • Level • Credit • Learning outcomes • Indicative Content – learning materials/resources/activities • Assessment method(s) • Unit or Skill standard(s) • Related Regulations. <p>The learning outcomes of the component (micro-credential) should align with the graduate profile outcomes (GPOs) of the qualification to which the programme leads.</p>
<p>Can the programme consist entirely of stacked micro-credentials?</p>	<p>Programmes at levels 1-6 can be comprised entirely of stacked micro-credentials.</p> <p>For programmes at the degree level, components at the end or in the last year are based on augmentation and scaffolding of the knowledge and skills learned initially in the programme. Therefore, having micro-credentials stacked at the end of the programme will not enable the learner to achieve the analytical rigour and mastery required at high-level qualifications.</p>

Enrolment

Do students have to enrol in both micro-credential(s) and the programme?

If the student is enrolled in a programme that includes micro-credentials as components, the enrollment system should be set up to ensure the student is enrolled on the micro-credentials and the programme simultaneously.

As for achievement of the micro-credential and qualification (programme), these must be reported to NZQA and included on the learner's academic record.

If the learner has already completed/achieved a micro-credential, which is part of a programme, simultaneous enrolment in the micro-credential and programme is not required.

Alignment to the Programme

What is the impact of stacking micro-credentials in a programme?

The learning outcomes of the component (micro-credential) should align with the graduate profile outcomes (GPOs) of the qualification to which the programme leads.

Programme coherence should be checked to ensure alignment with the qualification, its conditions and requirements.

Micro-credential entry requirements should be appropriate for the learner to enrol in the programme.

The programme regulations should have been reviewed and confirmed to include each micro-credential.

There should be no monitoring/moderation issues related to the existing programme in which stacking is proposed.

What more must be considered when stacking micro-credentials in a degree level 7 or above programme?

The intended delivery staff should be research-active if the stackable micro-credential is in a degree programme.

Credit recognition transfer (CRT)

<p>What if the student has already completed the micro-credential before enrolling in the programme?</p>	<p>Clear and robust policies and procedures relating to CRT are essential when considering the stacking of micro-credentials to recognise the learner's achievement of the micro-credential if achieved before enrolling in the programme.</p> <p>Credit recognition transfer (CRT) is where one institution recognises credit gained at another institution towards a qualification or micro-credential. CRT generally describes credit from formal learning provided and credentialed by a tertiary provider.</p>
--	---

Ongoing review (after stacking is approved)

<p>How is ongoing alignment between the micro-credentials and the programme ensured?</p>	<p>Changes made to the component (stacked micro-credentials) in the programme (via a change application) do not mean an automatic change to the standalone micro-credential will be applied by NZQA and vice versa.</p> <p>If a micro-credential is discontinued or set to an expiring status, this will have an impact on the programme in which the micro-credential is stacked. The programme must be updated before the standalone micro-credential is discontinued.</p> <p>Education organisations should note:</p> <ul style="list-style-type: none"> • changing a micro-credential included in a programme requires confirming the alignment of the changes within the programme. • the programme change application (if reviewed) should be submitted at the same time as the micro-credential change application.
--	--

Ireland: micro-credentials in the NFAQ

Micro-credentials are incorporated at every level of the Irish National Framework of Qualifications

They are represented in three different forms:

“Minor Awards” (at any level, outcomes of partially completed “Major Awards” can be awarded).

“Supplemental Awards” (from Level 4 onwards, learning in addition to “Major Awards” can be awarded).

“Special Purpose Awards” (specific achievements can be awarded at any level)

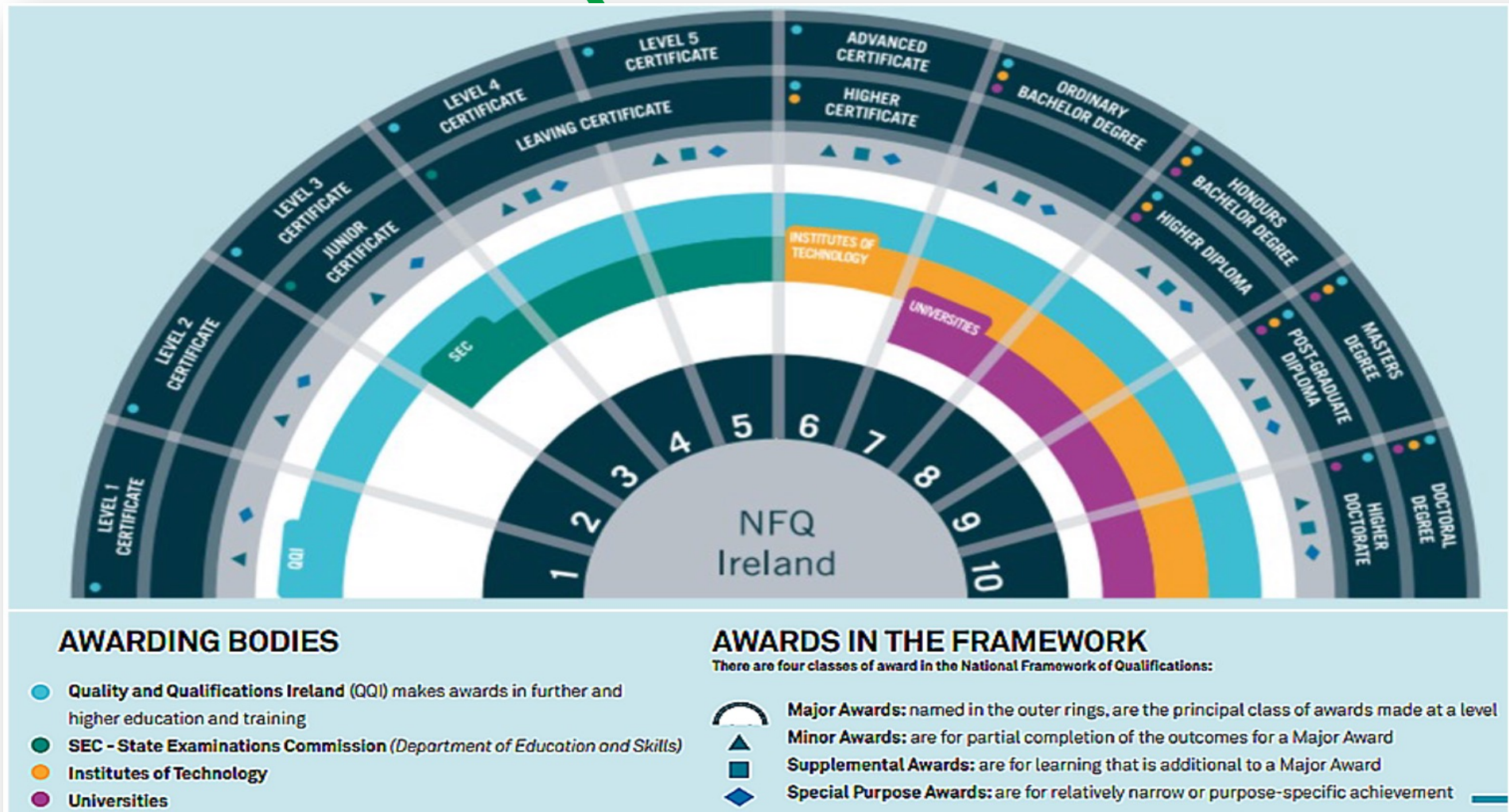


Figure 3: The Irish NQF. Source: Quality and Qualifications Ireland (2021).

Micro-credentials are awarded by universities, institutes of technologies, other awarding bodies, the State Examinations Commission and Quality and Qualifications Ireland (QQI)¹¹.

Portugal: National Catalogue Qualifications - ANQEP (UFCD)

The screenshot shows the ANQEP website interface. The search results for 'UFCD' are displayed, with the total count '8669 UFCD' circled in red. The results list three units with their respective details:

Código	Carga horária	Pontos de Crédito	Descrição	Ação
0001	25 horas	2.25	História das artes e da indústria gráfica	VER
0002	25 horas	2.25	Desktop publishing - tratamento de texto e paginação	VER
0003	50 horas	4.5	Desktop publishing - tratamento de texto e imagem	VER

- UFCD: proxy of micro-credentials
- Access: National Catalogue of Qualifications – ANQEP.
- Can be combined into a full qualification.
- UFCD: Volume of learning: 2.25 – 4.5 credit points
- Separate UFCD: does not give a level of qualification.

<https://catalogo.anqep.gov.pt/>

UFCD: Unidade de Formação de Curta Duração; Unit of Training of Short Duration

EU: Recommendation on European approach to micro-credentials for LLL and employability: 10 principles

“Use micro-credentials, where appropriate, as a tool to strengthen and complement existing learning opportunities, increase participation in lifelong learning”

1. Quality
2. Transparency
3. Relevance
4. Valid assessment
5. Learning pathways

6. Recognition
7. Portability
8. Learner-centred
9. Authentic
10. Information and guidance

ANNEX I

Union standard elements to describe a micro-credential

This annex includes a list of common Union standard elements to describe micro-credentials that can be used as a resource to support implementation.

Mandatory elements:	Identification of the learner
	Title of the micro-credential
	Country/Region of the issuer
	Awarding body
	Date of issuing
	Learning outcomes
	Notional workload needed to achieve the learning outcomes (in ECTS credits, wherever possible)
	Level (and cycle, if applicable) of the learning experience leading to the micro-credential (EQF, QF-EHEA), if applicable
	Type of assessment
	Form of participation in the learning activity
	Type of quality assurance used to underpin the micro-credential
Optional elements, where relevant (non-exhaustive list)	Prerequisites needed to enrol in the learning activity
	Supervision and identity verification during assessment (unsupervised with no identity verification, supervised with no identity verification, supervised online, or onsite with identity verification)
	Grade achieved
	Integration/stackability options (standalone, independent micro-credential/integrated, stackable towards another credential)
	Further information

These standard elements will be included in a Union data model¹ that specifies a common format for describing micro-credentials. The data model will be available as an open standard

Elements to structure and design a Micro-credential (EU Recommendation on a common approach to micro-credentials)

- ✓ Incorporate micro-credentials into your **institutional quality assurance** system.
 - Delivery of courses, assessment and certification.
 - Feedback from learners and external stakeholders (such as employers and professional bodies)
- ✓ **Externally review** the quality of your institution.
- ✓ **Publish** methods and results of internal and external quality assurance.

ACQF **Transparency**

- ✓ **Publish the learning outcomes, notional workload and credit points of micro-credentials.**
 - Document link with teaching, learning and assessment criteria and methods.
 - Document link with formal taxonomies such as skill or competence frameworks (e.g. ESCO).
 - Publish information on micro-credentials using the standard model.

