African Continental Qualifications Framework

Funded by the European Union

Day 2: Session 8

1) ACQF Common profiles of occupations / qualifications
2) ACQF QCP

22/05/2024

Data and AI for NQF implementation

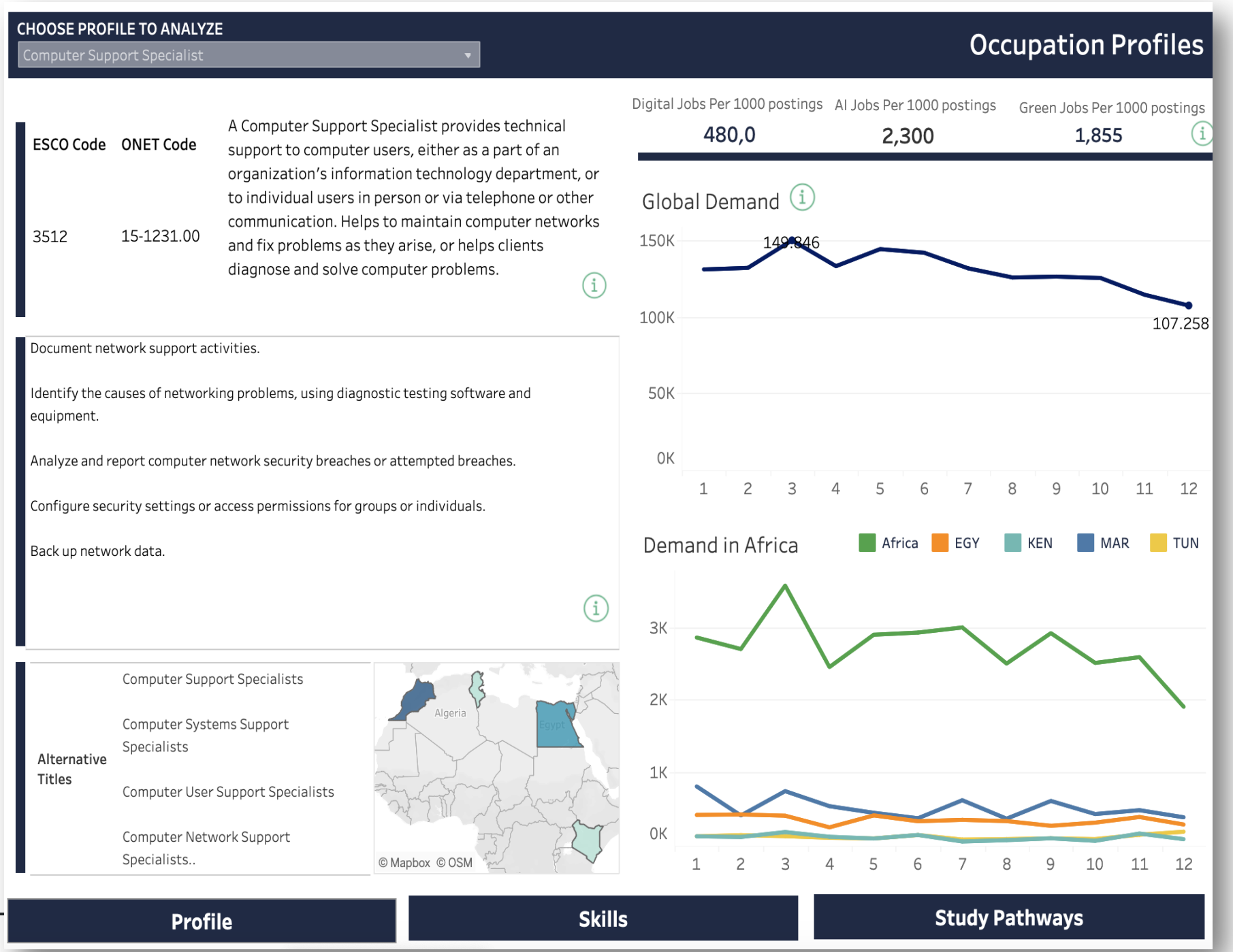
Freetown, NQF Consultation Week

Eduarda Castel-Branco

22-24 May 2024

ACQF Common profiles

Visit the interactive dashboard: https://acqf.africa/skills-data-focus/occupation-profiles-dashboard



Bridging qualifications and occupations:
a Data-Driven approach

1. **Connecting education with Labour Market Needs: t**he Occupational Profiles dashboard aims to seamlessly connect educational achievements (qualifications) with labour market demands (occupations)

2. **Data-Driven insights:** utilizing big labour market data, the approach is grounded in real-world demands and trends

3. Guided standards for qualifications: **these data-driven common occupation profiles can guide and inform the design of qualification standards, making them more relevant and aligned with actual job market needs.**

4. **Educational alignment with market demands:** ensures that educational institutions can prepare students with the competencies and skills that are truly sought after in the workforce, enhancing employability and career success.

Labour market in increasing in complexity and is rapidly changing at an unprecedented pace

Competition for talent, digitalization of occupations, skill-based hiring, relevance of soft skills, remote-working, the impact of AI on occupations are only few of the big challenges we've to deal with nowadays.

Occupational Profiles are the **real-time visualization tool** that help students, education providers and policy makers facing these challenges enabling jobs and study pathways analysis with **Data-Driven Insights**

Understanding skill needs and how they are changing is a must

75%

of companies cite that they are facing acute talent and skills shortages.

WEF / Manpower 2022

37%

of the top 20 skills requested have changed over the past 5 years, and 1 in 5 is entirely new.

Lightcast Skills Disruption Index

48%

of CEOs say labour/skills shortages are in their top 3 concerns behind inflation and geopolitical uncertainty.

Deloitte CEO Survey Feb 2023

44%

of skills that workers use are expected to change in the next 5 years.

WEF - Future of Jobs 2023

24%

of skills have changed on average globally since 2015. In the Tech sector this is as high as 57%.

LinkedIn Economic Graph 2022

1 billion

of the world's jobs are liable to be radically transformed by technology in the next decade.

