Global Gateway

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ETF Working together Learning for life
European Training Foundation

ACQF
African Continental Qualifications Framework

Guiné-Bissau

Session 13:
The Accra Workshop

New skills for the double digital and green transitions. Focus on green skills

New dimensions, new data, new formats.

Common theme: Making Qualifications Frameworks operational in a time of change

The Accra Workshop

Speakers: Eduarda Castel-Branco, Olavo Correia

ACQF

Topics of this PPT in 3 languages

1. Change
2. Green skills growth, greener jobs
3. Employers' demand for green skills (Kenya, Egypt) – data driven
4. Green skills – 3 types
5. Options, solutions to affirm the place of green skills
6. Examples of strategies green skills and education for sustainability
7. Green skills award…to Kenya!!!

01

Change

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

Skills 2027: top in-demand…

The World Economic Forum's Future of Jobs 2023 report finds **analytical thinking, creative thinking and AI and big data will be top in-demand skills by 2027.**

Leadership and social influence and curiosity and lifelong learning are among other skills expected to see growing demand.

Six in 10 workers will require training before 2027, but only half of workers are seen to have access to adequate training opportunities, according to the report. Training priorities of companies (42%): AI and Big Data

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.

Future of Jobs: top 10 skills 2023

Top 10 skills of 2023

WORLD ECONOMIC FORUM

1. Analytical thinking	6. Technological literacy
2. Creative thinking	7. Dependability and attention to detail
3. Resilience, flexibility and agility	8. Empathy and active listening
4. Motivation and self-awareness	9. Leadership and social influence
5. Curiosity and lifelong learning	10. Quality control

Type of skill

Cognitive skills | Self-efficacy | Management skills | Technology skills | Working with others

Source
World Economic Forum, Future of Jobs Report 2023.

Note
The skills judged to be of greatest importance to workers at the time of the survey

Cognitive skills top the list for 2023. Image: World Economic Forum

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

Future of Jobs: top 10 skills by 2027

Top 10 skills on the rise

WORLD ECONOMIC FORUM

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

Future of Jobs Report 2023 Image: World Economic Forum

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

Jobs: growing and declining

Fastest growing vs. fastest declining jobs

WORLD ECONOMIC FORUM

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

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

Source
World Economic Forum, Future of Jobs Report 2023.

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

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

02

Green growth, greener jobs

ACQF 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, China, Japan, South Korea's Gren New Deal, Canada, Africa – green stimulus packages

Major implications for jobs, education, and skills

A) Drivers

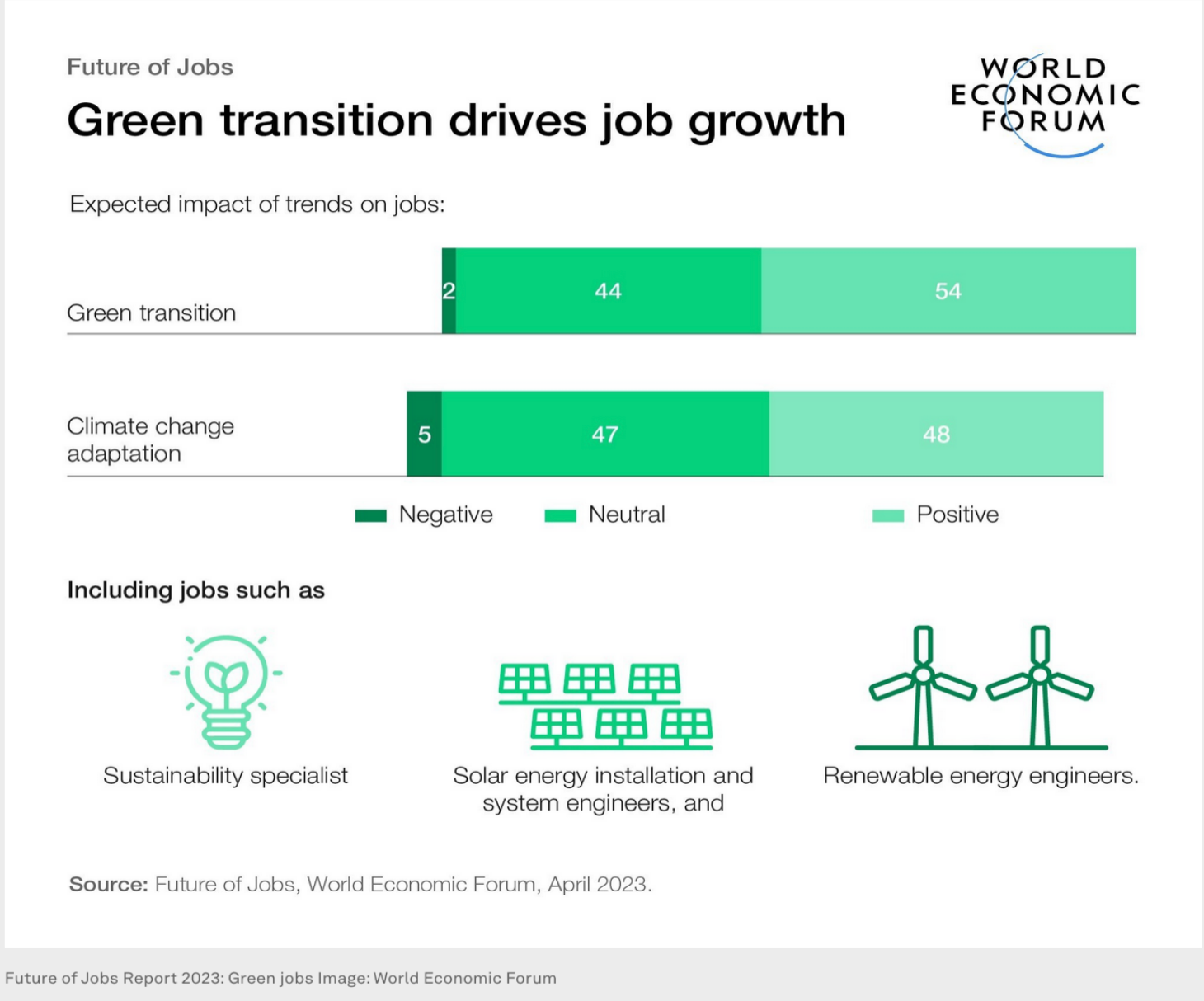
- **Environmentally friendly** technologies, production processes, products, services, and business models across all sectors of the economy;
- The way **traditional occupations** are performed (and taught) is changes and creates **new occupations**;
- Creates a demand for new skills and knowledge and the need to **upskill** and **reskill** large numbers of people;

B) Change in education

- Renew, change curricula, programmes, qualifications
- Train / retrain teachers

- Need to increase **environmental awareness** and specific skills 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 Report 2023: Green jobs Image: World Economic Forum