- ✓ **Integrate micro-credentials into national and regional qualifications frameworks.**

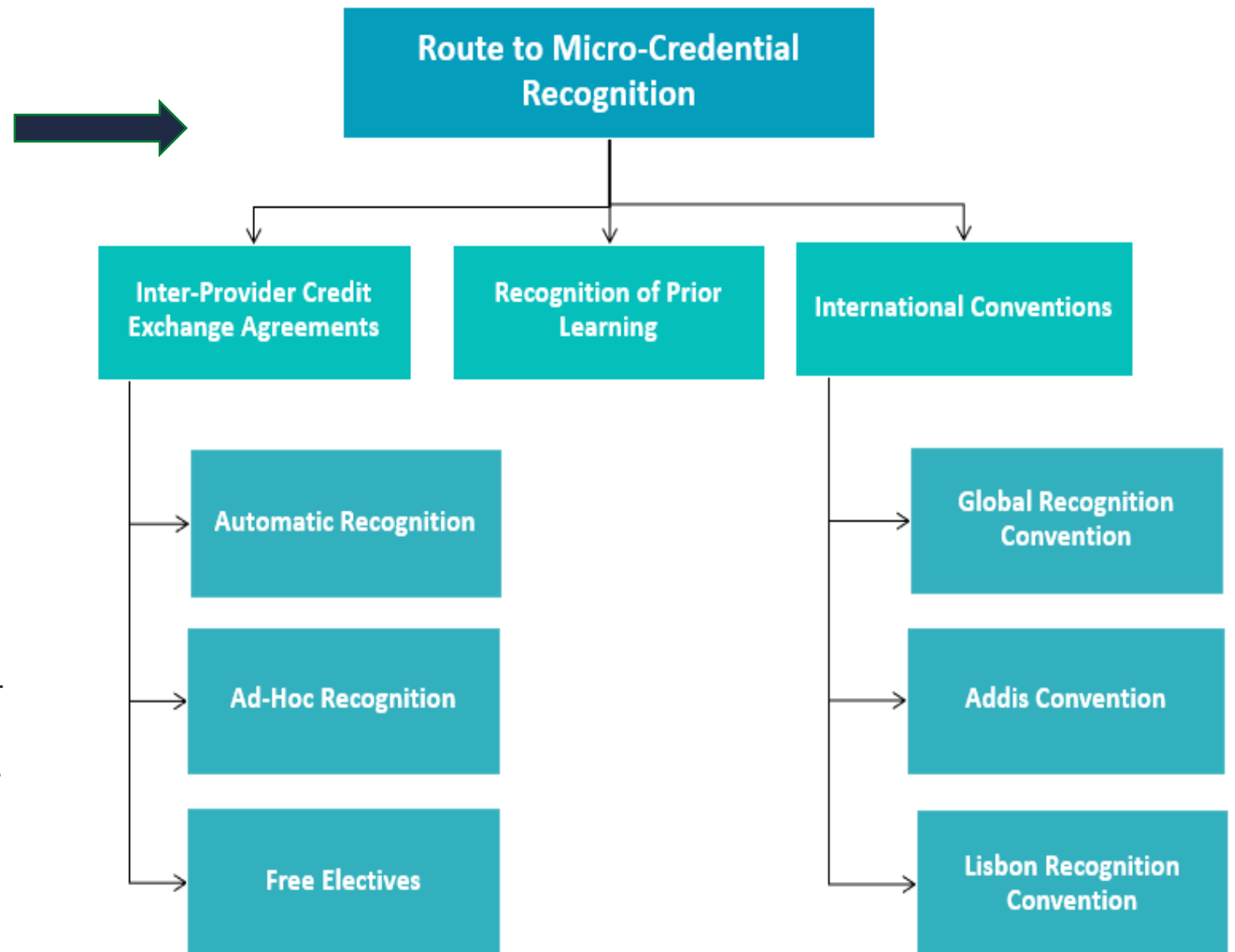
Recognition of micro-credentials

For education or training purposes:

- ✓ **Enable multiple, feasible routes** for micro-credential recognition
- ✓ **Seek collaboration** with private or public sector entities (which may include professional bodies, companies and other enterprises) to co-design and offer micro-credentials which may be automatically recognised for employment and education purposes.

For employment purposes:

- ✓ Non-formal or informal learning providers should tailor recommendations in the Micro-Credentials Guide to design and offer fit for purpose interoperable micro-credentials (e.g. as part of **Continuous Professional Development** schemes).



Micro-credential Observatory: a great source

The Research Observatory on Micro-credentials (ROM) is a NIDL initiative in partnership with the [ECIU University](#). The aim is to provide a curated and regularly updated collection of major reports, policy initiatives and research-related publications on the growth of micro-credentials in higher education and lifelong learning more generally.

- [NIDL Activities](#)
- [NIDL Research](#)
- [Major Policy Initiatives](#)
- [National & International Reports](#)
- [Useful Reading: Articles, Books & Papers](#)
- [Events, Conferences and Webinars](#)
- [Microcredentials Sans Frontières Network](#)



- Large number of articles published in 2022-2023: <https://www.dcu.ie/nidl/micro-credential-observatory>

Websites, resources on micro-credentials: open information

- **In NQF registers:**

- New Zealand (NZQA): <https://www.nzqa.govt.nz/providers-partners/approval-accreditation-and-registration/micro-credentials/>

- Register of micro-credentials NZQA: <https://www.nzqa.govt.nz/nzqf/search/microcredentials.do>
- Up to 40 credits – levels 3 to 8 of NQF

- **Portugal: National Qualifications Catalogue:** <https://catalogo.anqep.gov.pt/>
 - 8663 courses of short duration (75-350 hours of learning)

- **Toolkits: Ontario Micro-credentials Toolkit:**

<https://ecampusontario.pressbooks.pub/microcredentialtoolkit/>

Websites, resources on micro-credentials: open information (2)

- **ACQF website:** <https://acqf.africa/resources/micro-credentials>
- **Cedefop:** <https://www.cedefop.europa.eu/en/projects/microcredentials-labour-market-education-and-training>
- **ETF:** Guideline to design, issue and recognise Micro-Credentials. <https://www.etf.europa.eu/sites/default/files/2023-05/Micro-Credential%20Guidelines%20Final%20Delivery.pdf>
- **EU Recommendation 2022:** A European Approach to Micro-Credentials: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2022.243.01.0010.01.ENG
- **New survey:** https://www.holoniq.com/notes/micro-credentials-survey-2023-insights?utm_campaign=Weekly%20Education%20Marketing%20Newsletter&utm_medium=email&_hsmi=257668719&_hsenc=p2ANqtz-9AW9h3XTIKkCALx1MFTX6515BITWs4V5GeO7EdAbCUYOBGELgA3TN43nQjKY7B30_AxaBgAGsBVj7OKaftMoJ4yi8Dvw&utm_content=257668719&utm_source=hs_email



Micro-credentials and / or proxies: please mention some current examples.

How will the NQF incorporate them? Some ideas?

What is the future of micro-credentials in Seychelles?

05

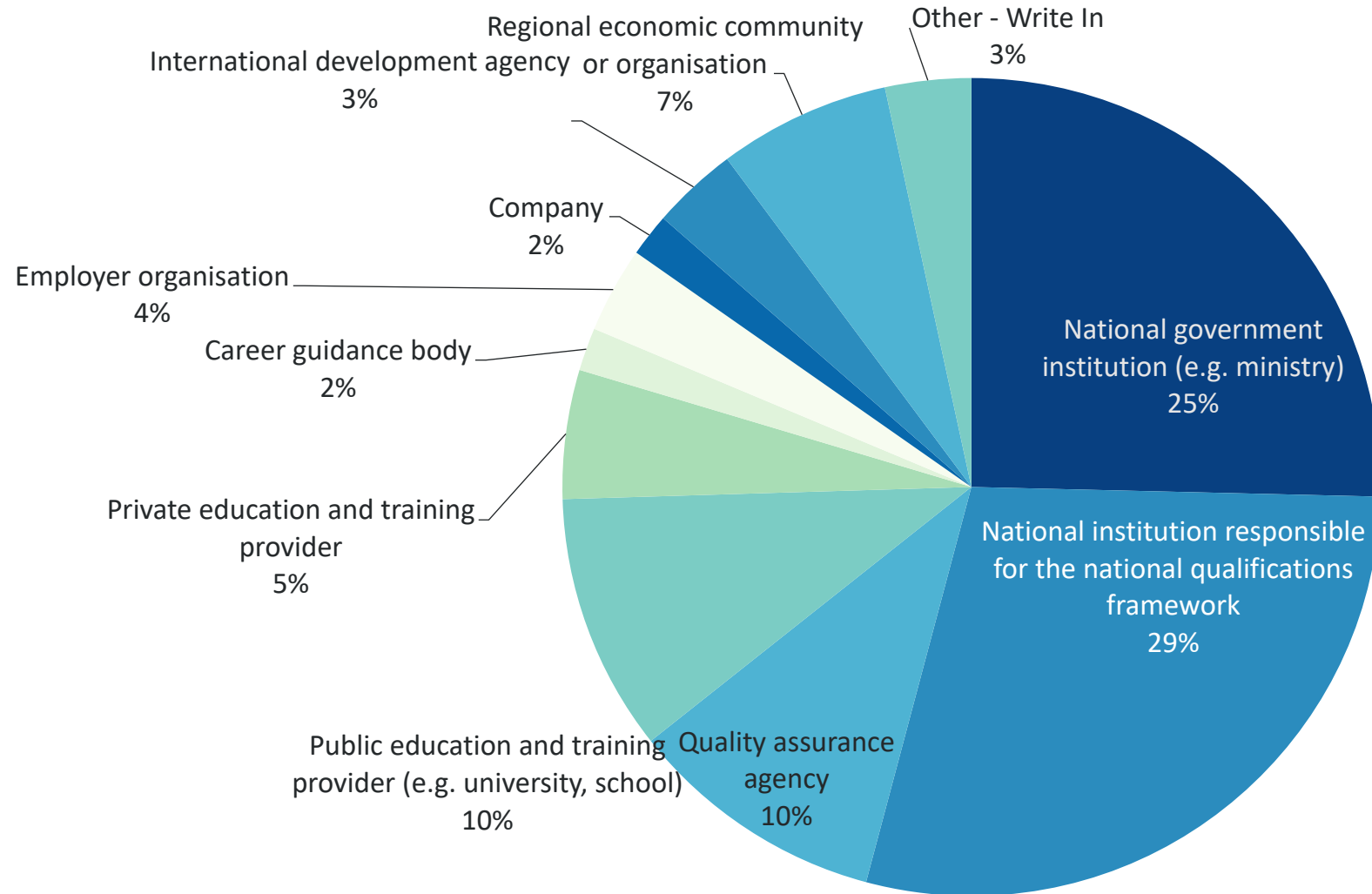
**Micro-credentials survey
ACQF: preliminary results**

ACQF-II MC Survey respondents

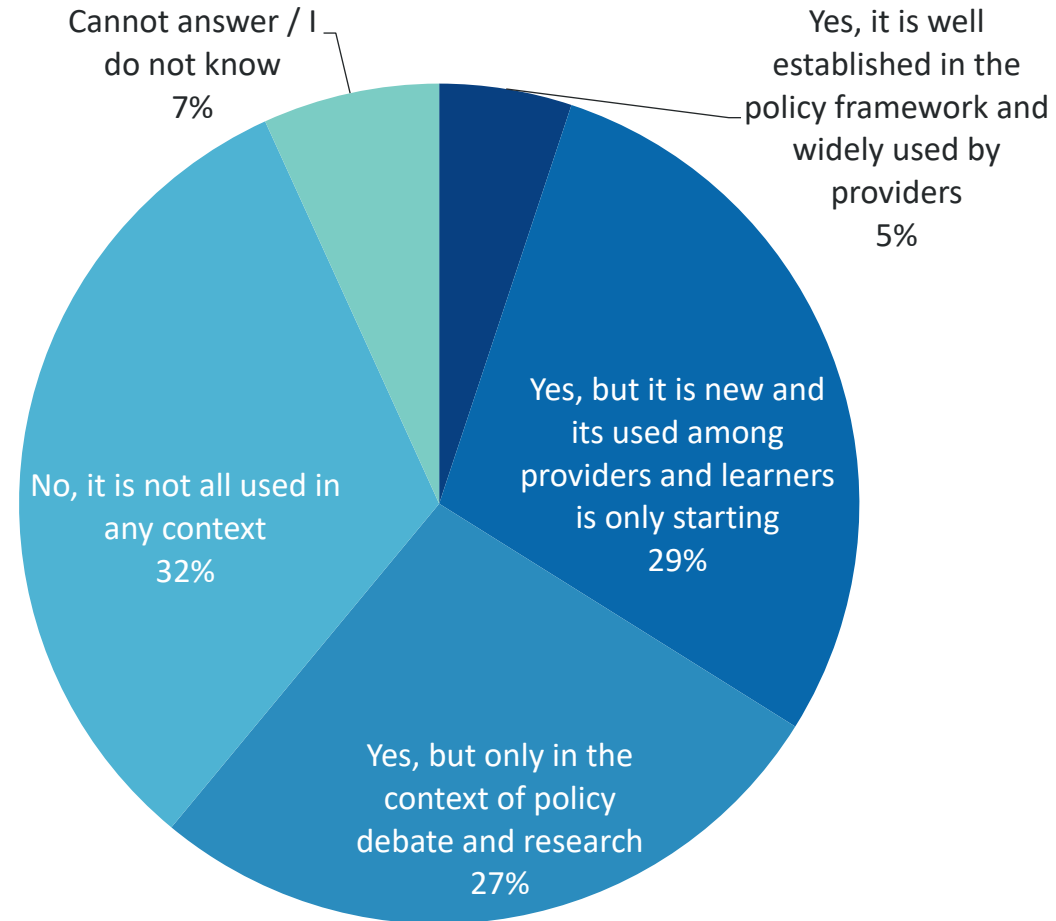
SADC countries: Angola, Botswana, DR Congo, Eswatini, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Zambia