WEF / Davos 2023

ACQF
African Continental Qualifications Framework

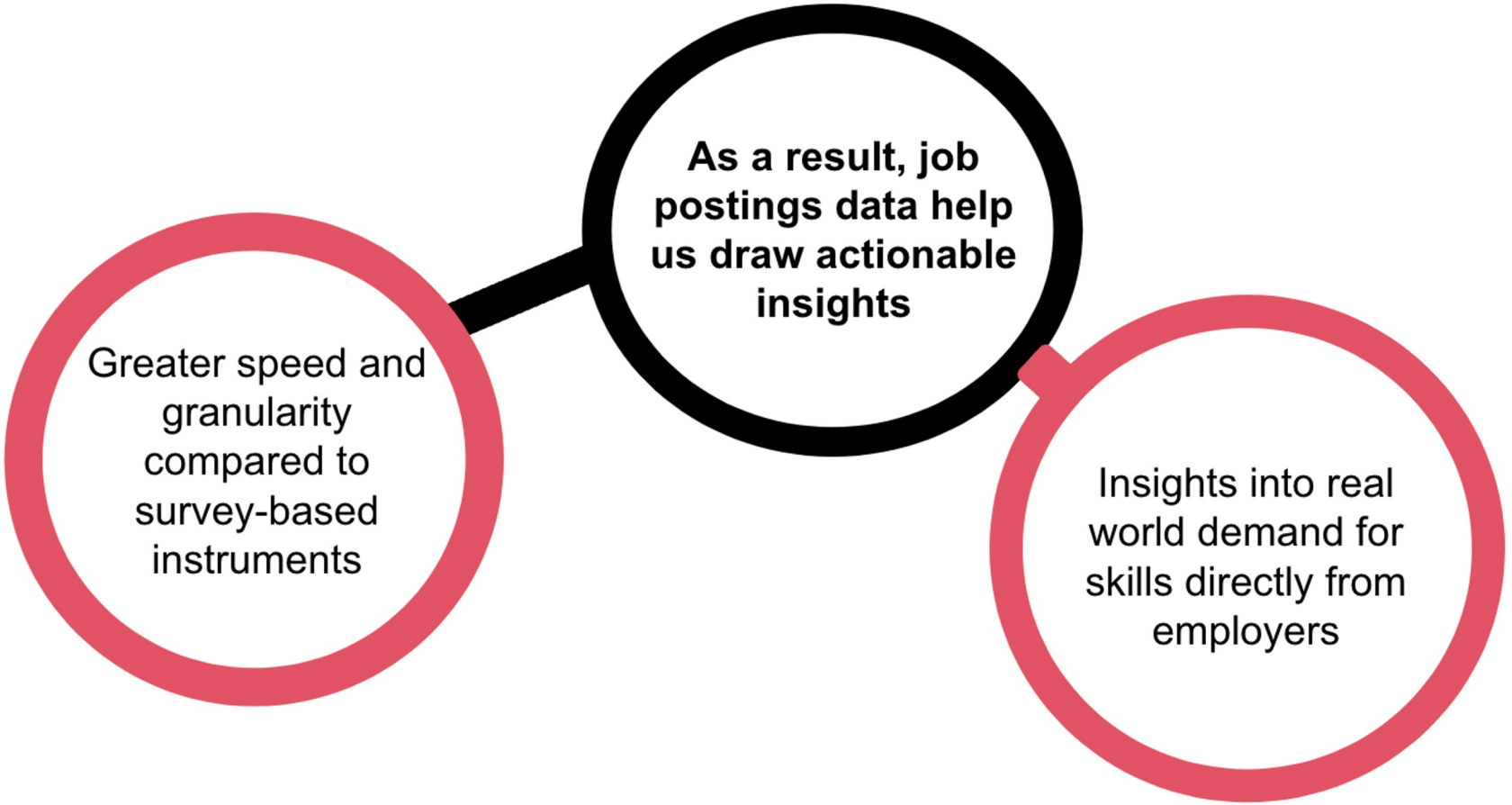
How can we get data on skills needs?

With job postings data and a common language we can understand skill needs insights

ACQF
African Continental Qualifications Framework

Why online job postings?

Online job postings is a rich and almost real time data source on skills



ACQF
African Continental Qualifications Framework

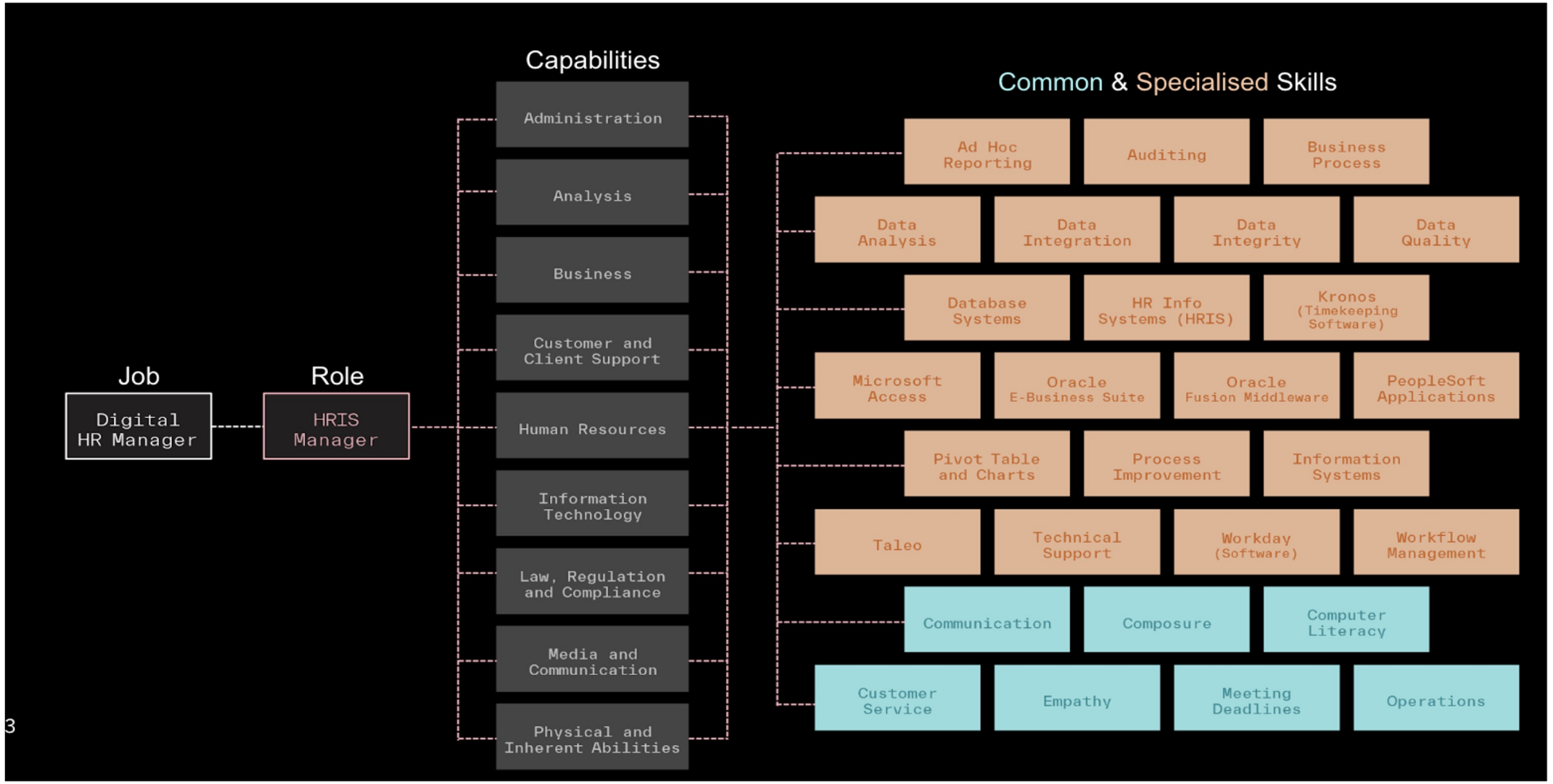
Common Occupational Profiles

A **data-driven definition of a job**, with the focus on skills insights.

They mix conventional data and new metrics to inform about the demand and the possible study pathways to an occupation (qualification).

How can we create a common occupational profile?