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.**

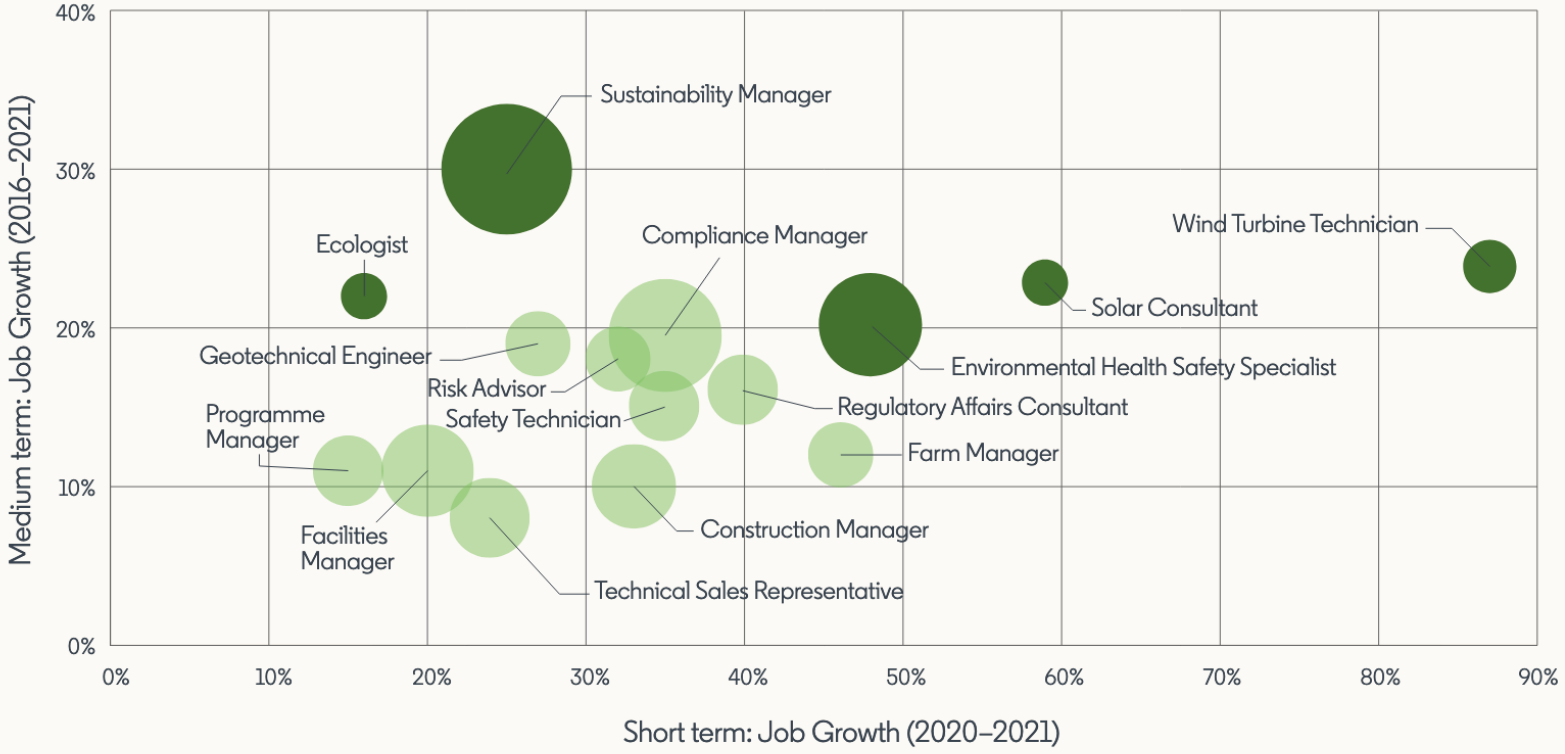
https://www.weforum.org/agenda/2023/04/future-jobs-2023-fastest-growing-decline

Green jobs – Green skills

LinkedIn, Economic Graph, 2022

- https://economicgraph.linkedin.com/content/dam/me/economicgraph/en-us/global-green-skills-report/global-green-skills-report-pdf/li-green-economy-report-2022.pdf

Chart 2: Fastest-growing green and greening jobs globally



Bubble size indicates share of countries in the sample where the job was among the fastest-growing in 2016–2021. Smallest: 5%; Largest: 50%. Bubble shade indicates type of job. Dark: Green job; Light: Greening job.

Definitions

Green skills: are those that enable the environmental sustainability of economic activities

Green jobs: are those that cannot be performed without extensive knowledge of green skills

Greening jobs: can be performed without green skills, but typically require some green skills

Greening potential jobs: can be performed without green skills, but occasionally require some level of green skills

Non-green jobs: are those that do not require green skills to be performed

Green talent: a LinkedIn member who has explicitly added green skills to their profile and/or are working in a green or greening job