Value	Percent	Count
Angola	5.1%	3
Botswana	1.7%	1
Burkina Faso	6.8%	4
Cabo Verde	1.7%	1
Chad	1.7%	1
Democratic Republic of the Congo	1.7%	1
Djibouti	1.7%	1
Egypt	1.7%	1
Eswatini (formerly Swaziland)	6.8%	4
Ethiopia	1.7%	1
Ghana	1.7%	1
Guinea-Bissau	6.8%	4
Kenya	5.1%	3
Malawi	1.7%	1
Mauritius	1.7%	1
Morocco	5.1%	3
Mozambique	6.8%	4
Namibia	1.7%	1
Nigeria	1.7%	1
Rwanda	1.7%	1
Senegal	1.7%	1
Seychelles	6.8%	4
Somalia	1.7%	1
South Africa	3.4%	2
Sudan	1.7%	1
Tunisia	5.1%	3
Uganda	3.4%	2
Zambia	11.9%	7
Totals		59

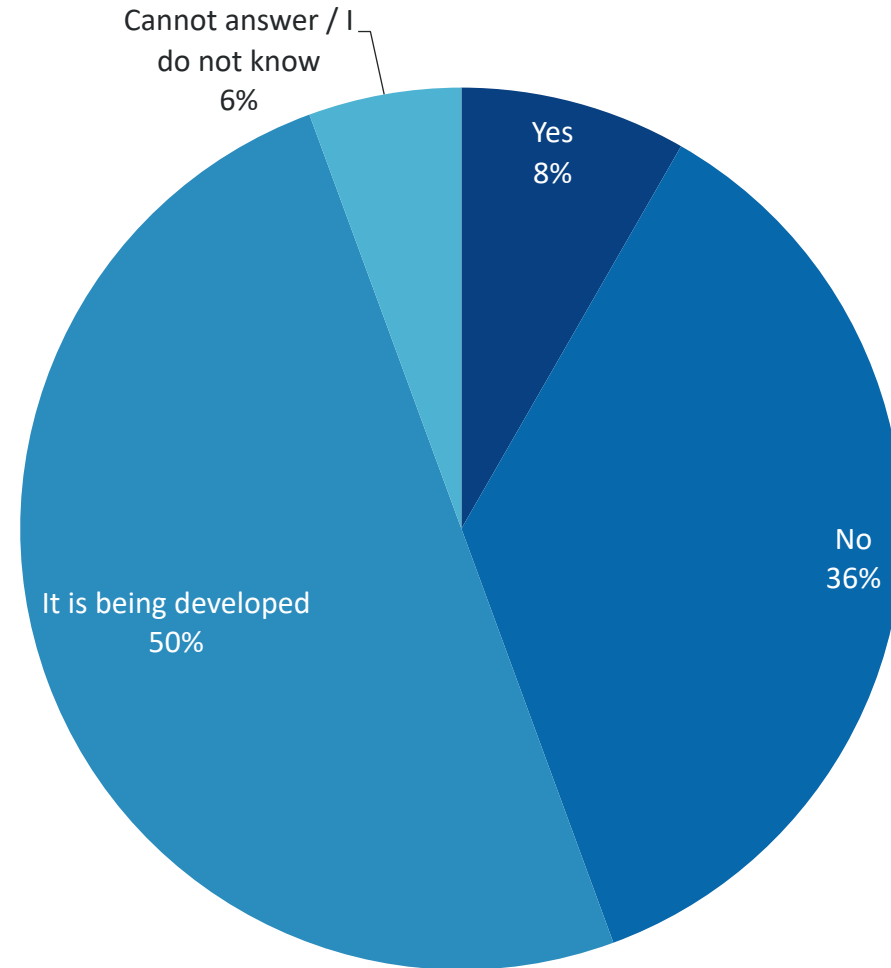
What type of organisation do you represent?



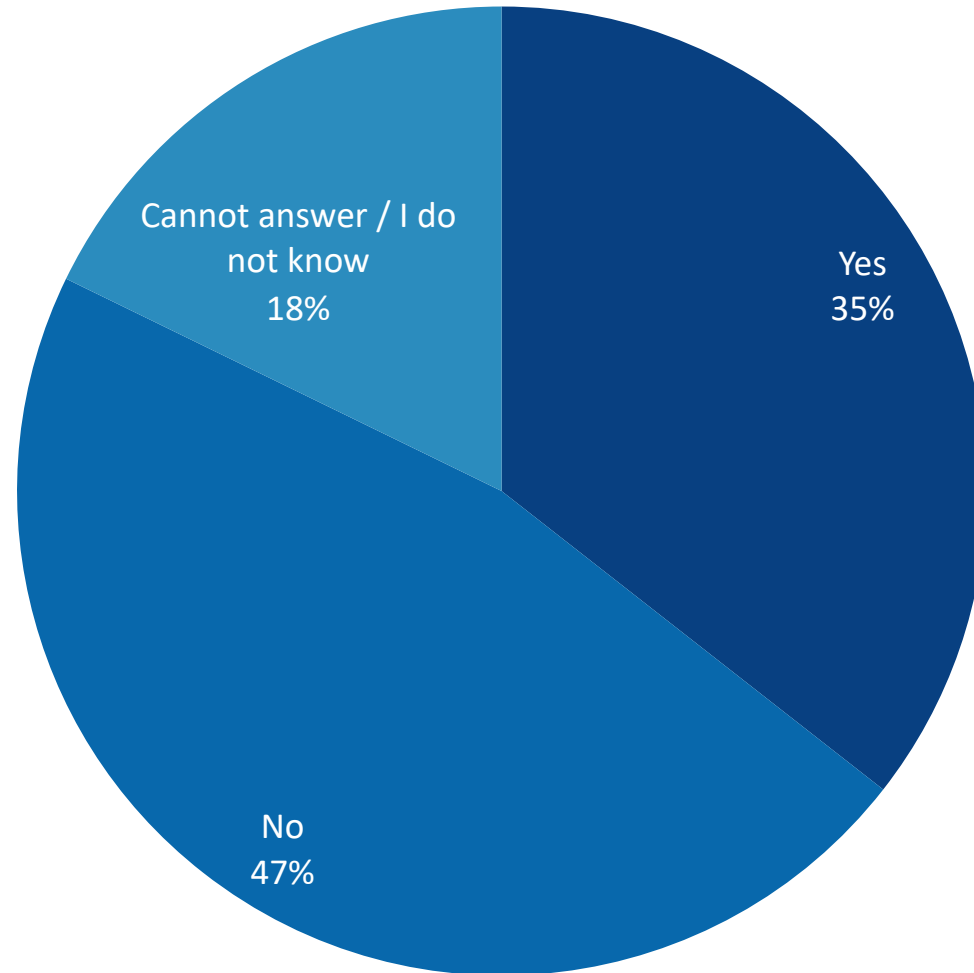
Is the term “micro-credential” used in the context of your organisation / country?



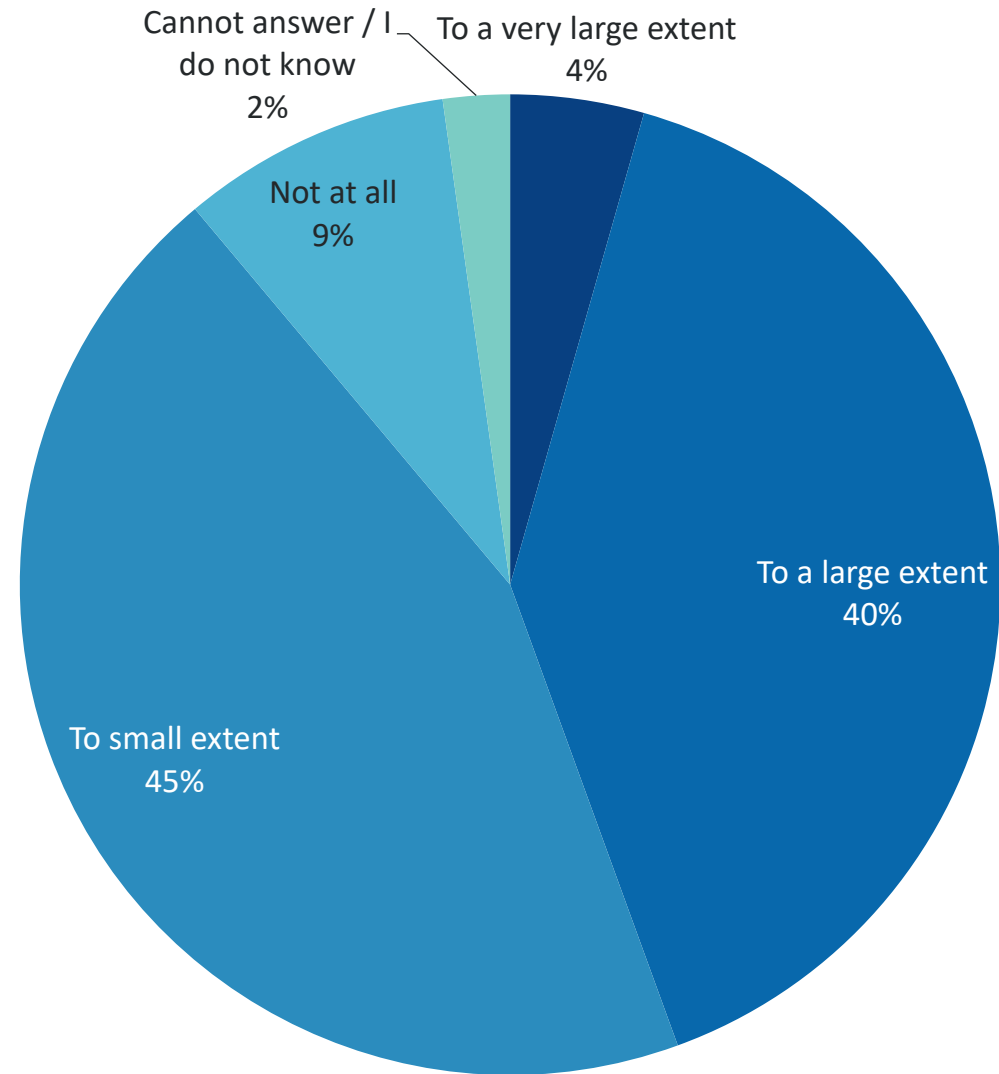
Is there a formal definition for micro-credentials in your country?