Taxonomies help us provide structure and understand the data



Common = transversal

Specialised = job-specific

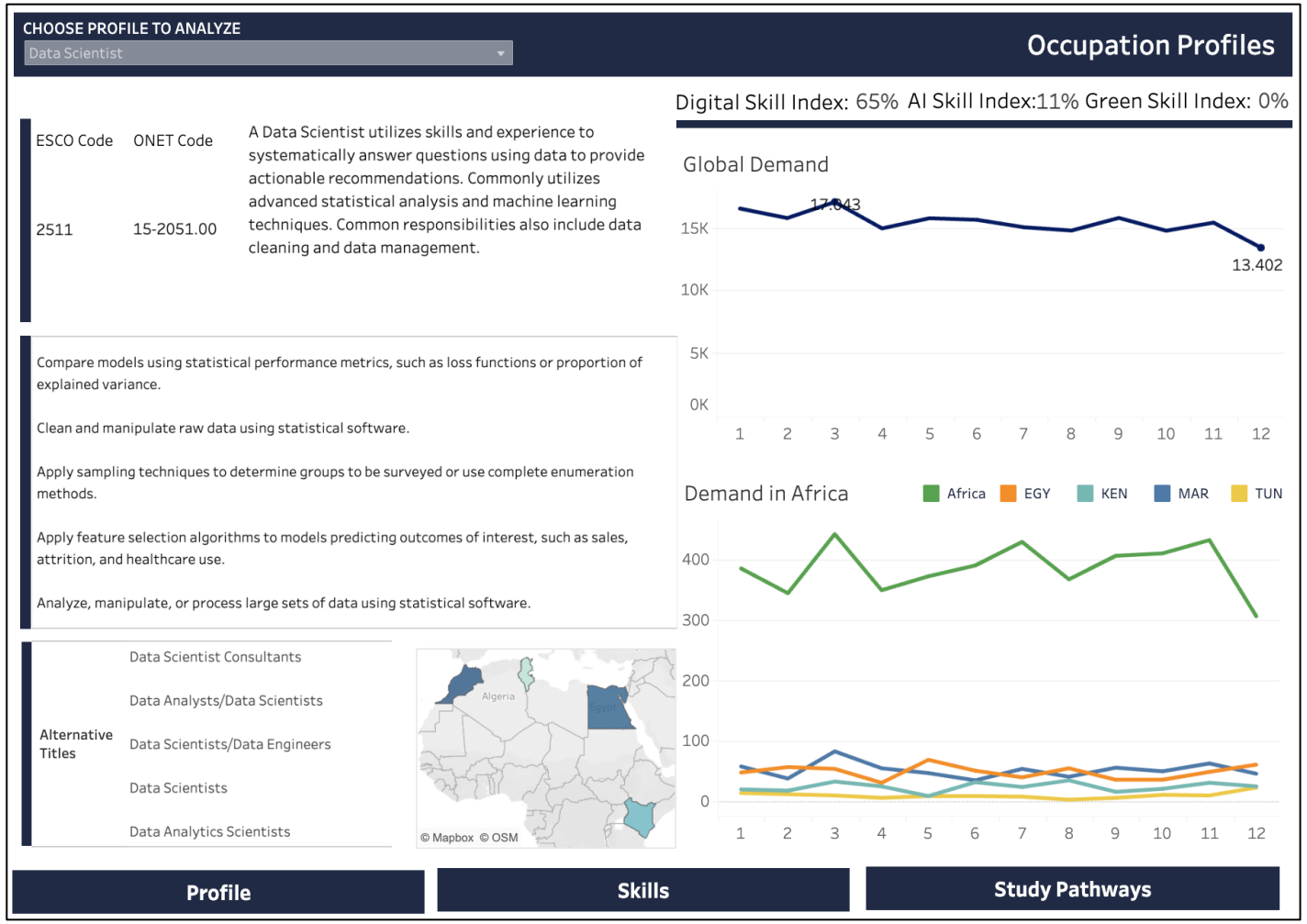
ACQF
African Continental Qualifications Framework

ACQF Common Profiles (1)

- **Data-driven**: based on existing large databases of the ETF Big Data for LMI project (4 countries) supplemented by data from other sources. Data scrapping, processing, deduplication, classification, visualisation – AI-aided methodology.
- **Data visualisation**: interactive dashboard on ACQF website
- **Scope**:
  - Occupations on demand – skills frequency
  - Profiles of common skills
  - Growth rate
  - Difficulty to fill vacancies
  - Career and study pathways: visualising the relationships between jobs;
- **Data**:
  - Data from taxonomies
  - Job vacancies published online – verified job portals in the covered region;
  - Occupations tasks: from O*Net; Skills: ESCO
  - Related education pathways: data from registers of National qualifications frameworks accessible online.
- **ESCO**: The approach identifies common skills for a first sample of 10 occupations. Total planned occupations: 20. ESCO Skills (Version 1.1.1) is the taxonomy we use to classify the skills terms.
- **Time**: from Oct 2022 – to-date. Data scraping is done continuously and releases onto the online Dashboard - monthly
- **Geographic coverage**
  - 4 African countries – Egypt, Morocco, Tunisia, and Kenya
  - Africa-wide, EU and Global trends

From skills data to common occupational profiles

Skills frequency and international taxonomies are the starting point…



The dashboard introduces the user with the possibility to choose a specific profile and get the following information regarding it:

- Description of the chosen profile
- Correspondence of chosen profile with profiles from ESCO and O*NET taxonomies
- Task Description provided by O*NET
- Alternative job titles the profile is presented on the market
- Global Demand (number of job postings) for the job profile within 2023
- Demand within all the African countries and 4 countries Egypt, Kenya, Morocco and Tunisia specifically

ACQF
African Continental Qualifications Framework

How to inform on skills trends?

Defining, distinguishing and necessary skills

1. Defining Skills represent the day-to-day tasks and responsibilities of the job. An employee needs these skills to qualify for and perform successfully in this occupation.

2. Distinguishing Skills are advanced skills that are called for occasionally. An employee with these skills is likely more specialised and able to differentiate themselves from others in the same role.

3. Necessary Skills are specialised skills required for that job and relevant across other similar jobs. An employee needs these skills as building blocks to perform the more complex Defining Skills.

ACQF
African Continental Qualifications Framework

ACQF: Common skills profiles

From skills data to common occupational profiles

Capture and compare emerging trends

The Skills section in the dashboard analyzes skills for the selected job profile:

- Top Specialized skills by recall of skills within the available job postings Globally, within EU and among job postings of specific 4 countries in Africa. Recall is shown as a % share of available skills
- The data is color coded by the projected skill growth on the market. The exact value of the projected growth can be seen upon hovering on the skill in the skill Tooltip
- Tooltip also demonstrates the detailed description of the skill

Area: EU
Skill Name: **Algorithms**
Skill Growth: 7,82%
Frequency in the Market: 25,00%
Difficulty to Fill: High difficulty to fill
ESCO Label: algorithms

Description: Algorithms is a specialized skill that involves developing a logical process or a set of rules to solve a problem or perform a particular task. It entails identifying the steps required to solve a problem efficiently and optimizing them to minimize time complexity and maximize performance. Algorithms are used in various fields such as computer science, mathematics, and engineering, and require expertise in data structures, programming languages, and problem-solving techniques. Developing effective algorithms is a critical skill for software developers, data scientists, and other professionals who work with large datasets and complex systems.