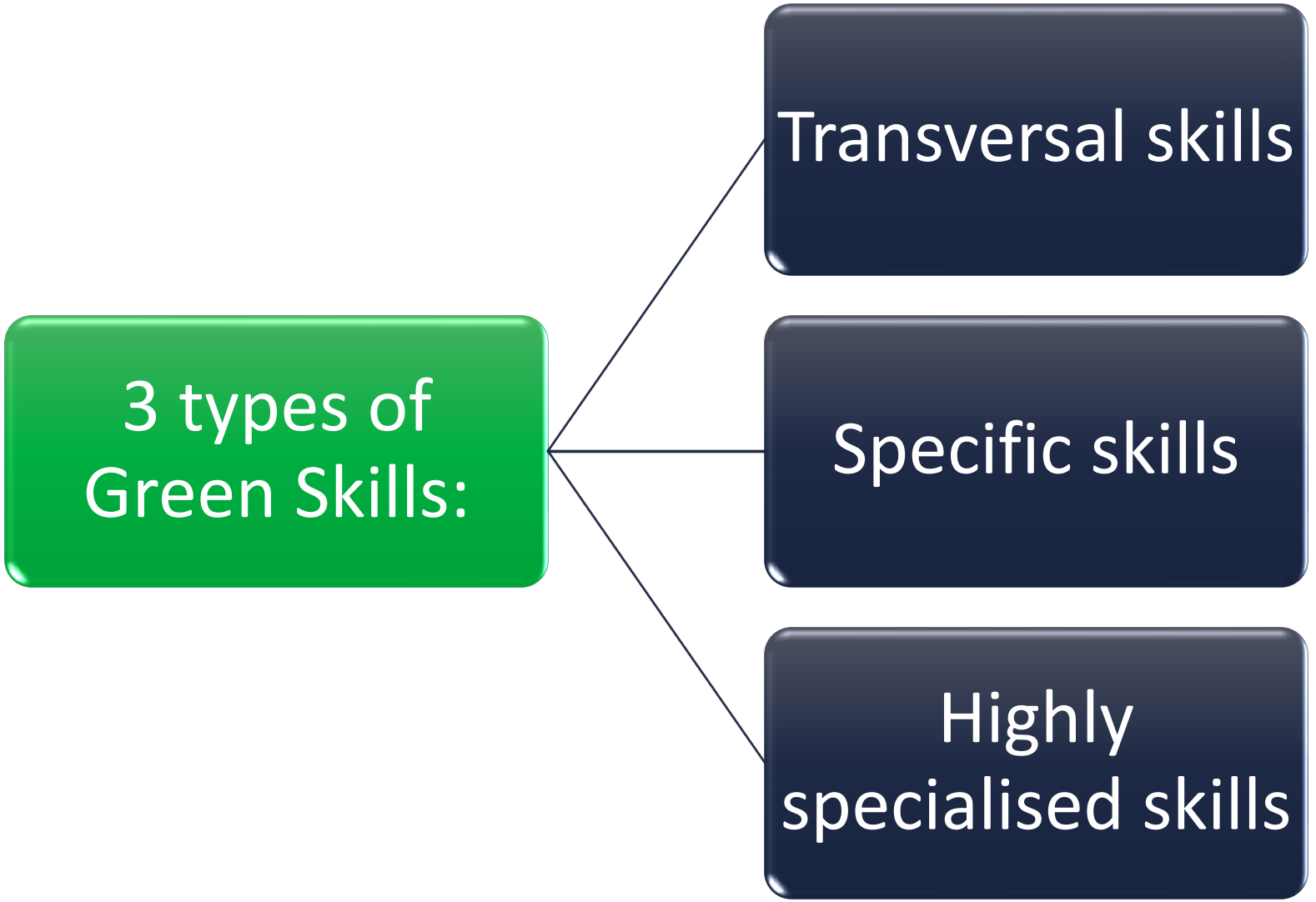
03

Green skills: employers demand

Green skills Employers' demand

ETF Data – Online Job Vacancies Kenya, Egypt

Green skills: definition



Definitions

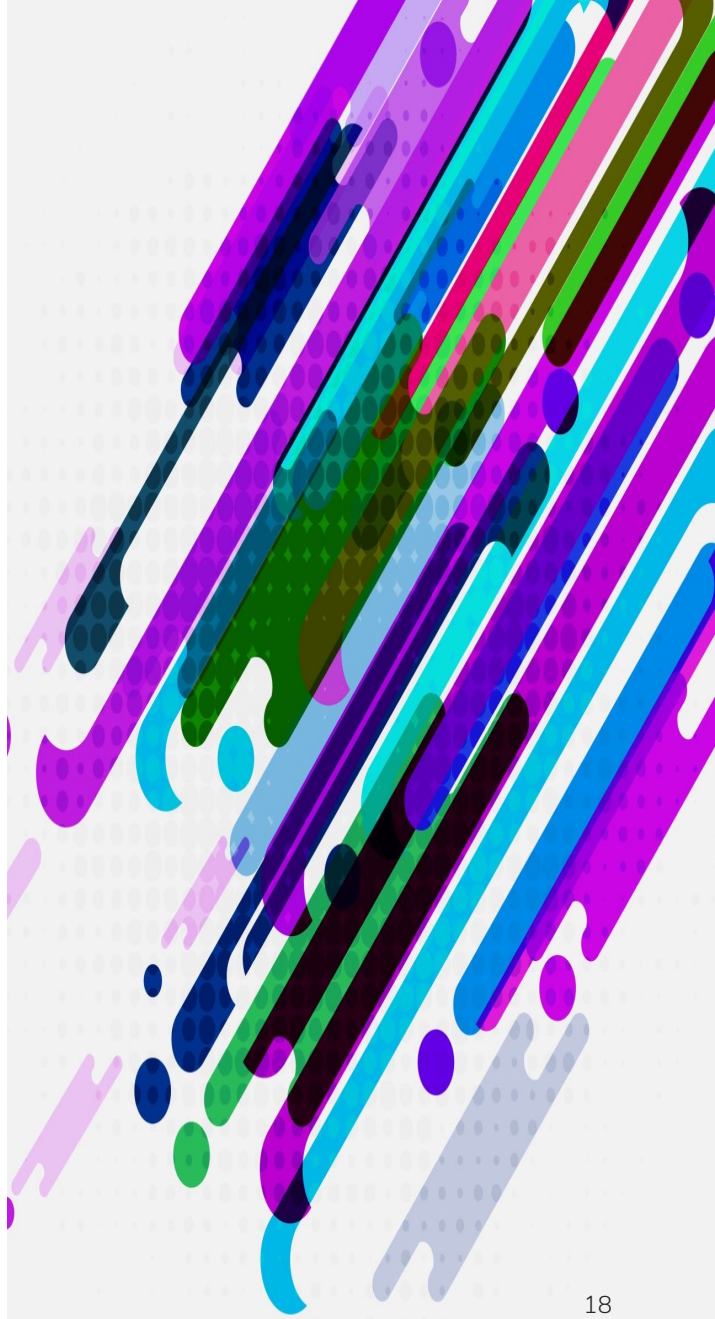
Green skills – an important area of debate and policy action and which has become a priority in research (quantitative and qualitative) and social communication. Several international organisations are working on the analysis and taxonomies related to green competences.

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.