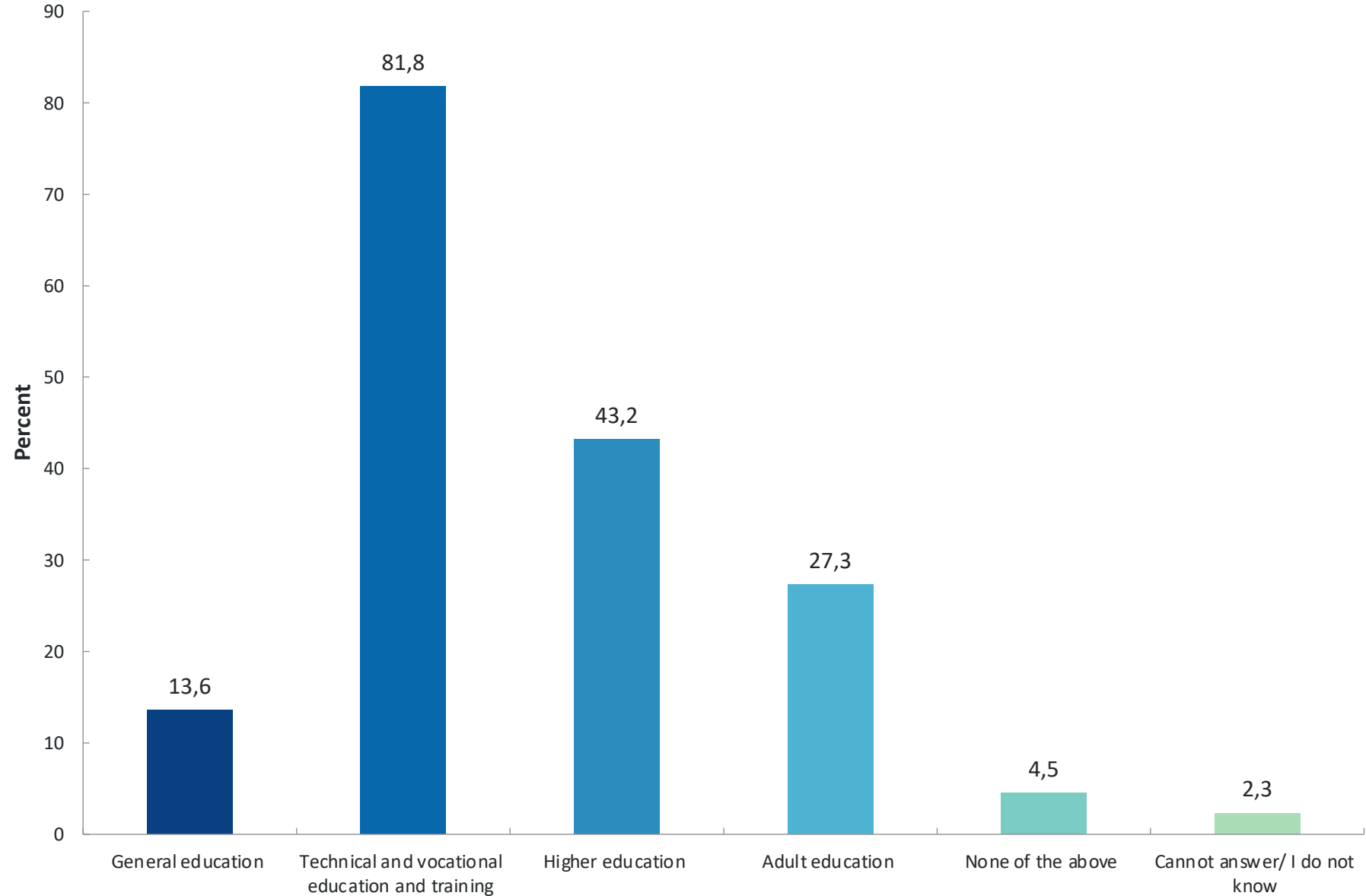
Are micro-credentials referred to in any official policy documents ?



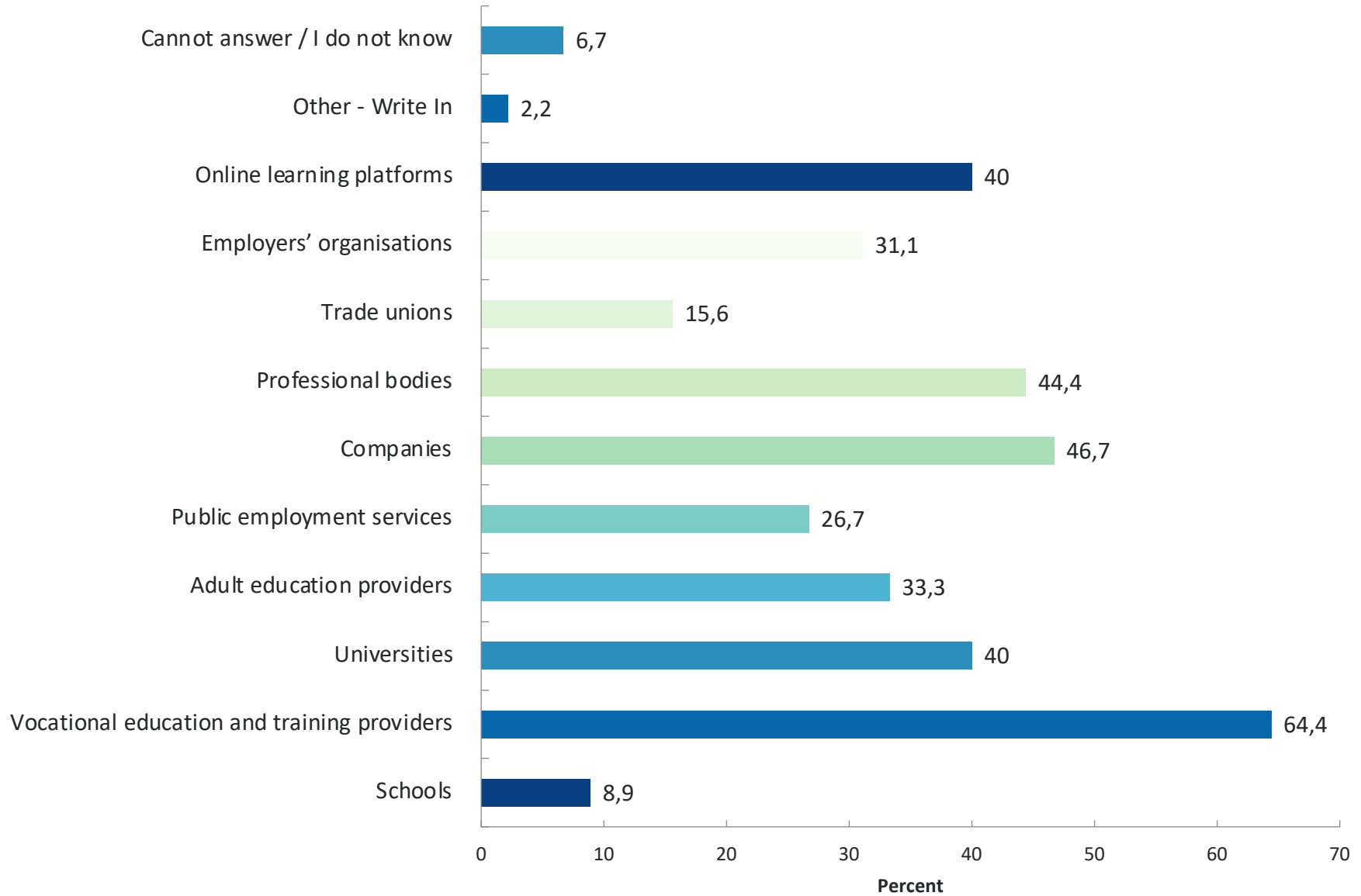
To what extent are micro-credentials (or the term specified by you) referred to in national and regional policy discussions?



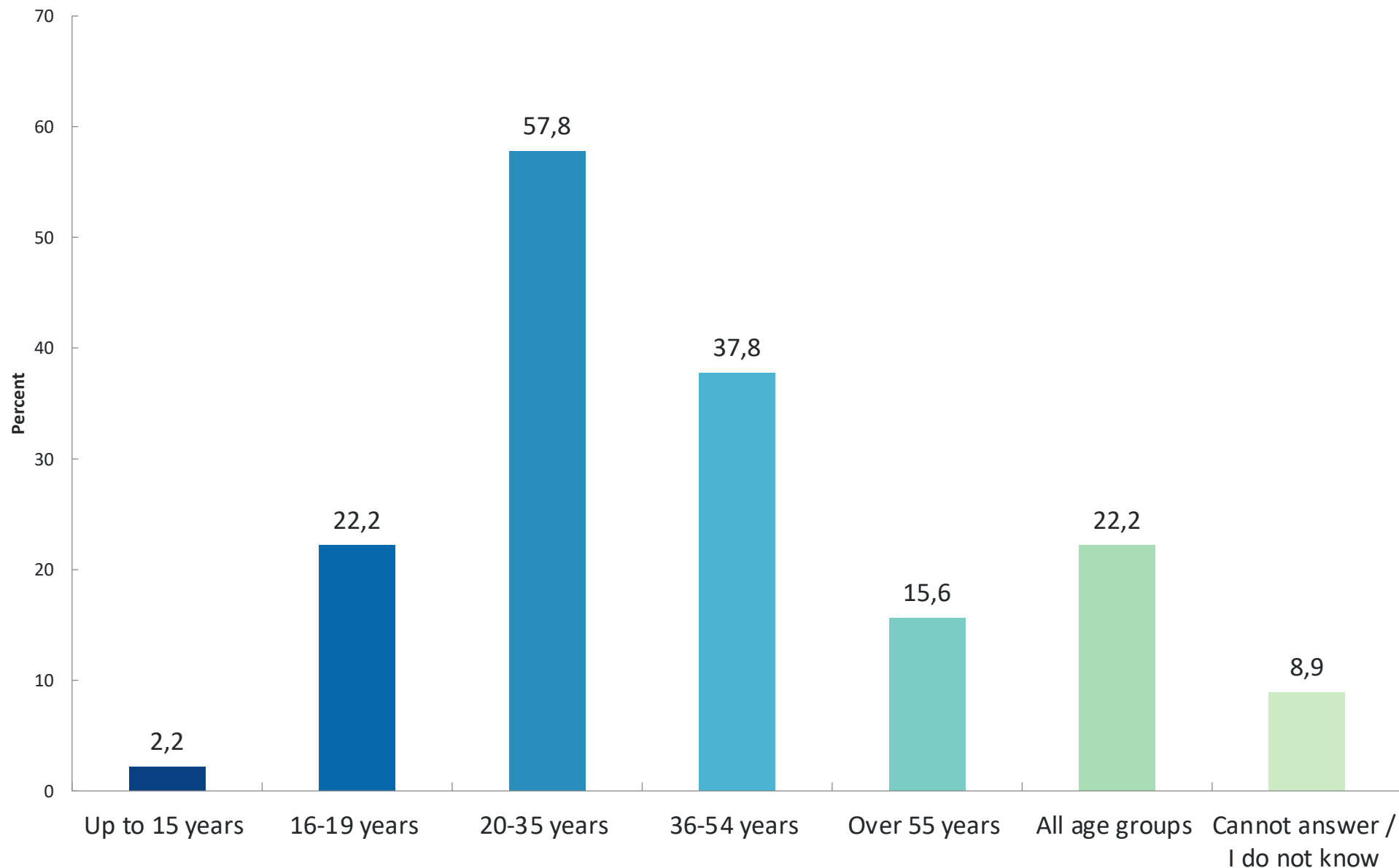
Which education and training sectors are offering micro-credentials?