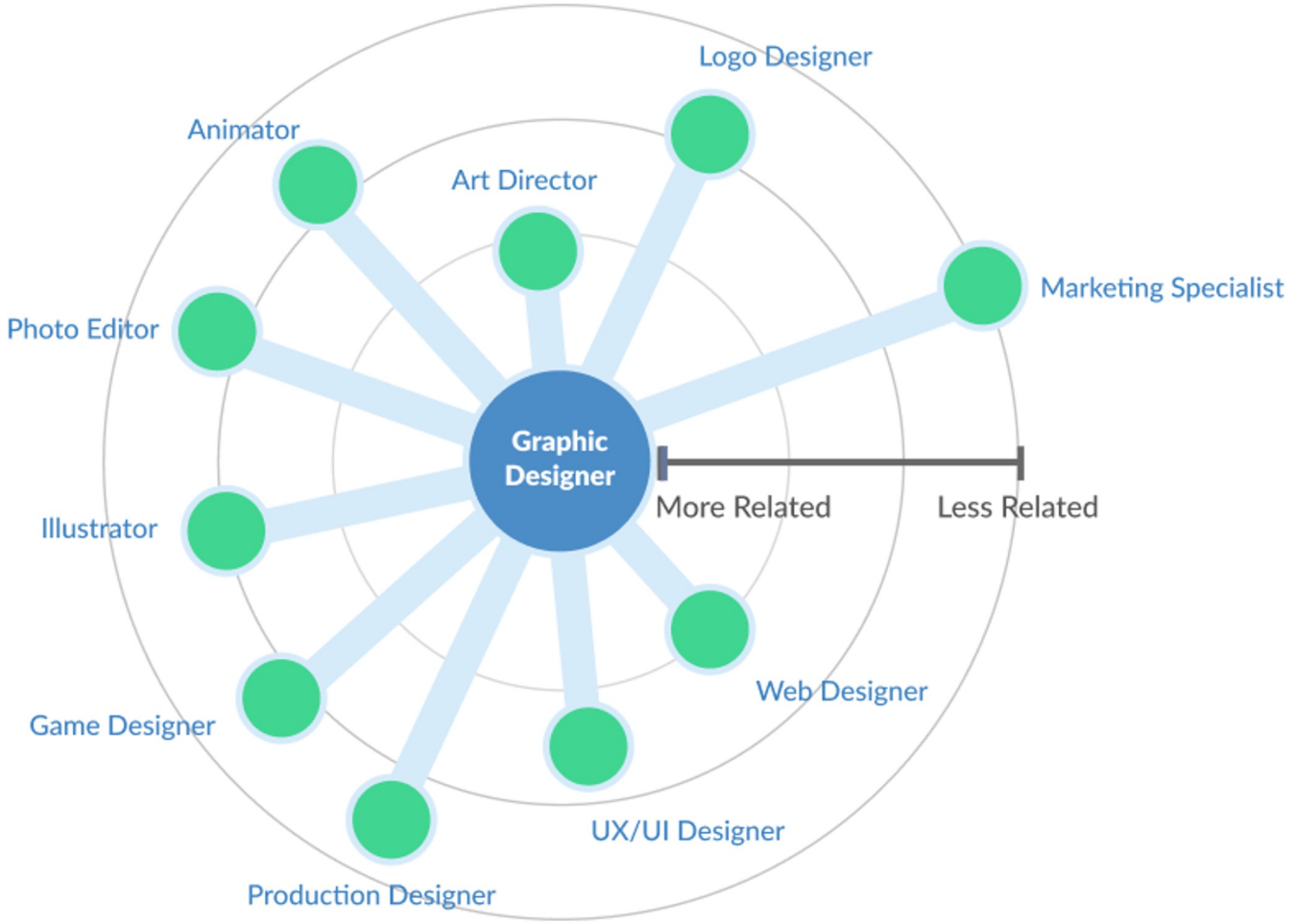
Career and Study Pathways

Career and Study Pathways: Visualizing the relationship between jobs.

What are the similar jobs?

How similar are these roles?

How do I move from one job to another?

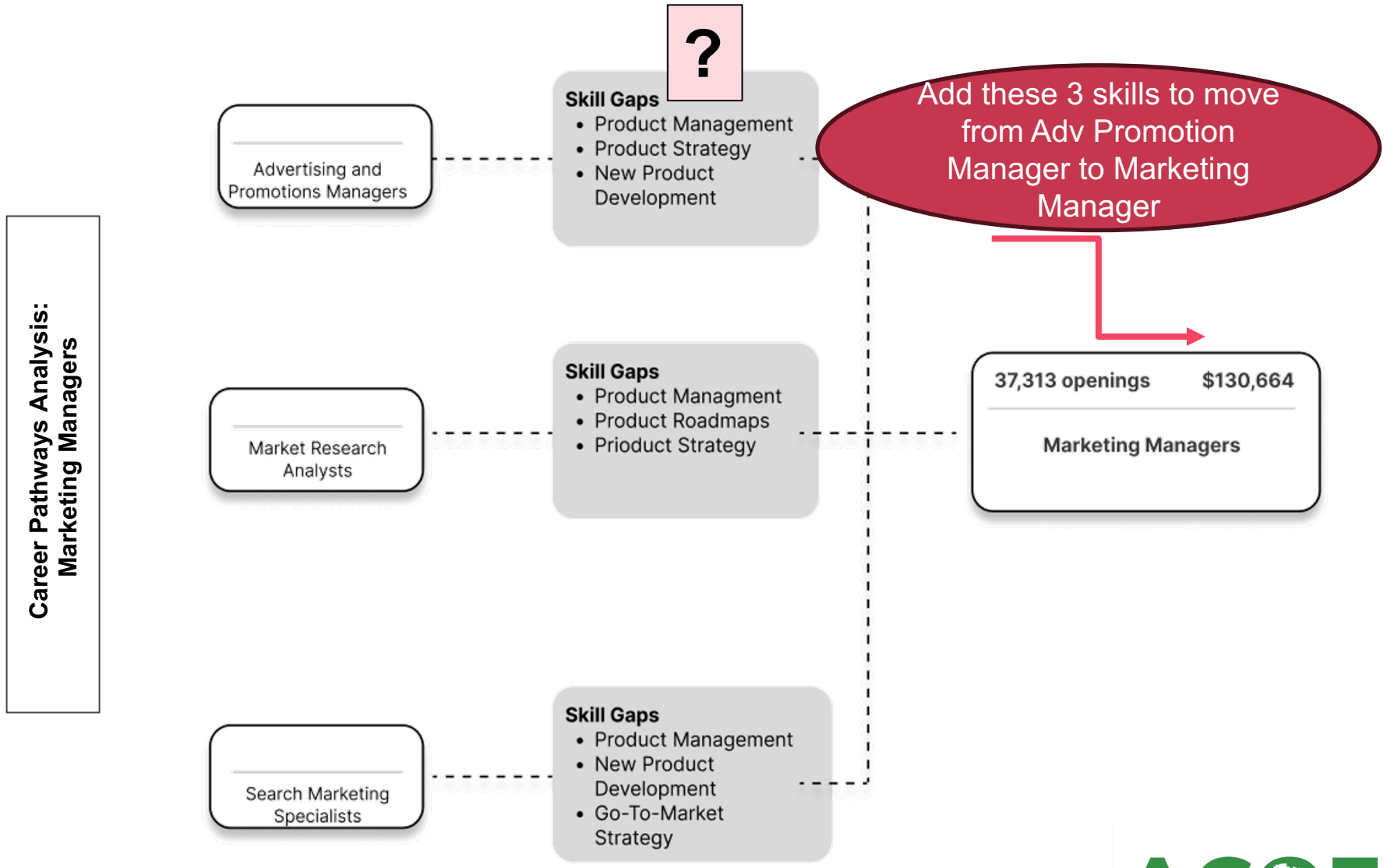


ACQF
African Continental Qualifications Framework

Next-Step Jobs: Career and Study Pathways

Career Pathways enables education providers to identify common skills requirements to advance the local workforce into a need-to-fill role (job).