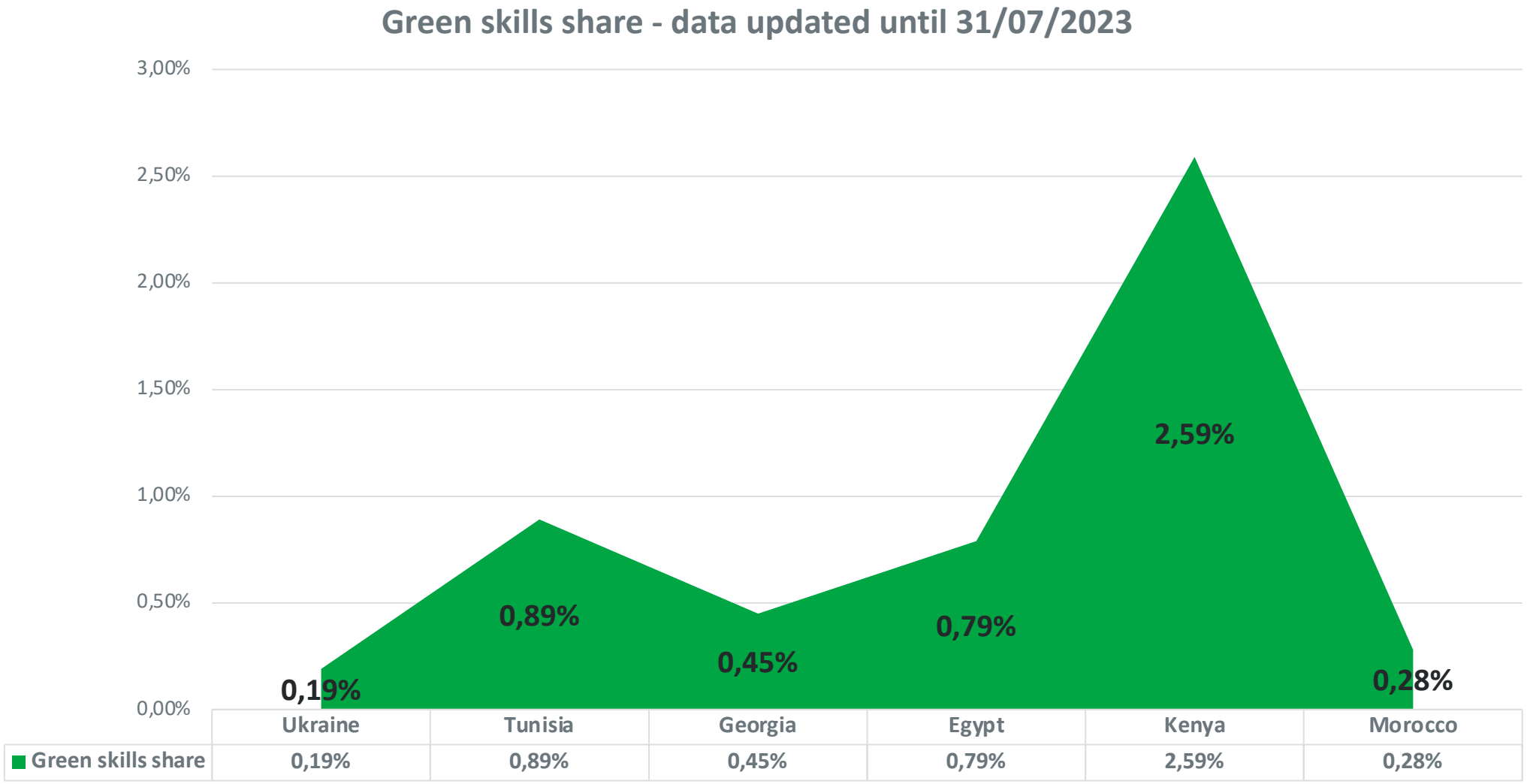


Analysis of demand for skills: online job vacancy data

- Dashboards ETF project

https://solutions.emsibg.com/?pc=x$fhADtD*cu$BjY9

ETF project: Online job vacancy – Big data for LMI



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

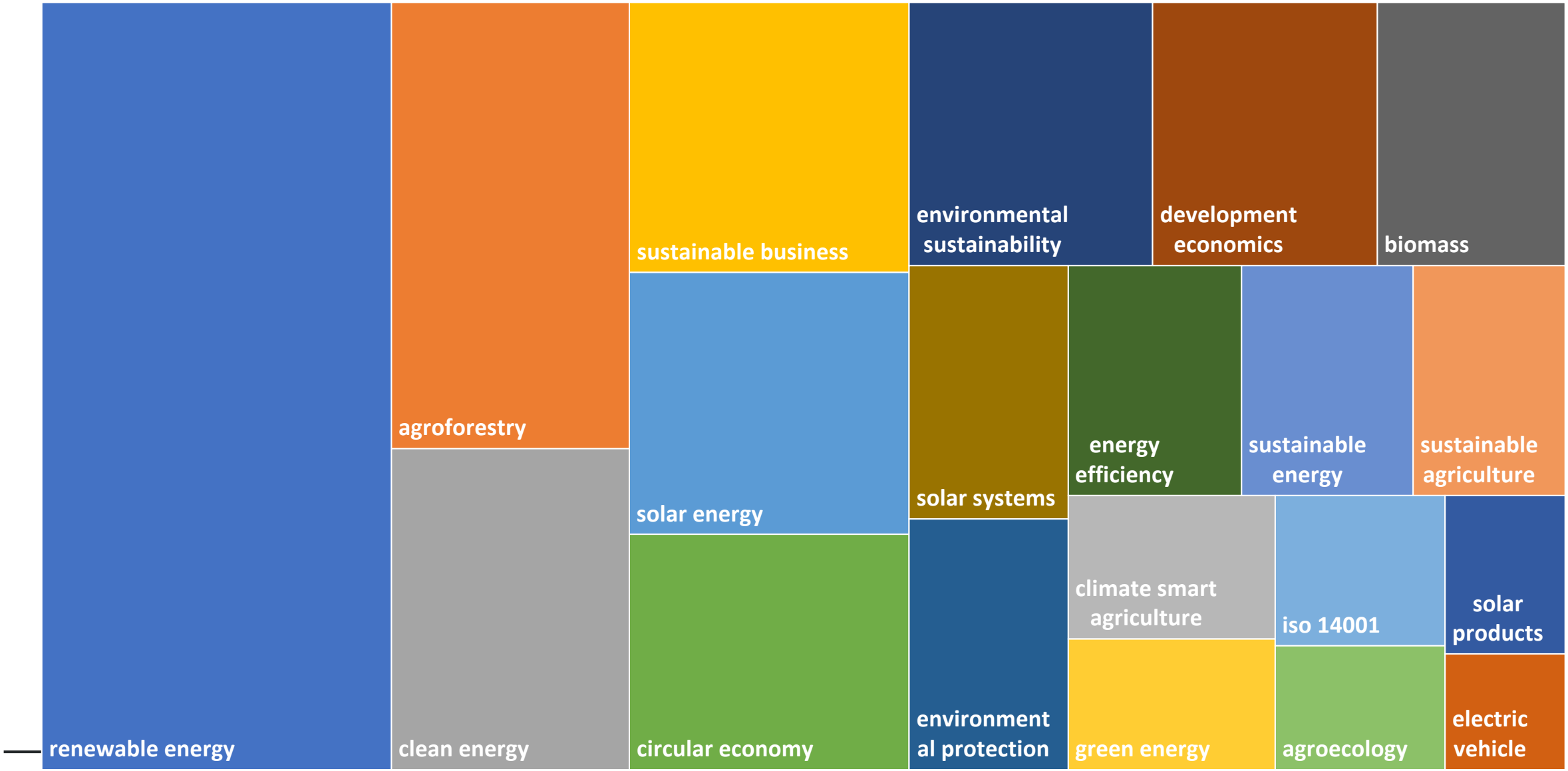
Kenya: highest green skills share, Ukraine – the lowest

Used green skills taxonomy: ETF (225 terms)