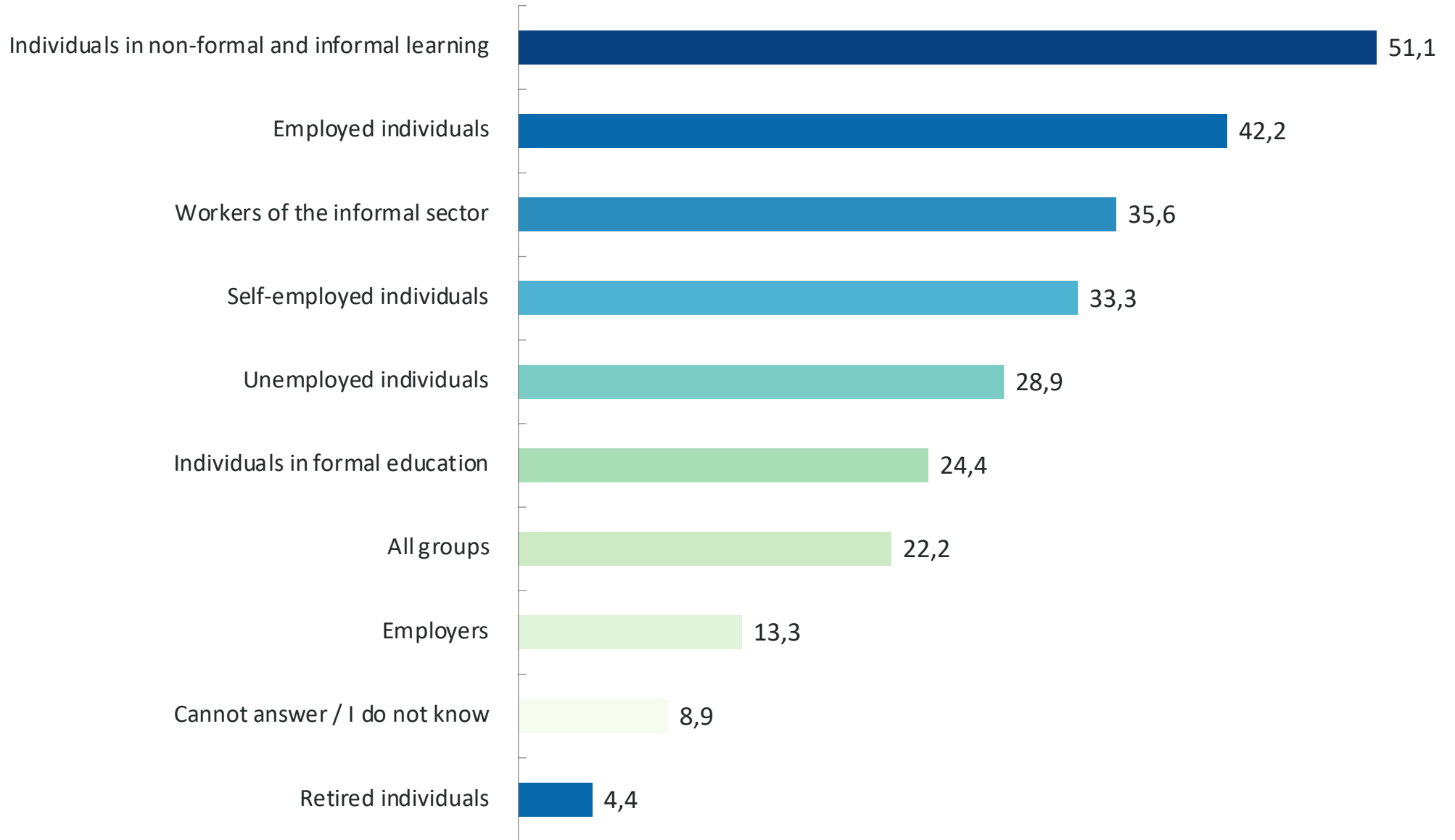
Who are the main providers of micro-credentials ?



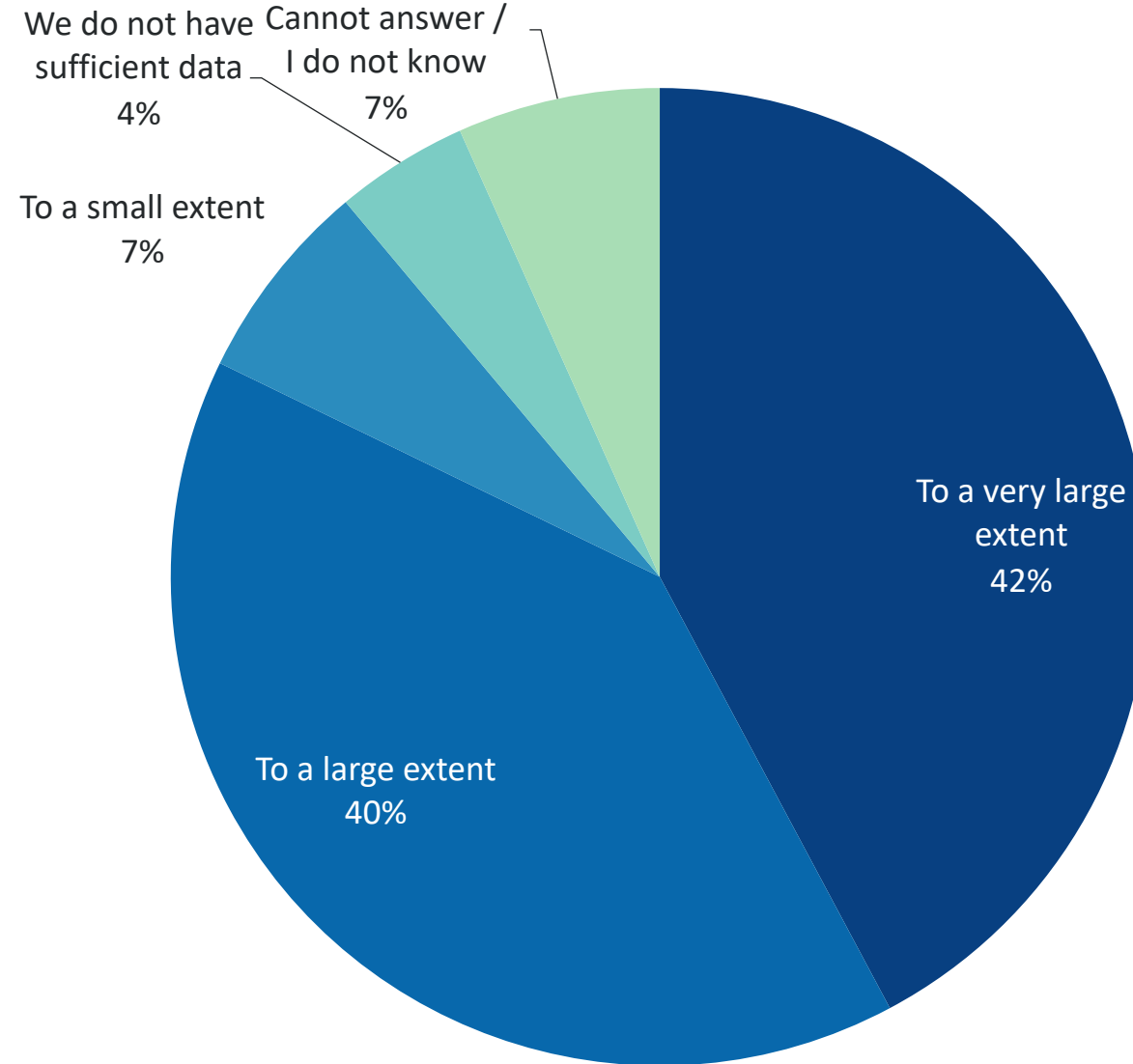
What groups of learners are the main recipients of micro-credentials in terms of age ?



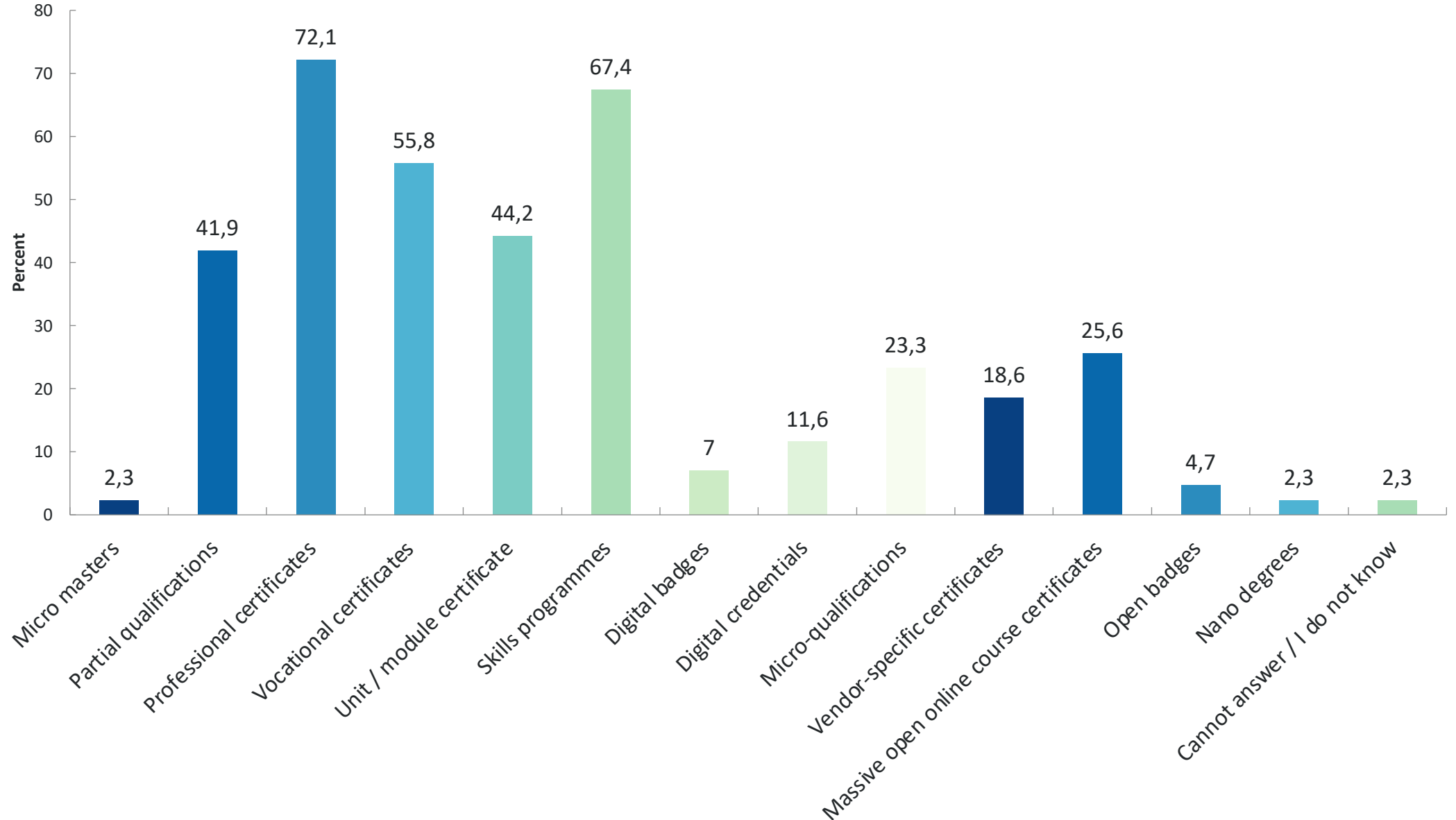
What groups of learners are the main recipients of micro-credentials ?