Pathways are built between roles with strong skill adjacencies, and specify the last-mile skill gaps that can be addressed with targeted training.



ACQF
African Continental Qualifications Framework

From skills data to common occupational profiles

Identifying career and study pathways

1. **Advancement**: Jobs that pay more and are within the same occupation group as the source occupation.

2. **Lateral Advancement**: Jobs that pay more but require transition to a new occupational group as opposed to the source occupation.

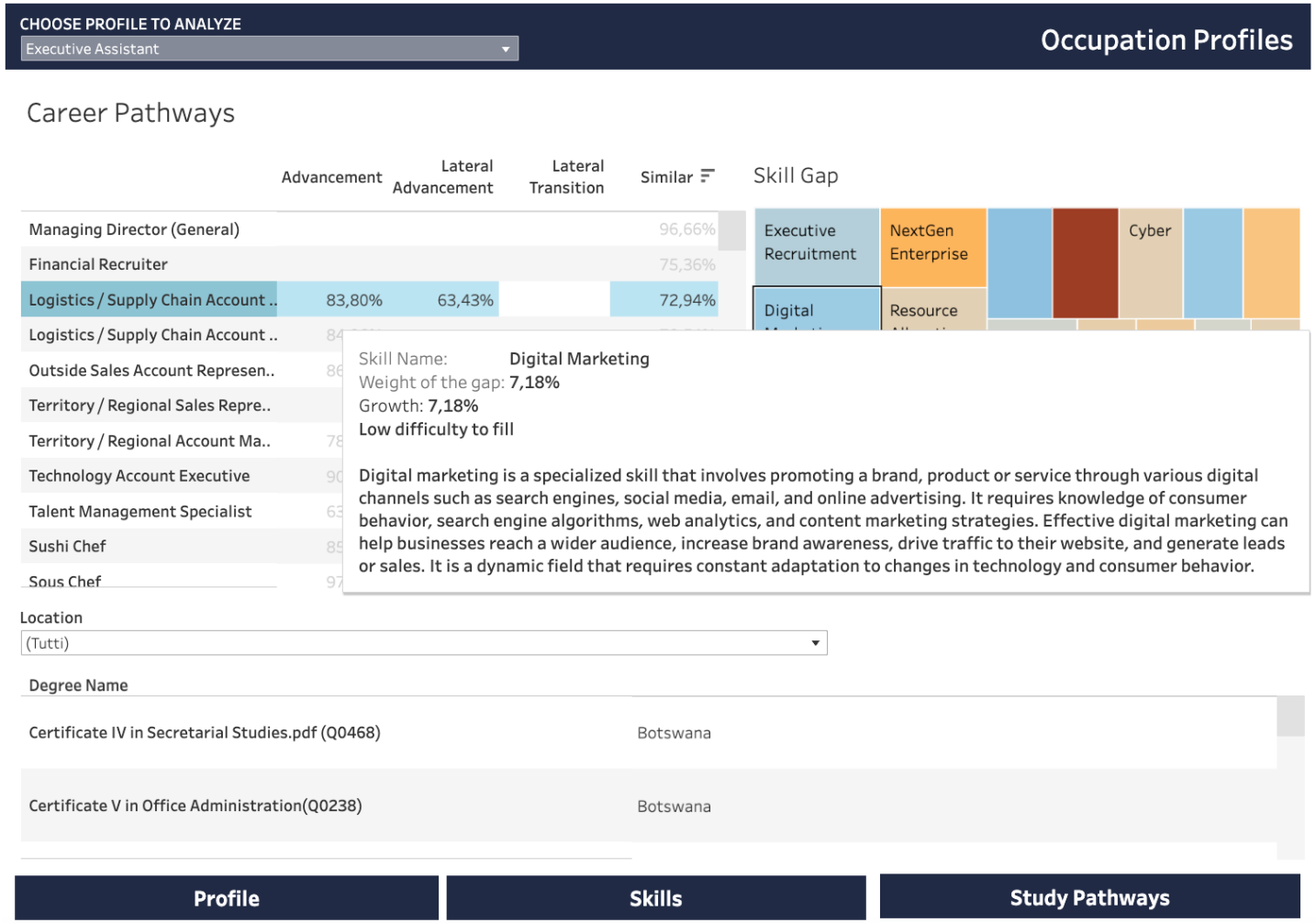
3. **Similar:** Jobs that pay a comparable salary and are within the same occupation group as the source occupation.

4. **Lateral Transition:** Jobs that pay a comparable salary but require transition to a new occupation group as opposed to the source occupation.

ACQF
African Continental Qualifications Framework

From skills data to common occupational profiles

Identifying career and study pathways



The section analyzes the pathways for the selected profile: **career pathways** related to the specific profile and **educational pathways** leading to them.

For the selected profile, list of occupations are presented, distributed by 4 different hierarchical categories: Advancement, Lateral Advancement, Lateral Transition or Similar level. For each of them, the index of similarity is given.

Upon selecting specific career, user can also see the skill gap existing from the chosen profile and the original profile of the analysis. The skills are color coded by the skill weight to analyze the gap.

User is also presented with the list of the qualifications connected to the profile of analysis at various locations in African countries.

ACQF
African Continental Qualifications Framework

What does this mean for policy-makers and education providers?

Policy-makers and education providers need to work together to link qualifications and demanded skills to respond to a rapidly changing labour market.

- **Planning and development:** which courses are more likely to provide students a strong career outcome?
- **Inform students:** communicate to students how your courses will prepare them for their future.
- **Course design:** what knowledge, competencies and attributes does a course need to develop to prepare students for the world of work?
- **Careers advice:** empower careers advisors with detailed insights to enrich their guidance, unlocking new possibilities for students.
- **Civic engagement:** engage with wider stakeholders with a common language of data.