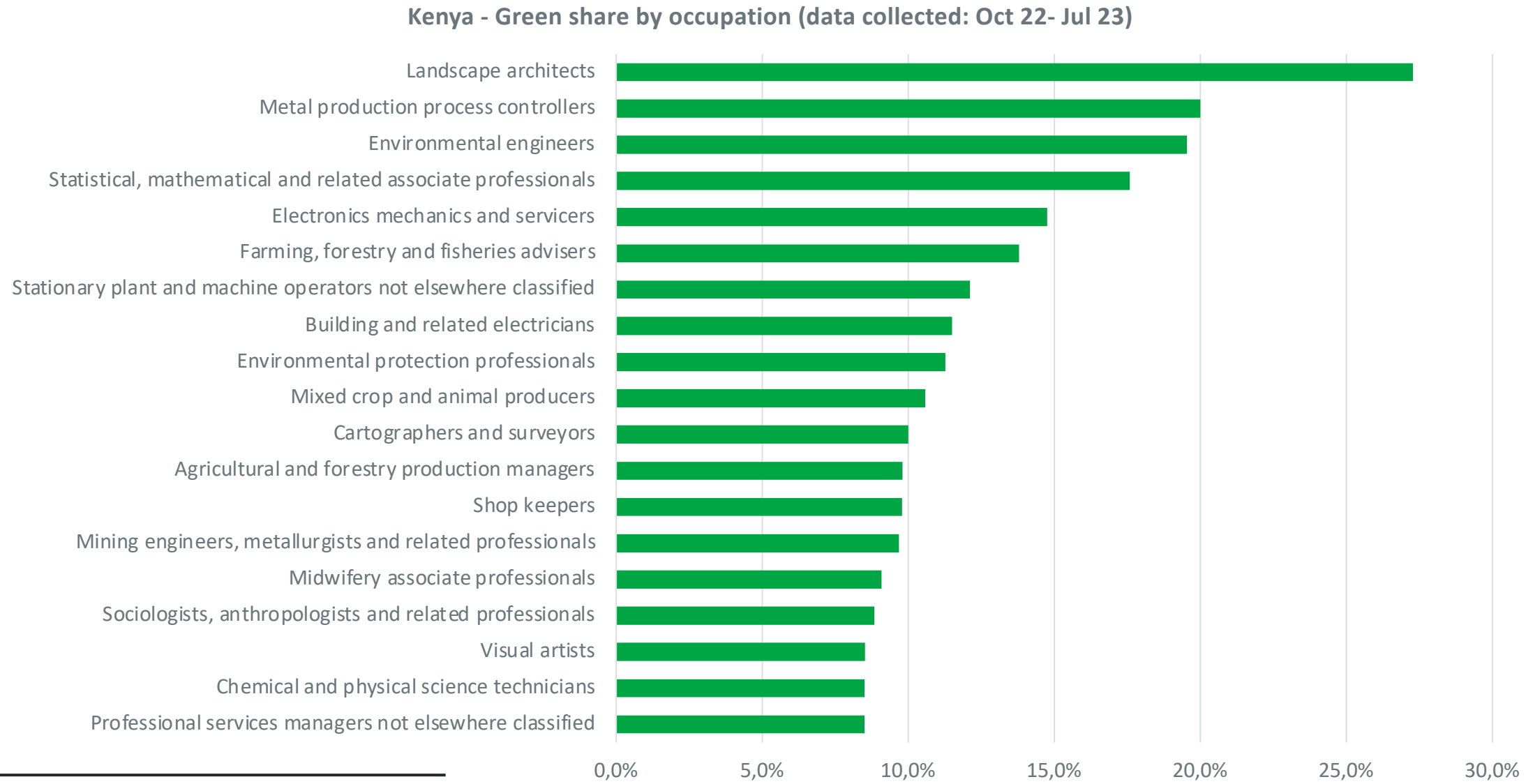
Top 20 Green Skills Kenya (1)

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 (2)



Kenya: green skills by occupation (share)



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

ETF Working together Learning for life

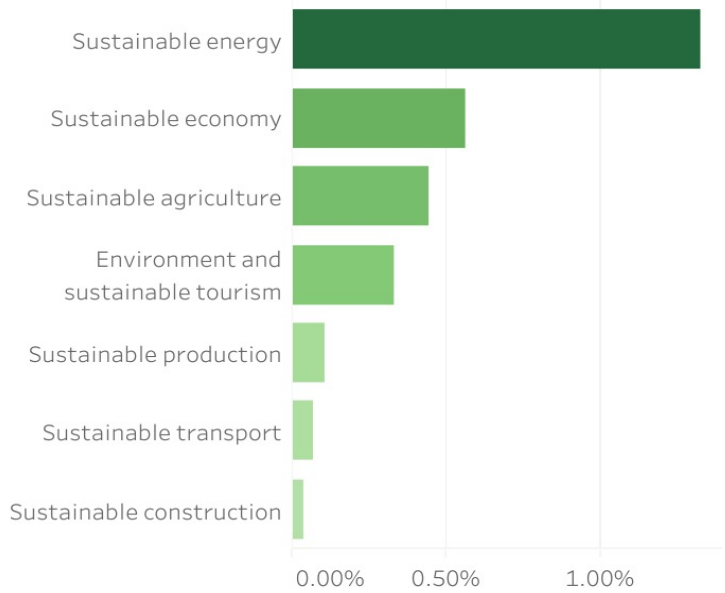
Select Release Date
October 2022 to July 2023
and Null values

KENYA

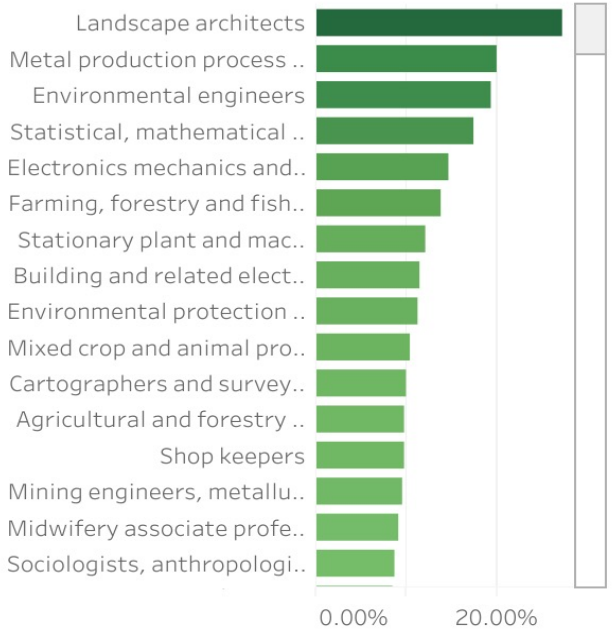
Green Share

2.59%

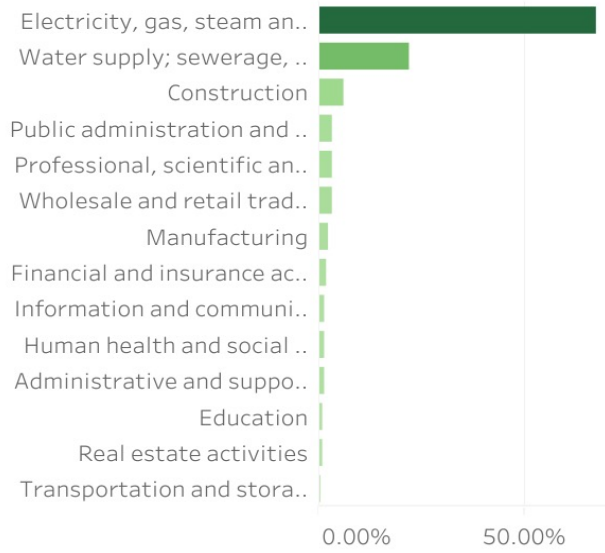
Select the Green skill family that you want to Analyze (then select it againg to reset your choose)