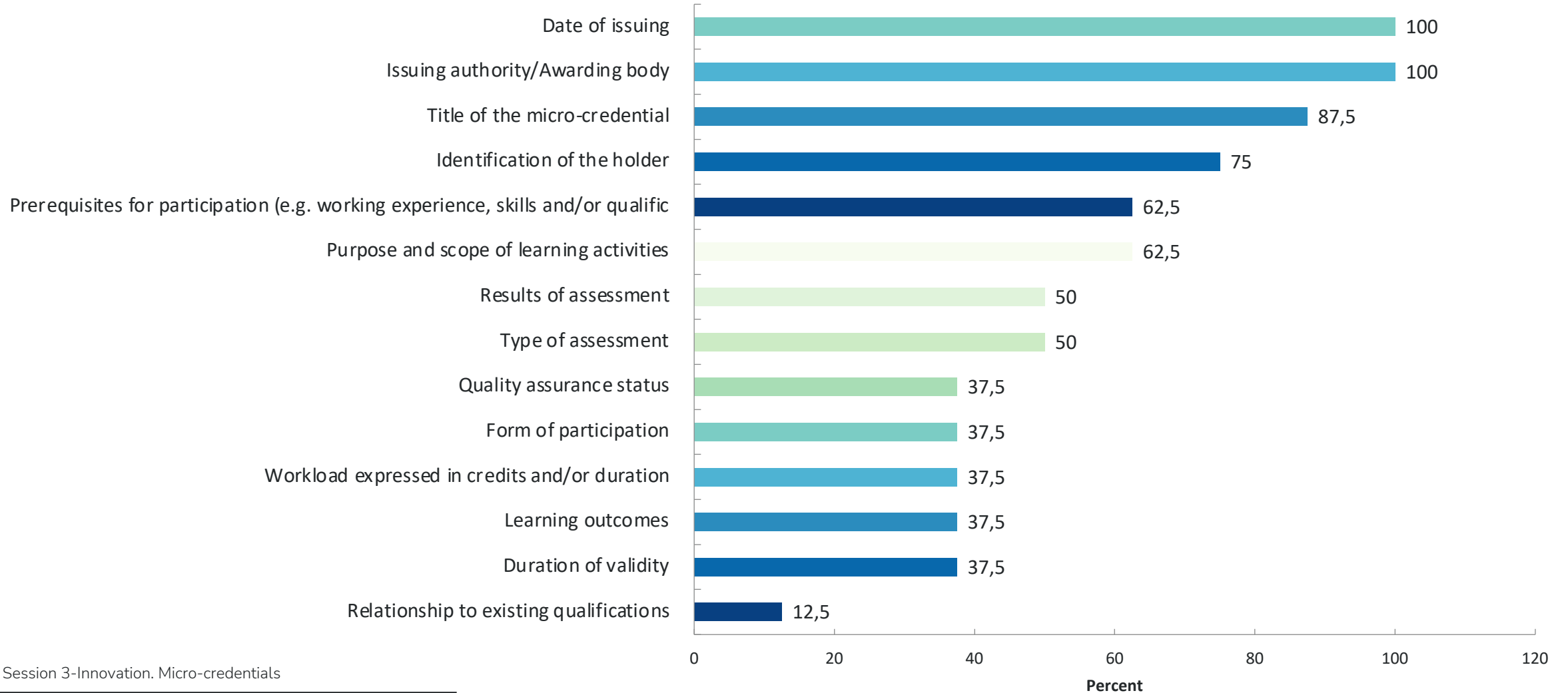
To what extent do you expect the offer of micro-credentials to grow in your country's education and training offering in the next couple of years ?



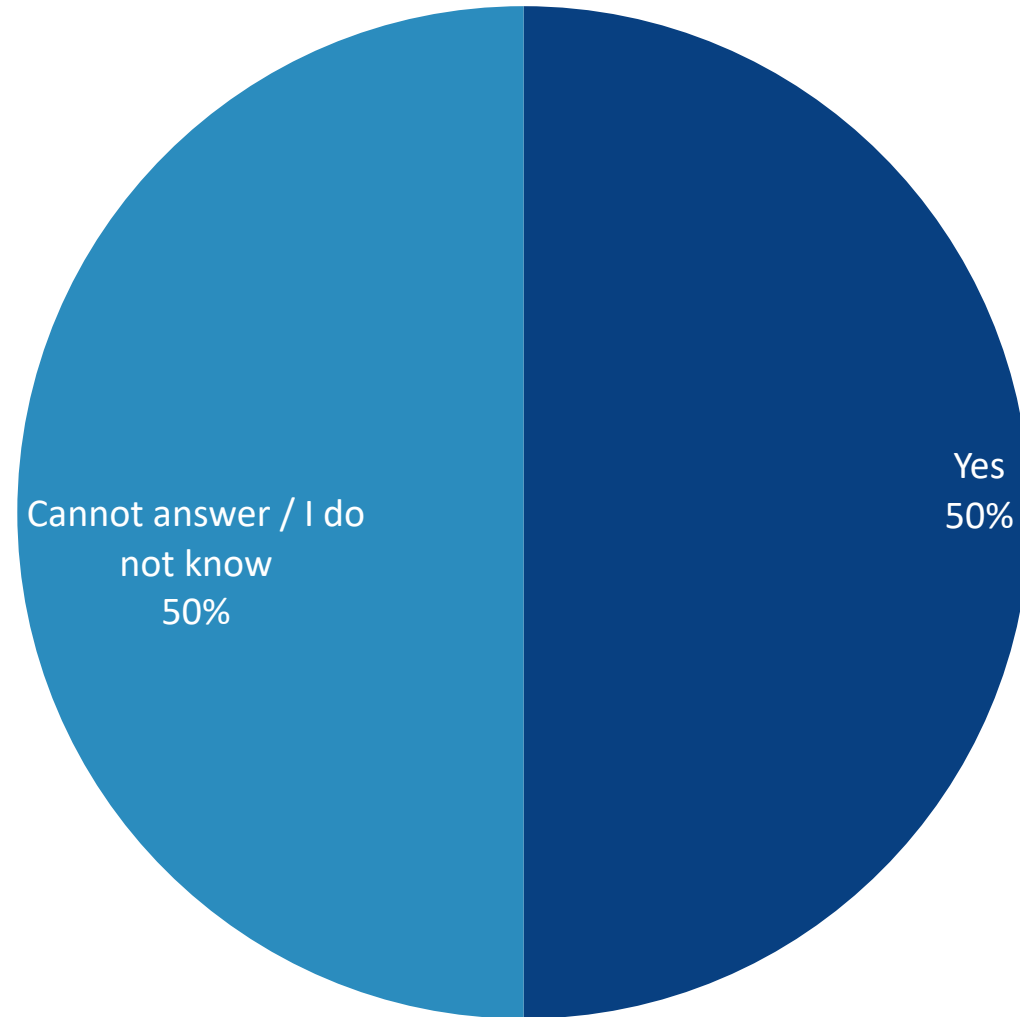
What types of micro-credentials are the most common in your country?



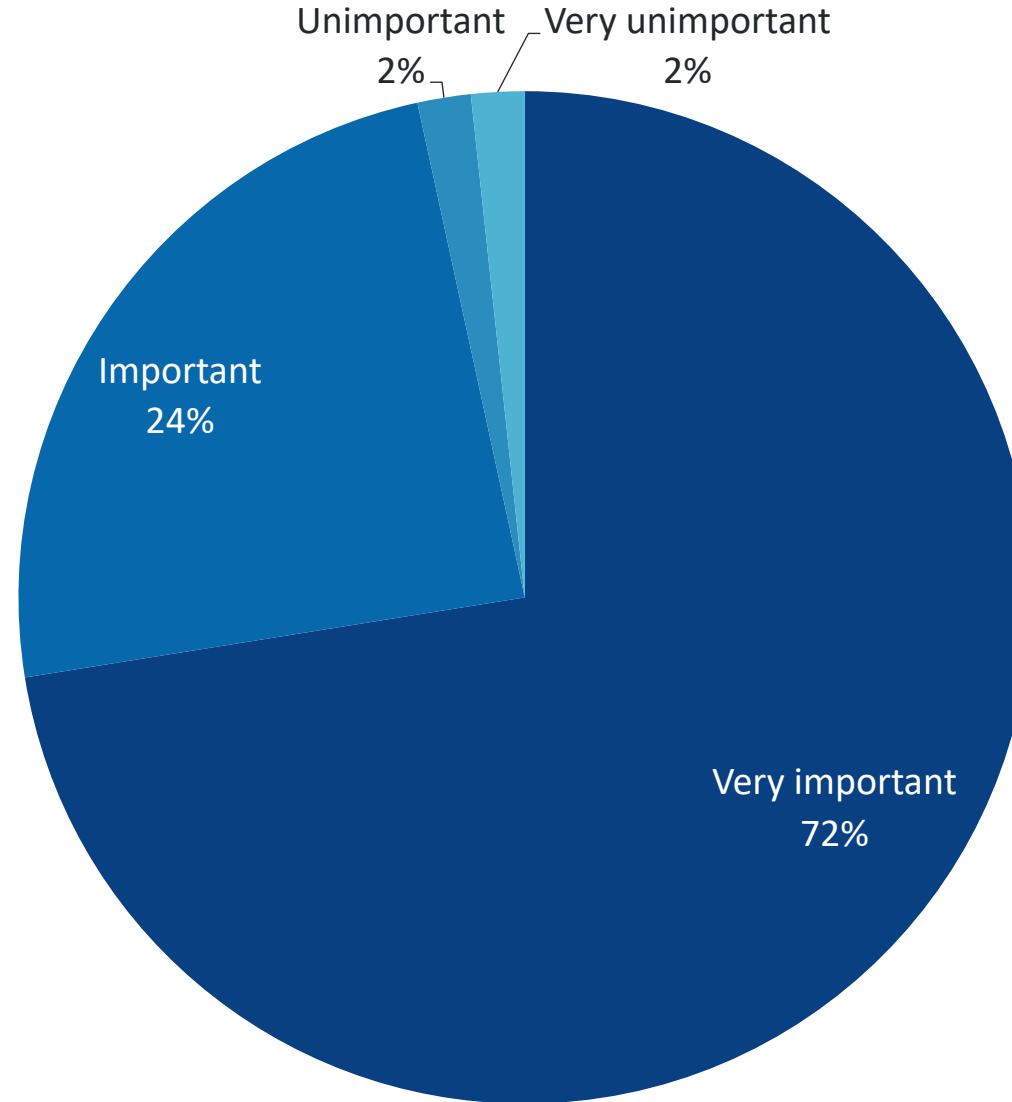
Please consider micro-credentials offered by your organisation. Which of the following information elements do they have?