ACQF
African Continental Qualifications Framework

4 main points to take-away

The building blocks of work

- **Skills** describe the competencies and experiences workers need to complete key tasks in their role

- Often described by employers in their **job adverts**

It's a complex world

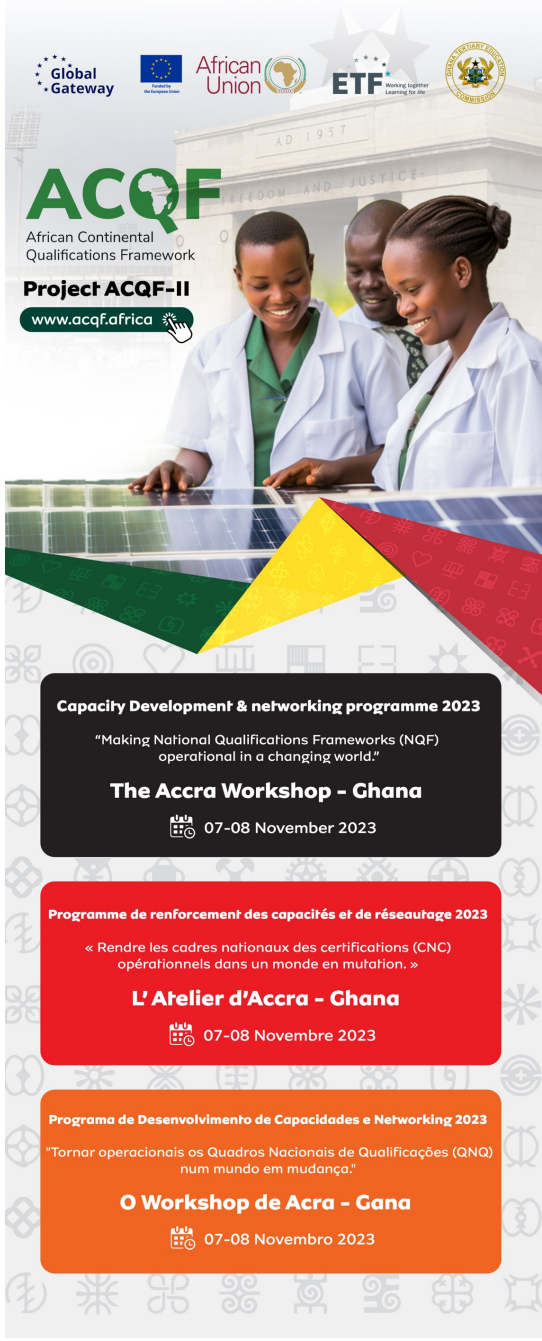
- **Macro-economic trends** are affecting different parts of the labour market in different ways (mix of skills supply and demand)

- It is critical to **use a data-driven approach**.

ACQF Common Profiles (2)

- **Main take-aways and recommendations:**
  - The ACQF common profiles are brand new.
  - We started dissemination and awareness raising of stakeholders in May 2024.
  - Much more dialogue and advocacy is planned – for buy-in and take-up.
  - First sample of occupations for elaboration of common profiles: top 10 jobs on demand; 2nd sample (next step): is being identified in dialogue with African stakeholders.
  - Recommendations: link the data on Common Profiles of Occupations with the data of Qualifications Platform (QCP), which is the flagship component of ACQF-II project.

Thank you - ecb@etf.europa.eu



02

Registers of qualifications – ACQF QCP

ACQF

Topics

- Overview on Qualifications registers and databases
- Questions for debate

Databases, registers, catalogues, repertoires

Qualifications and management tools

"Objects"

- Full qualifications – "Metacredentials"
- Part qualifications
- Micro-credentials
- Units
- Standards

"Tools"

- Classification(s), taxonomy: international, national
- Register of qualifications
- Other registers

ACQF

What is the Qualifications Register?

The Registration of Qualifications is a process whereby national quality-assured qualifications are placed in the NQF qualifications register/database

It is a process and tool for transparency and quality assurance.

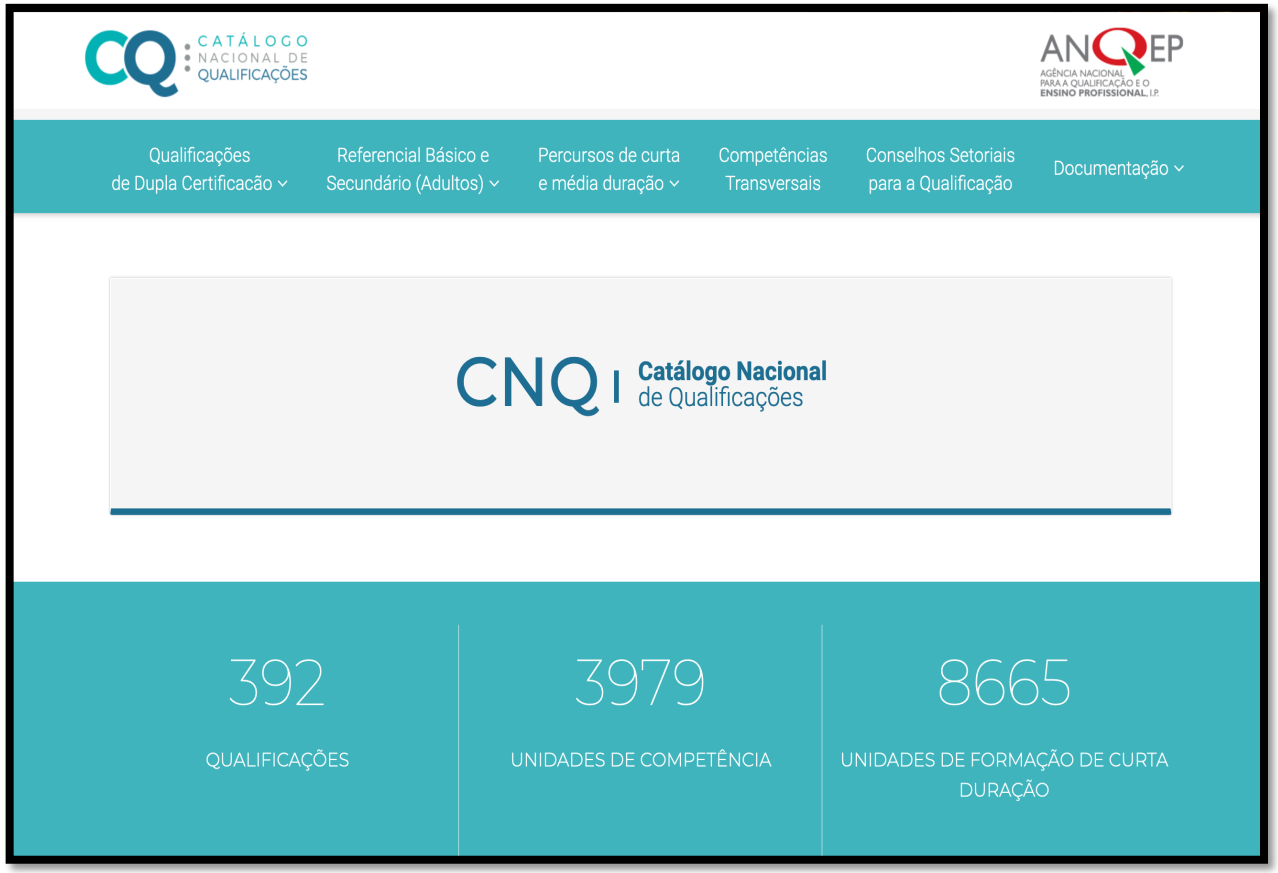
The structure of qualifications information may vary between countries; and the formats, functions, access, and digital platforms as well.