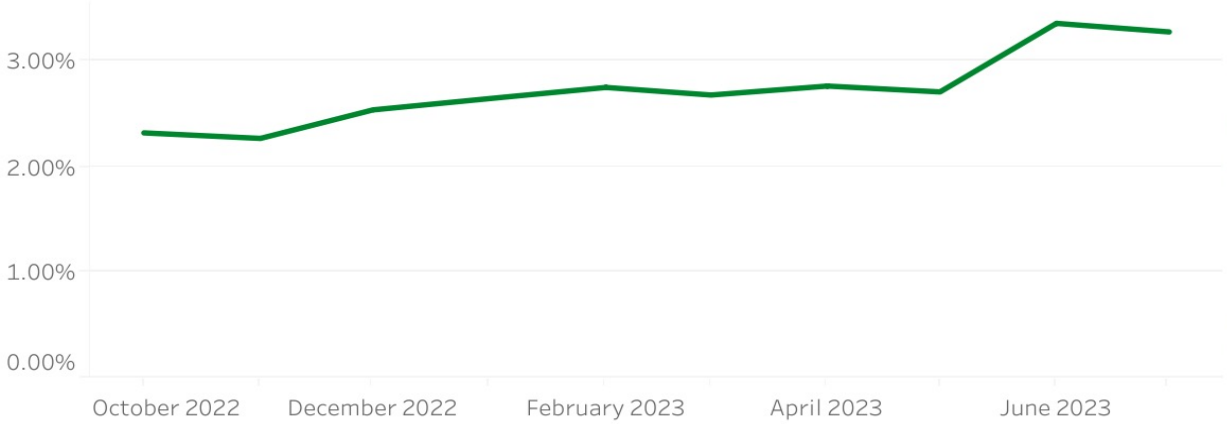
Share of green skill by occupation



Share of green skill by industry



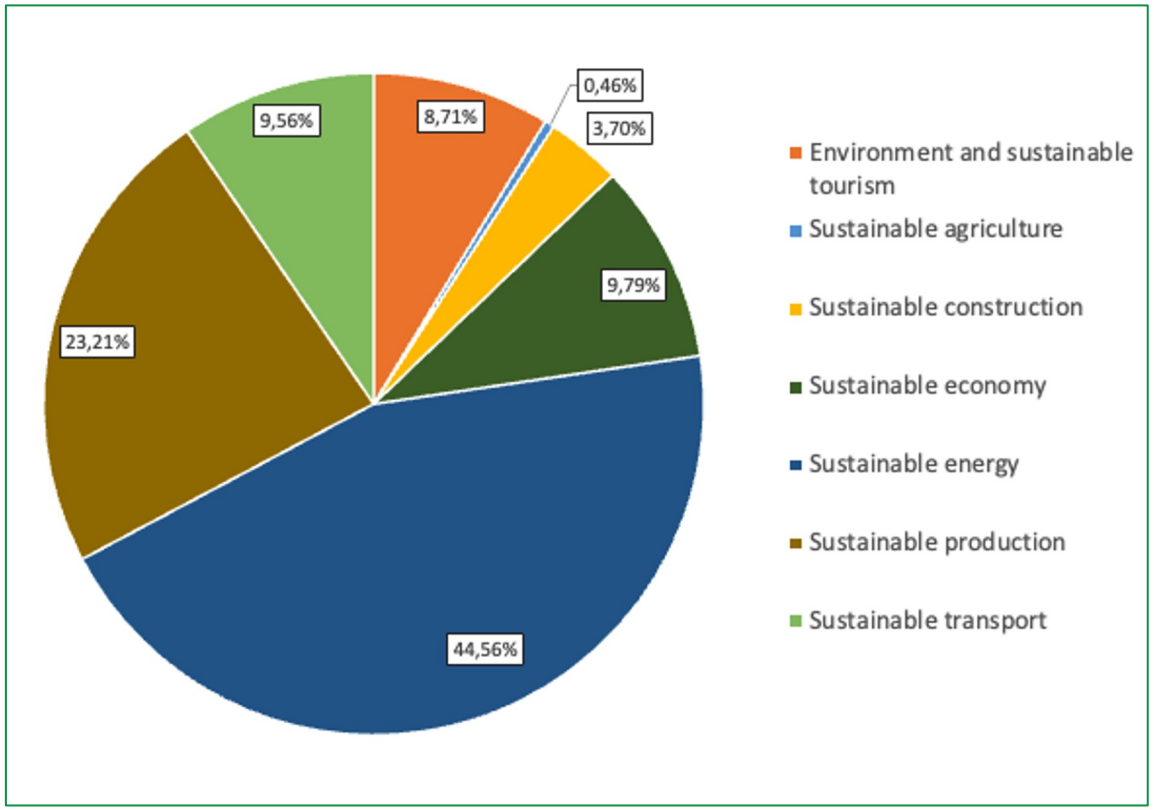
Share of green skill by release date



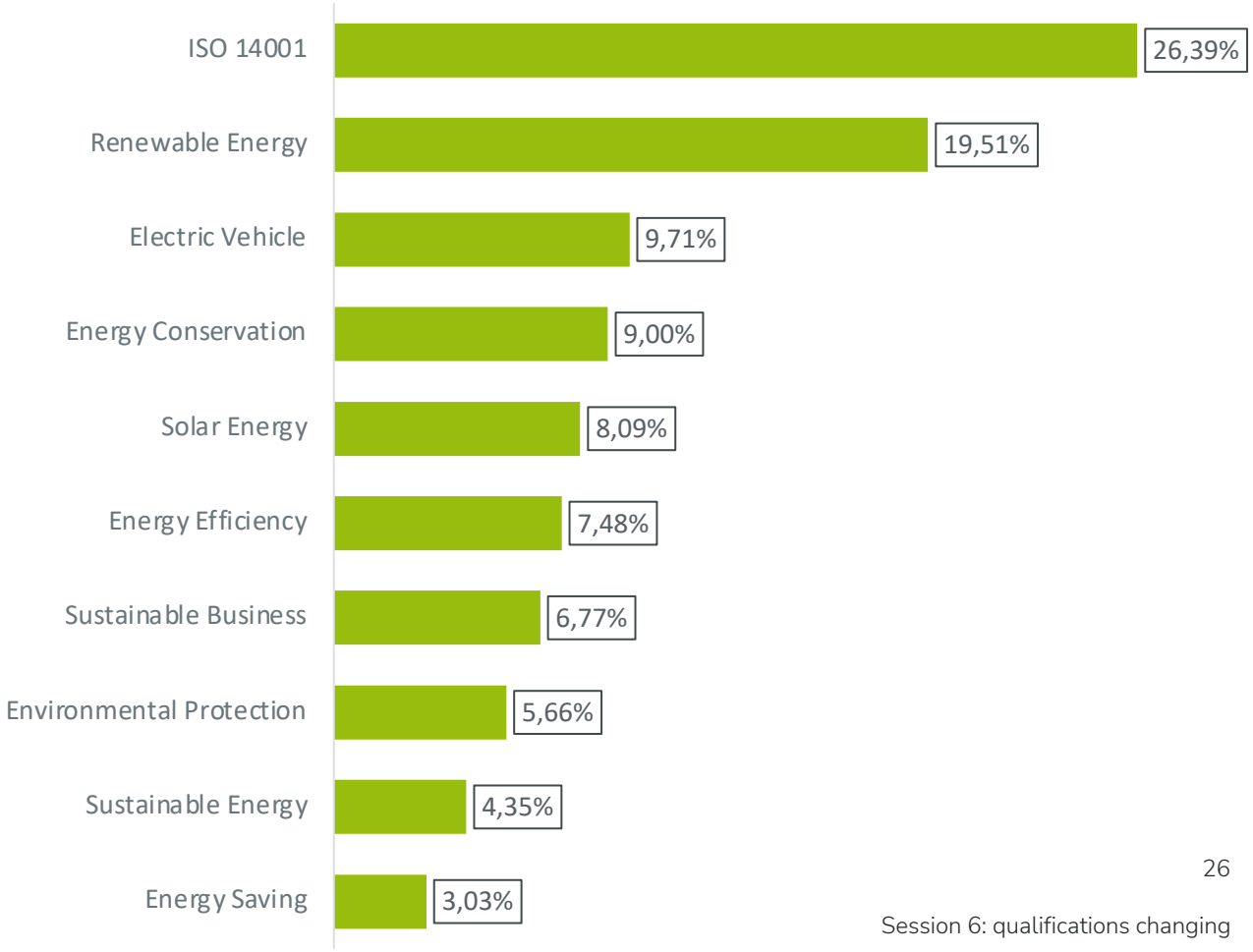
Most requested green skill

Egypt: Green Skills: TOP 10

By Groups – classification ETF



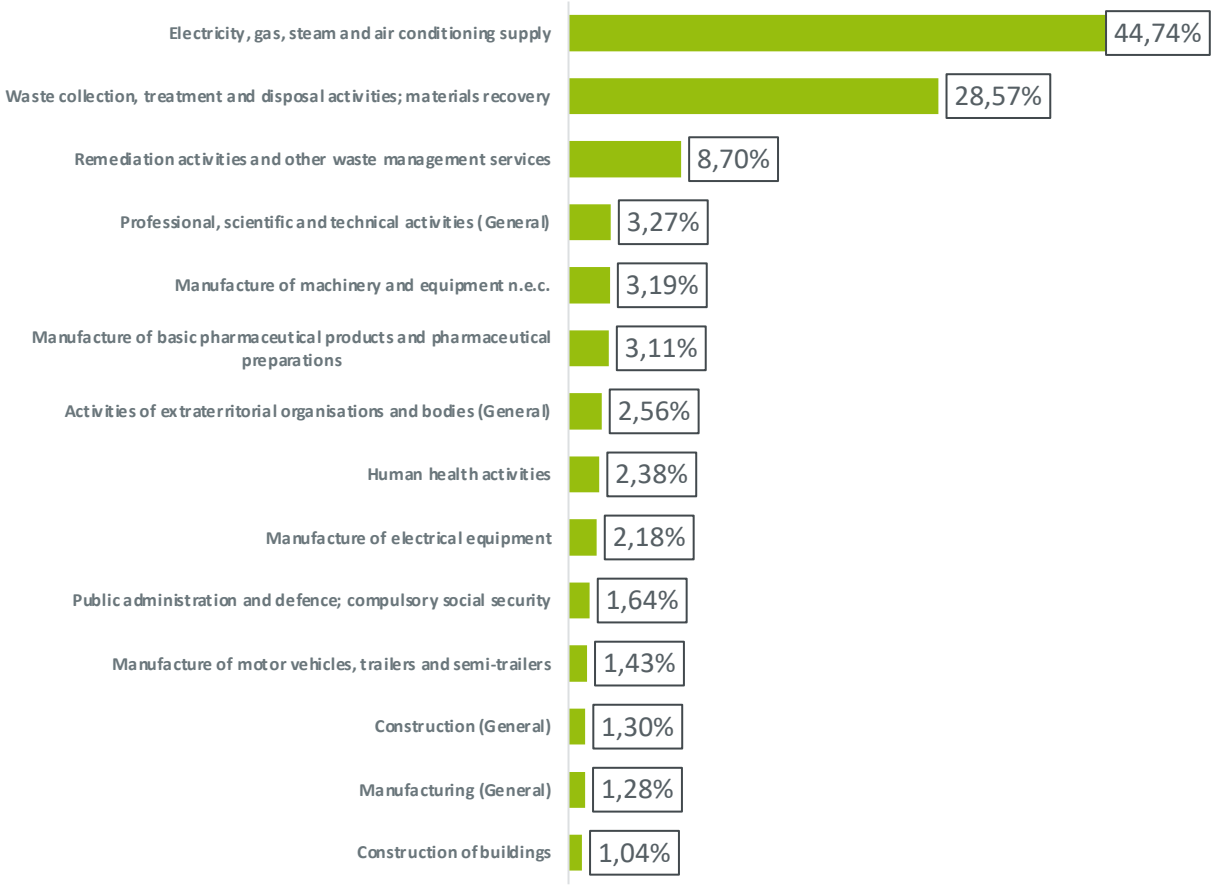
Top Green skills



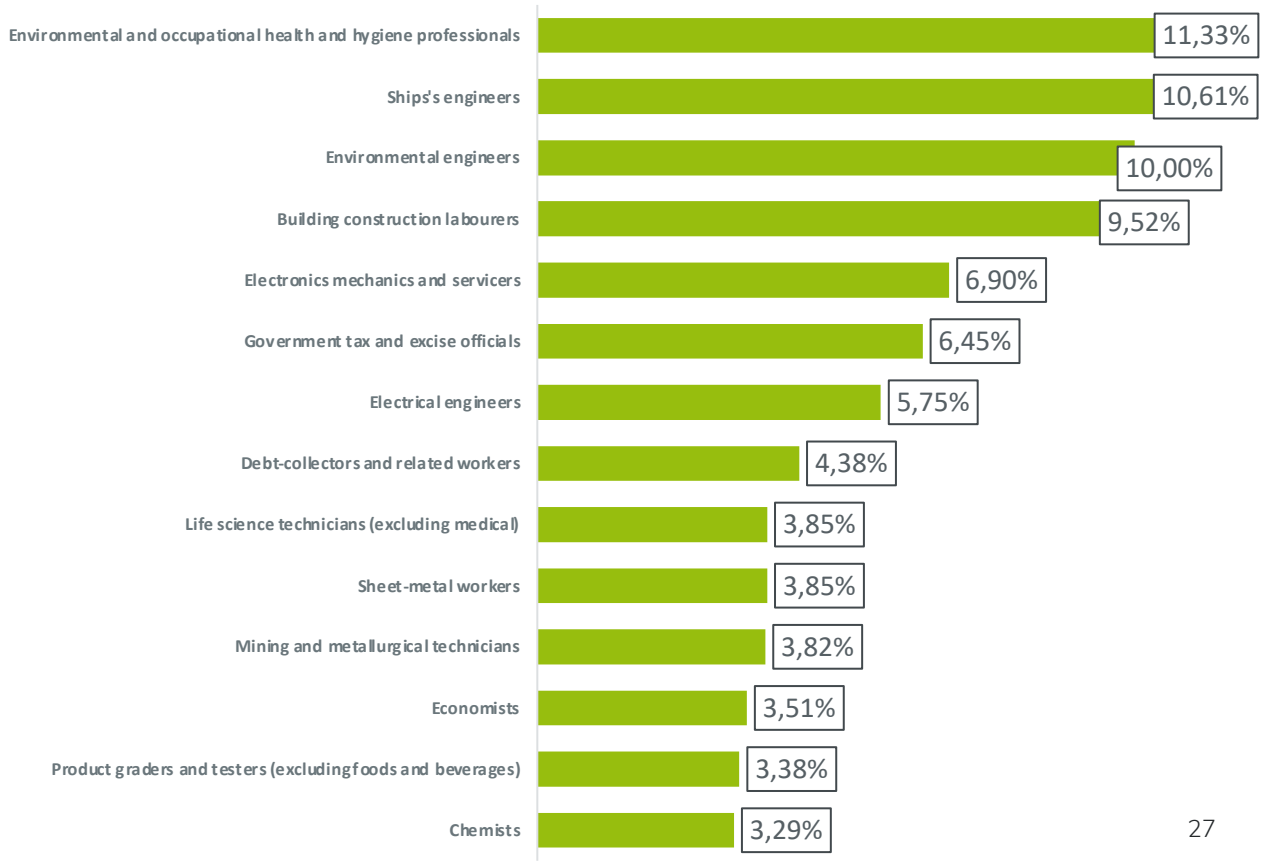
Source: ETF Job Postings – Egypt 2022

Egypt: Green skills: % by sectors and occupations

Sectors



Professions



Source: ETF Job Postings – Egypt 2022

04

Compétences vertes: approfondir les concepts

ACQF

Compétences brunes, blanches, vertes

- Les compétences brunes, telles que la production d'électricité à partir du charbon, augmentent les impacts environnementaux négatifs de l'activité humaine.