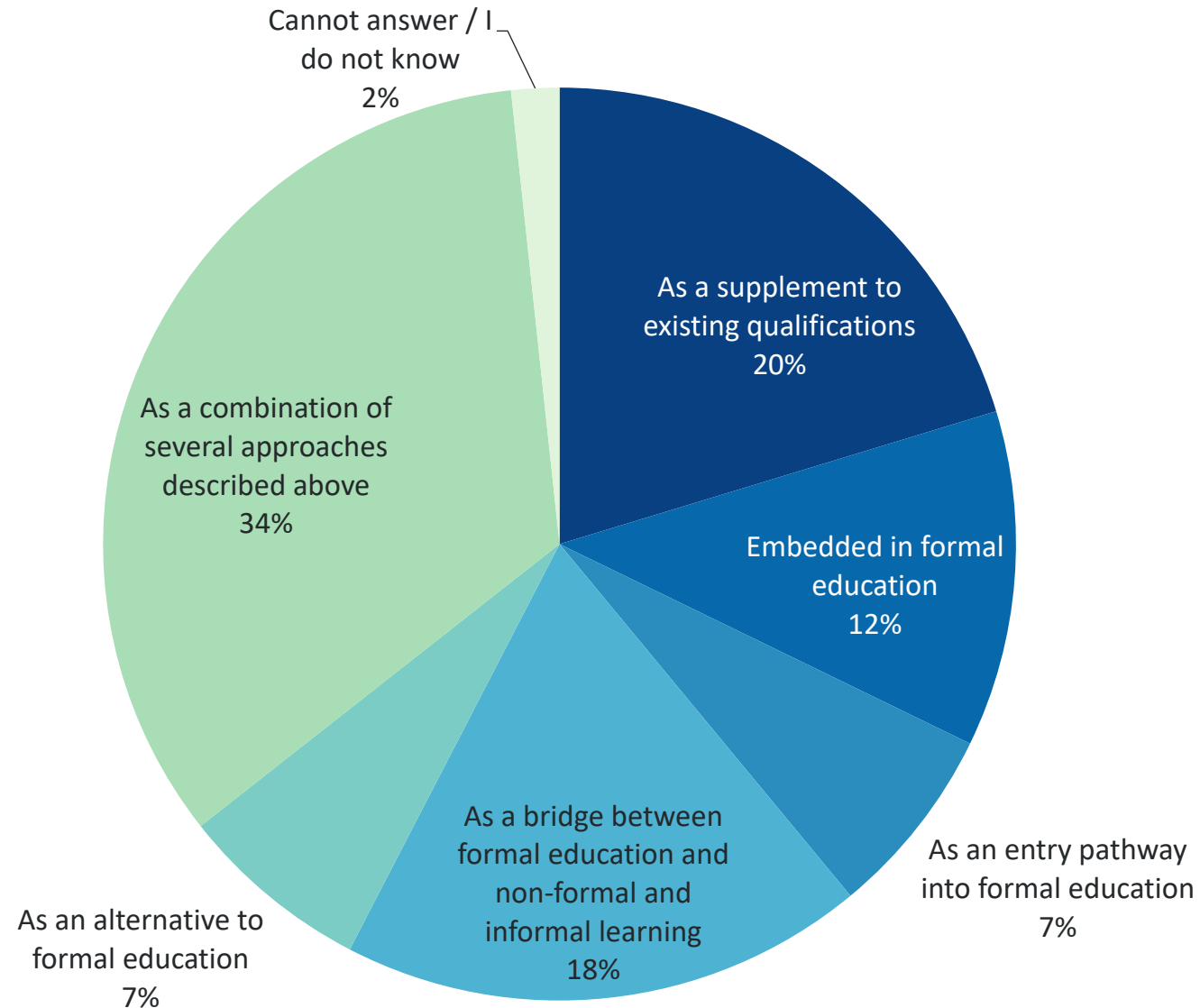
Are there any plans to include micro-credentials in your NQF / register or database of qualifications?

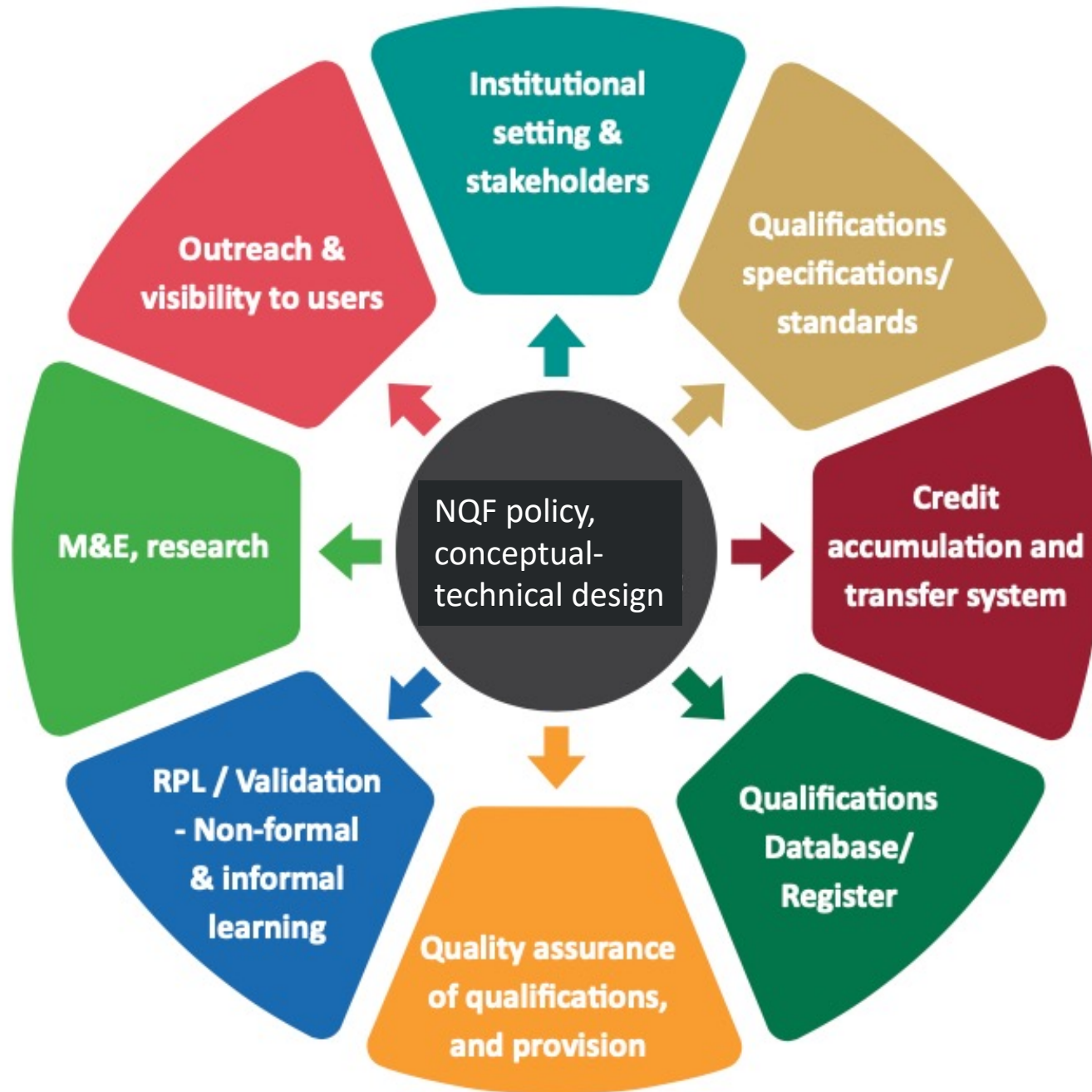


In your opinion, how important would it be to develop a common African approach to micro-credentials?



If a common approach was to be developed, how would you imagine the positioning of micro-credentials in the wider qualifications and credentials ecosystem?







African Continental Qualifications Framework

Poll



1. Is the number and diversity of micro-credentials growing in your country / training offer?

- Yes
- No
- We do not have sufficient data
- Perhaps

2. Which sub-sectors / institutions offer short courses providing micro-credentials. Choose as many options as adequate.

Higher education

TVET

Professional associations / bodies

Large companies

NGOs

Schools

Others

Poll

3. What are the main purposes of micro-credentials in your country?

Reskilling, upskilling

Employability

Articulation

Access to higher levels of education

Social inclusion

Others

4. Micro-credentials and the NQF: does the legislation provide for inclusion of micro-credentials (or proxies) in the NQF / register?

Yes

Not

No, but we are working on it

I am not sure

04

All learning matters

RPL

Make the invisible - visible



Make the invisible - visible: recognise skills acquired by experience/informal, non-formal learning

Non-formal and informal learning are key parts of lifelong learning

People learn at anytime, anywhere throughout their lives, not only in formal education and training systems and pathways, but also in non-formal and informal learning settings.

Knowledge, skills and competences acquired in all contexts and modalities of learning (incl. experience) can be identified, documented, assessed and certified.

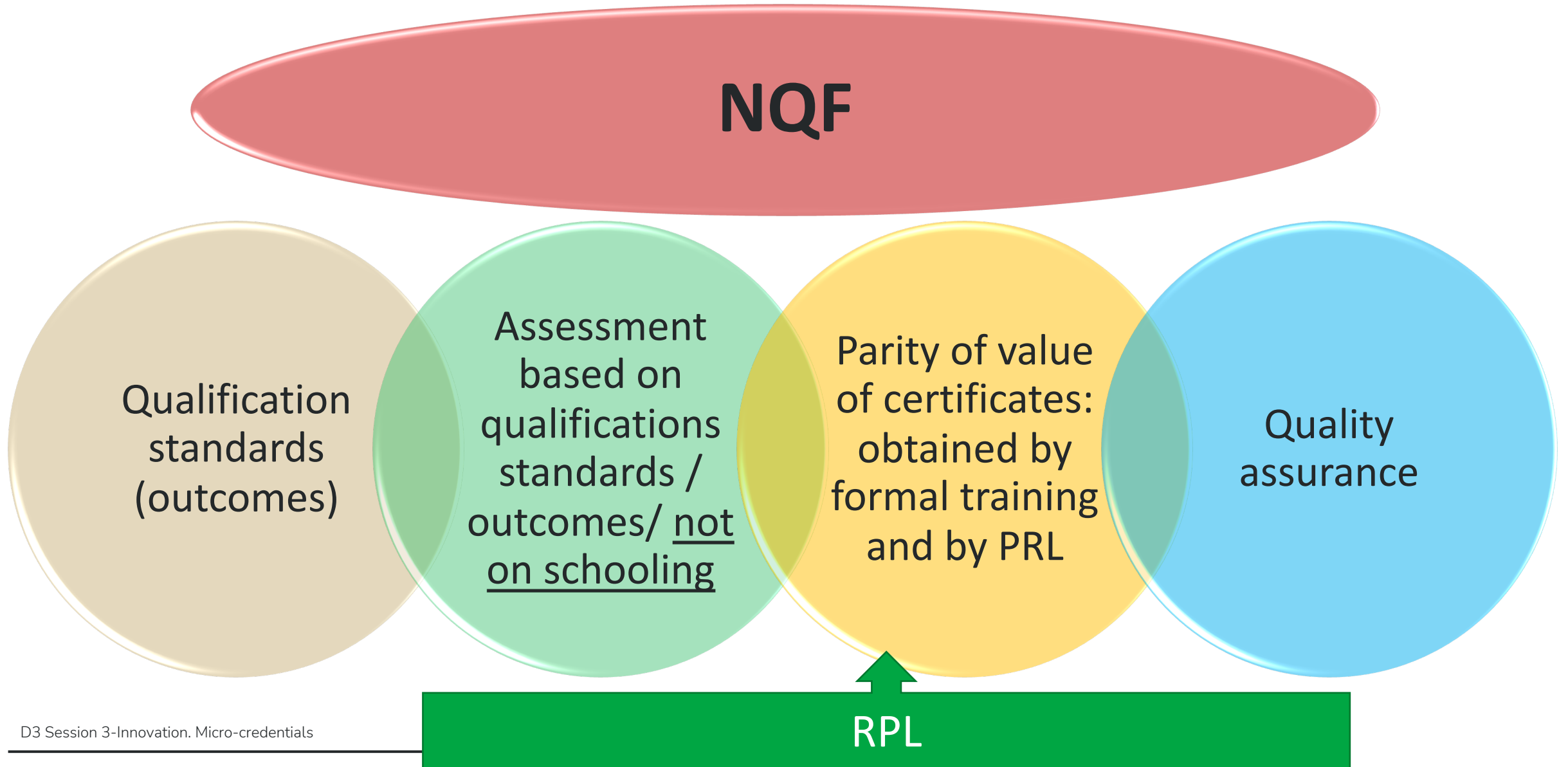
NQFs support and need RPL

- A process
- An assessment
 - (Not education and training, not in the first place at least)
- All education and training institutions assess and validate learning outcomes, but RPL is specific (mainly because no curriculum)

- Recognition of prior learning (RPL) is a process of identifying, documenting, assessing and certifying formal, non-formal and **informal learning outcomes** against **standards** used in formal education and training.
- Thus, RPL provides an opportunity for people to acquire qualifications or credits towards a qualification or exemptions (from all or part of the curriculum, or even exemption from an academic prerequisite for entering a formal study programme) without going through a formal education or training programme.