Country	Register / database of qualifications	Number of Qualifications and levels included	Key features
Botswana	Botswana Qualifications Authority – Register of qualifications	822 full qualifications All levels of NCQF	The register is searchable by title of qualification (search by key word tool). Qualifications documents can be viewed and downloaded.
Mauritius	National Qualifications and Unit Standards Maintained and managed by MQA	167 qualifications distributed in 22 sectors. As of 21/03/2022: 98 qualifications are published, 67 under review. Includes: qualifications of Levels 1 to 6 of NQF	The digital online database of National Qualifications and Unit Standards is accessible as a repository of qualifications files in PDF format. Qualifications at all levels (1—6) are structured in unit standards – in learning outcomes. Harmonized format.
Mozambique	National Catalogue of Professional Qualifications Managed and maintained by ANEP	164 qualifications registered, at levels 2 to 5. 149 published in the online catalogue (21/03/2022) 19 independent modules	The digital online National Catalogue is accessible as a repository of qualification files in PDF format. All qualifications - standardised format, which includes: general information, units of general competencies, units of vocational competencies, training modules (general and vocational)

Country	Register / database of qualifications	Qualifications included	Key features
Cape Verde	National Catalogue of Qualifications UC-SNQ	64 full qualifications (levels 2 to 5 of the NQF) Standards RPL	The digital online Catalogue is accessible as a repository of PDFs. All qualifications are structured based on a standardised format, including: professional profile, units of competence (learning outcomes and assessment criteria), training programme (modules) and training module for work context. The qualifications in the Catalogue are distributed in 15 professional families. The Catalogue includes also a new Transversal Training Module of 3 units (entrepreneurial competences).
South Africa	SAQA: register of qualifications and part-qualifications Managed and maintained by SAQA	Large number of qualifications All NQF levels	The SAQA online register contains searchable databases: 1. All qualifications and unit standards (no matter their status) 2. Registered qualifications and unit standards (NQF qualifications) 3. Qualifications and unit standards that have passed their registration end date 4. Professional Bodies and Professional Designations

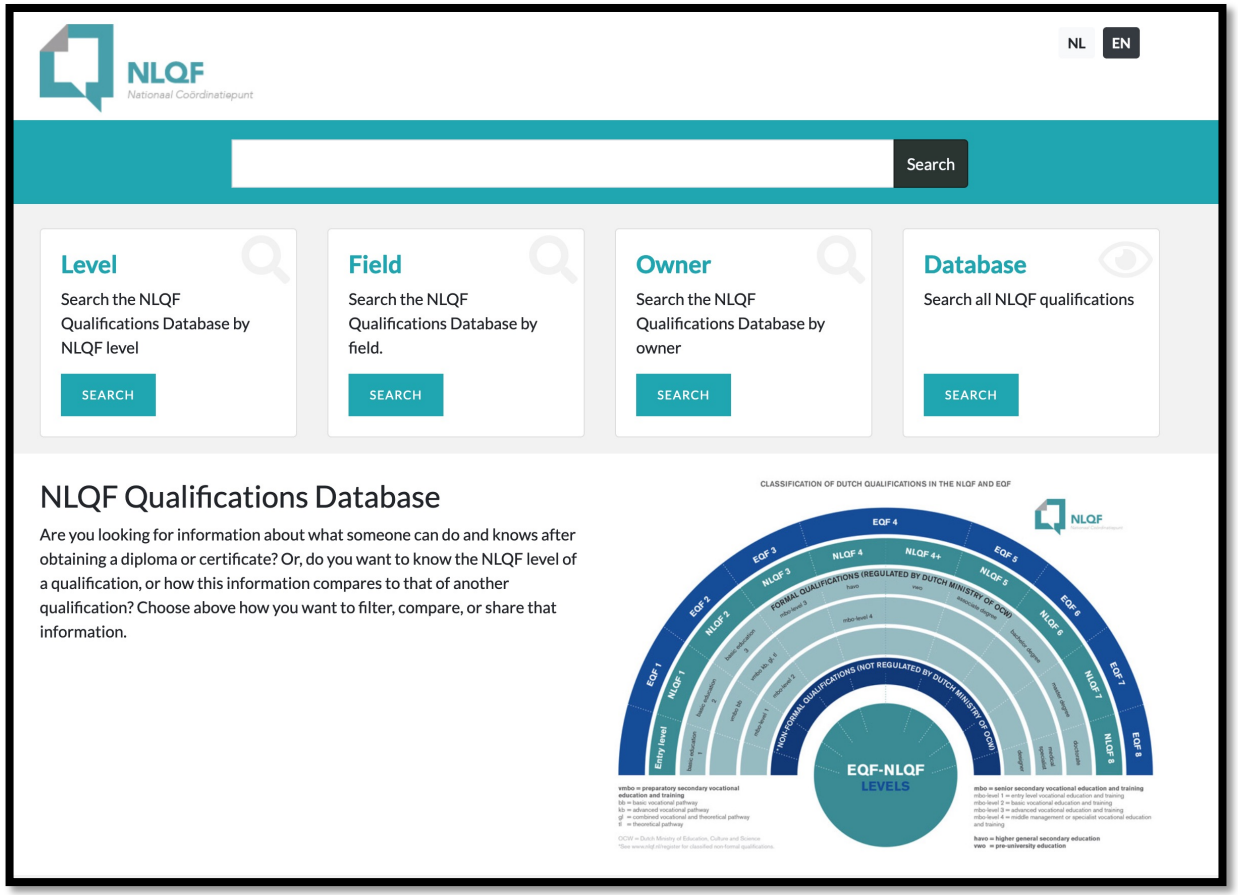
Exemples from EU

Portugal



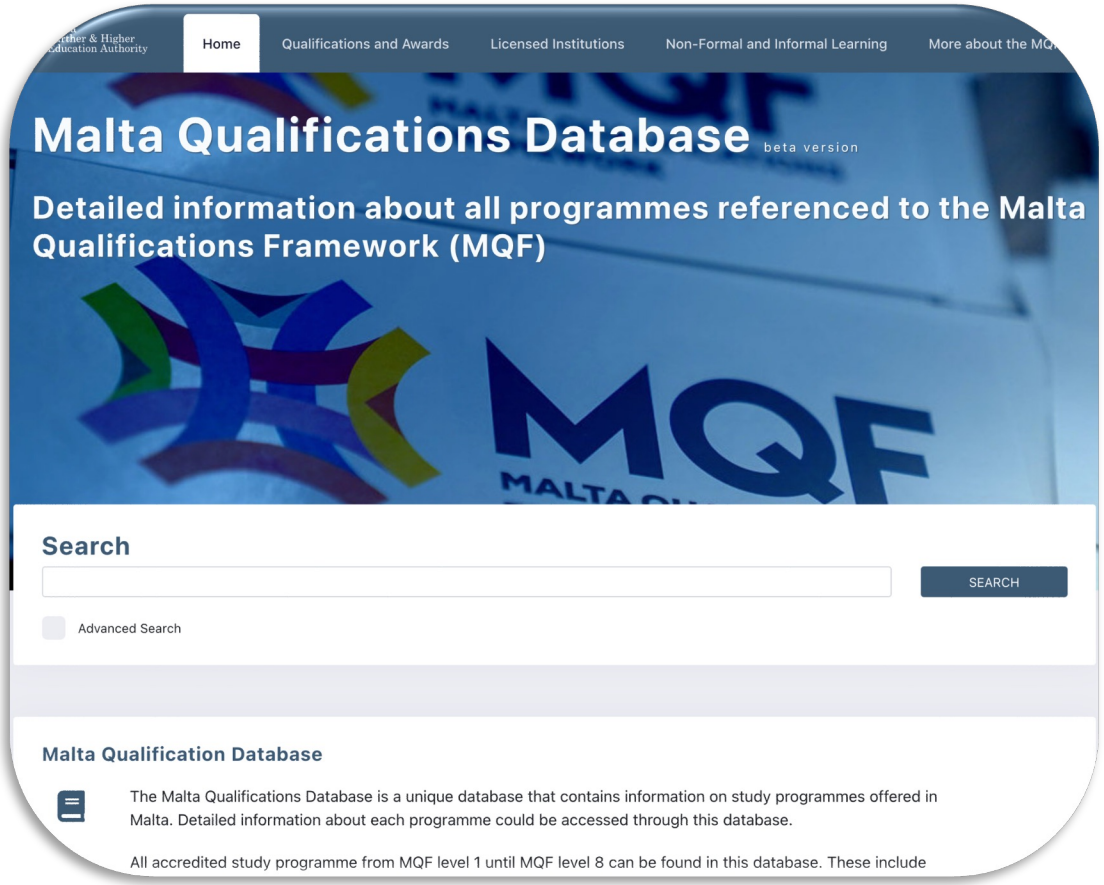
https://catalogo.anqep.gov.pt/

The Netherlands



https://database.nlqf.nl/

Exemples from EU



http://qualifications.ncfhe.gov.mt/#/dashboard

Slovenia: https://www.nok.si/en/sqf-register

Inventory of Qualifications Sierra Leone (discussion, proposal)

- What qualifications (programmes) are there in the different sub-sectors?
  - Higher education
  - TVET
  - General education
  - Complementary education
  - Others
- What sources of information on programmes and qualifications?
  - GTEC, CTVET, TVET Service…others…?
- What information – how is it structured?
- Inventory: in simple Excel file

Inventory of Qualifications Sierra Leone (discussion, proposal)–(2)

- Elements for structuring the information on qualifications

a) Required

1. Title of qualification
2. Field of education and training (according to ISCED-2013, fields of education and training – ISCED-F 2013)
3. Country code
4. NQF level – ACQF level
5. Awarding body or competent authority
6. Description of the qualification: short statements on the learning outcomes – what the learner is expected to know, understand and be able to do
7. Credit points/notional workload needed to achieve the learning outcomes (if available)
8. Expiry date (if available)
9. Link to qualifications database (if available)

- ISCED-F 2013, at: http://uis.unesco.org/sites/default/files/documents/isced-fields-of-education-and-training-2013-en.pdf

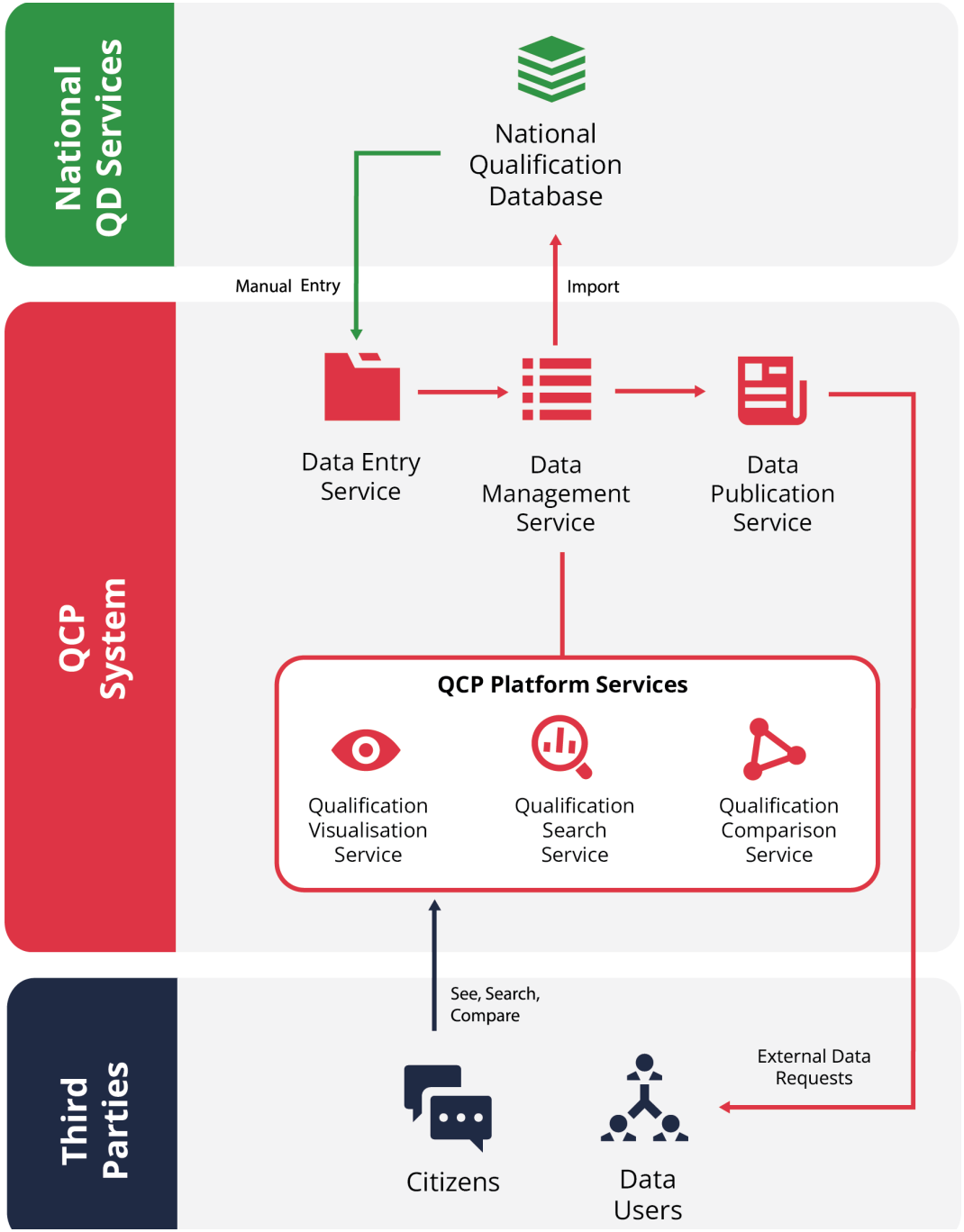
Inventory of Qualifications Sierra Leone

a) Optional

1. External quality assurance/regulatory body
2. Ways to acquire the qualification
3. Relationship to occupations or occupational classification.

03

ACQF QCP



ACQF QCP

- 2 layered database of qualifications: national and continental
- Architecture: software and data model
- Training - for national technical teams
- Demonstration – end Dec 2024
- Data collection
- Ownership of national DB: countries

ACQF

Tenki !