- The Recognition of Prior Learning (RPL) is a process through which formal, non-formal and informal learning is measured, mediated for recognition across different contexts and certified against the requirements for credit, access, inclusion or advancement in the formal education and training system or workplace.
- The aim is to make it possible to obtain formal recognition for knowledge gained throughout life, such as in workplaces and own reading or experiences. The RPL process also entails providing support to a candidate to ensure that knowledge is discovered and displayed in terms of a relevant qualification registered on the National Qualifications Framework (NQF).

What connection with NQF?



RPL in Africa



SEYCHELLES QUALIFICATIONS AUTHORITY

National Guidelines for the Implementation of Recognition of Prior Learning (RPL)

July 2017



Terça-feira, 17 de Agosto de 2021 I SÉRIE — Número 158



BOLETIM DA REPÚBLICA

PUBLICAÇÃO OFICIAL DA REPÚBLICA DE MOÇAMBIQUE

Decreto n.º 58/2021
de 17 de Agosto

Havendo necessidade de dotar o Subsistema de Educação Profissional de normas e procedimentos, aplicados ao processo de reconhecimento de competências adquiridas, através de aprendizagem ao longo da vida, em contextos de trabalho, formação não formal e informal, ao abrigo do disposto no n.º 2 do artigo 15, da Lei n.º 23/2014, de 23 de Setembro, Lei de Educação Profissional, alterada e republicada pela Lei n.º 6/2016, de 16 de Junho, o Conselho de Ministros decreta:

ARTIGO 1

É aprovado o Sistema de Reconhecimento de Competências Adquiridas, abreviadamente designado SRCA, em anexo, que é parte integrante do presente Decreto.

ARTIGO 2

Compete ao titular superintende a área do ensino técnico profissional aprovar o Regulamento do Sistema de Reconhecimento de Competências Adquiridas, no prazo de 60 dias, a partir da data da publicação do presente Decreto.

ARTIGO 3

O presente Decreto entra em vigor na data da sua publicação.



ORIENTAÇÕES METODOLÓGICAS PARA A IMPLEMENTAÇÃO DO SISTEMA DE RECONHECIMENTO DE COMPETÊNCIAS ADQUIRIDAS (SRCA)



Junho 2022



GOVERNMENT OF MALAWI

RECOGNITION OF PRIOR LEARNING GUIDELINES



MAURITIUS QUALIFICATIONS AUTHORITY

Recognition of Prior Learning Guidelines

June 2016



National Policy and Criteria for the Implementation of Recognition of Prior Learning (Amended in March 2019)

SEYCHELLES QUALIFICATIONS AUTHORITY

National Policy for the Recognition of Prior Learning (RPL)

February 2017



GOVERNMENT OF MALAWI

RECOGNITION OF PRIOR LEARNING (RPL)

ASSESSORS GUIDE



POLICY AND CRITERIA FOR RECOGNITION OF PRIOR LEARNING IN ZAMBIA

JUNE 2016

VOCATIONAL EDUCATION AND TRAINING AUTHORITY (VETA)



GUIDELINES FOR RECOGNITION OF PRIOR LEARNING ASSESSMENT (RPLA) IN TANZANIA



RPL is not only assessment! It is process...



 Autoridade Nacional da Educação Profissional

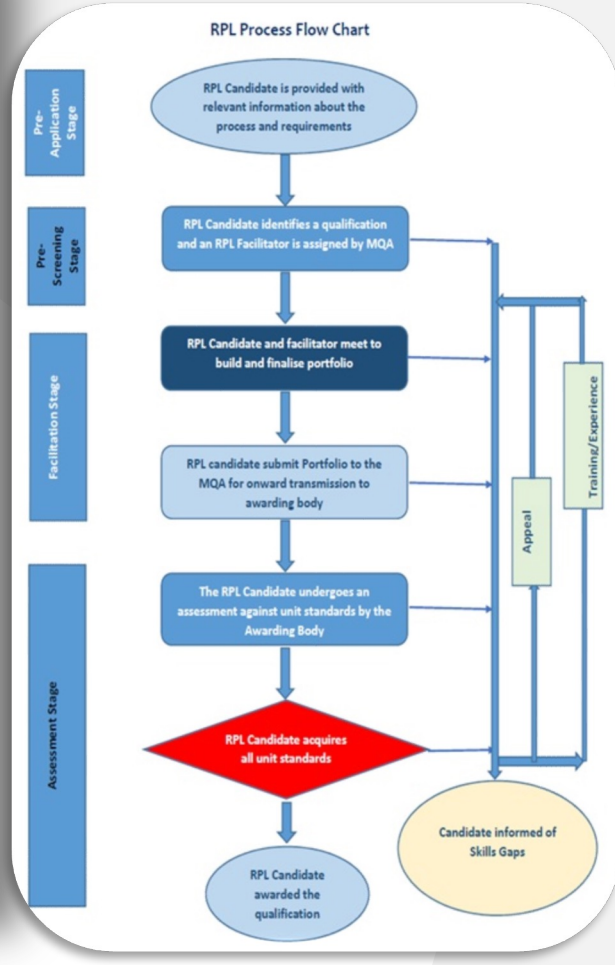
RPL in Mozambique – NQF Professional

Assessment Tests in the Pilot Project:

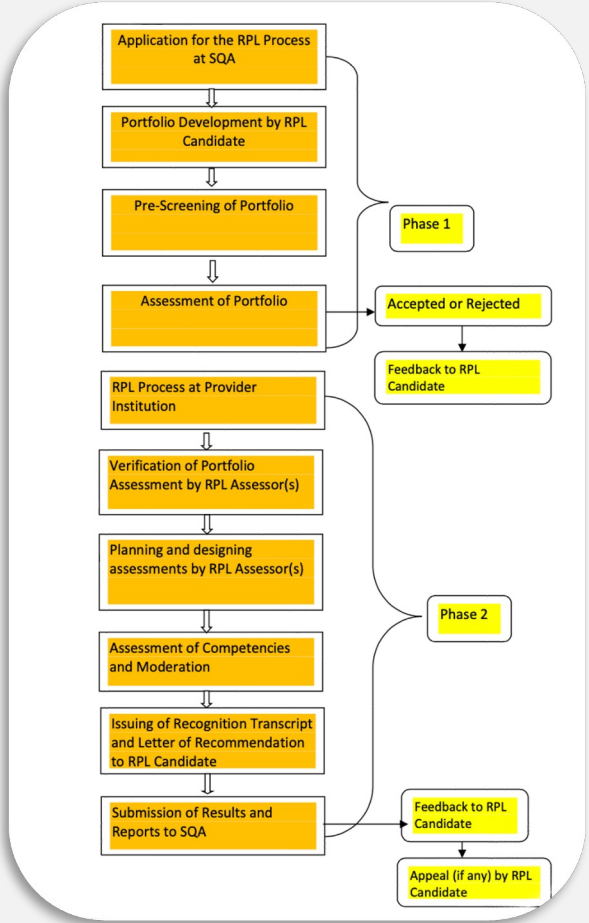


POR UMA EDUCAÇÃO PARA O TRABALHO E DESENVOLVIMENTO DO PAÍS

Mozambique



Mauritius



Seychelles

Regional RPL policies and guidelines

EU - Cedefop:

- <https://www.cedefop.europa.eu/en/projects/validation-non-formal-and-informal-learning>
- <https://www.cedefop.europa.eu/en/publications/3093>

ACQF: <https://acqf.africa/resources/recognition-of-prior-learning>

SADCQF

EAC



DE5

Risks, challenges

Challenges and risks – during the development process

- **Nature of challenges and risks**
 - ✓ Political
 - ✓ Institutional
 - ✓ Technical
 - ✓ Stakeholders' buy-in
 - ✓ Resources
 - ✓ Others
- **Are these challenges and risks very likely to occur and important?**

- **Some potential solutions**
 - ✓ Ownership and leadership
 - ✓ Chain of collaborations
 - ✓ Dissemination (media, website, meetings)
 - ✓ Technical support, information
 - ✓ Others...

Roadmap



Next steps and milestones 2024

- Workshop - brief report; all presentations shared; Outlines stabilised
- Complementary information: request
- Drafting process: 3 Policy Papers
 - Draft 1: Until end June 2024
 - Consultation, comments
 - Draft 2: Until November 2024
 - Validation: December 2024 (in Accra)
- Webinars: on NQF, RPL, CATS topics
- Engage in the ACQF QCP work

ACQF

African Continental
Qualifications Framework



A national qualifications framework (NQF) is 'A policy and instrument for the development and classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims at integrating and coordinating national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society.

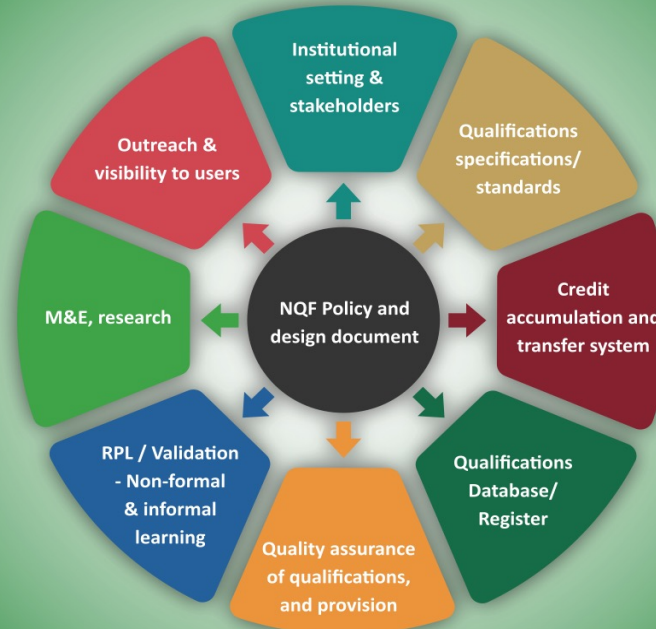
Source: EQF Recommendation

A national qualification system includes all aspects of a country's activity that result in the recognition of learning. These include the means to develop and operationalise national or regional policy on qualifications, institutional arrangements, **quality assurance processes, evaluation and attribution processes, skills recognition** and other mechanisms linking education and training to the labour market and civil society. Qualifications systems can be more or less integrated and coherent. One of the characteristics of a qualification system may be an **explicit qualifications framework**.

Source: OECD, *Bridges to Lifelong Learning*, 2007

A qualification: means a formal outcome of an assessment and validation process which is obtained when a competent authority determines that an individual has achieved learning outcomes to given standards.

Source: EQF Recommendation.



Level descriptor: A statement describing learning achievement at a particular level of a Qualifications Framework that provides a broad indication of the types of learning outcomes and assessment criteria that are appropriate to a qualification at that level.

Source: SAQA, NQFPedia

Learning outcomes: Statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence.

Set of knowledge, skills and/or competences an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal and informal.

Source: Cedefop

A regional qualifications framework (RQF) is a broad structure of levels of learning outcomes that is agreed by countries in a geographical region.

A means of enabling one national framework of qualifications to relate to another and, subsequently, for a qualification in one country to be compared to a qualification from another country.

Source: ASEAN

QRF: ASEAN Qualifications Reference Framework, *A Practical Guide and All you Need to Know*.