- Les compétences blanches n'augmentent ni ne réduisent cet impact.

- Les compétences vertes réduisent les impacts négatifs, tels que la production d'énergie à partir de l'énergie géothermique

Rappelons-nous : 3 types de compétences vertes

Compétences vertes transversales

Compétences vertes spécifiques

Des compétences vertes hautement spécialisées

Compétences vertes transversales

- Sensibilisation à l’environnement
- Rendement énergétique
- Gestion des déchets
- Mobilité durable
- Conservation de l’eau
- Agriculture durable
- Gestion des ressources naturelles
- Construction durable
- Gestion de l’impact environnemental
- Éducation à l’environnement
- Sensibilisation à l’éthique environnementale
- Gestion de la politique environnementale
- Comprendre le changement climatique
- Pensée systémique

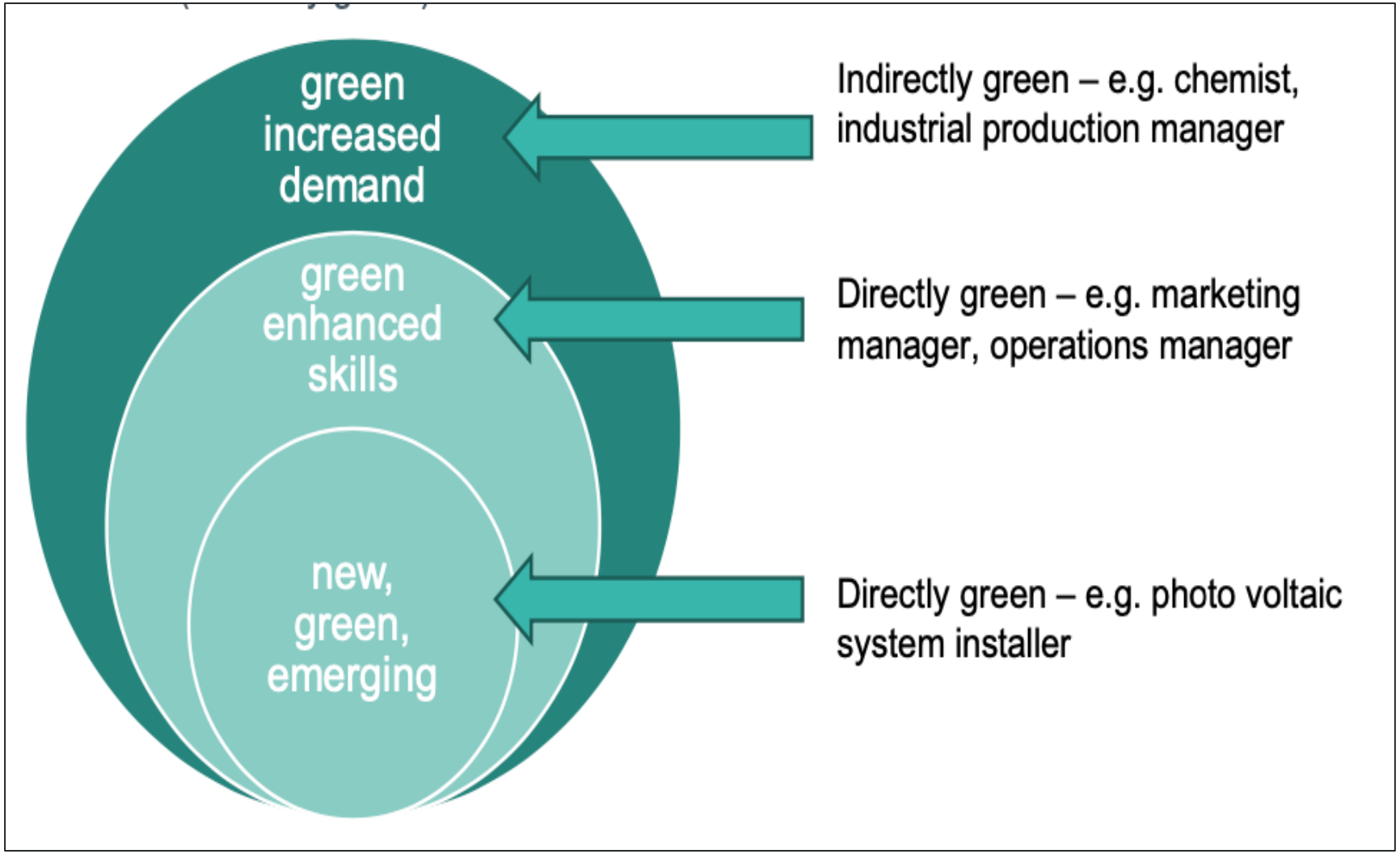
Compétences vertes spécifiques

- Certification de bâtiment écologique
- Analyse du cycle de vie
- Agronomie durable
- Gestion des ressources en eau
- Énergie renouvelable et ingénierie de l'énergie
- Écologie de la restauration
- Marine Conservation
- Gestion des déchets dangereux
- Évaluation des incidences sur l'environnement (EIE)
- Ingénierie des transports durables
- Échange de droits d'émission de carbone
- Recyclage technique

Compétences vertes hautement spécialisées

- Gestion des écosystèmes marins
- Évaluation des incidences environnementales de projets de grande envergure
- Permaculture
- Ingénierie écologique
- Certification de bâtiment écologique haute performance
- Écologie de la restauration des milieux humides
- Gestion des Zones de Préservation Permanente (ZPP)
- Développement de technologies de développement durable
- Gestion des risques environnementaux
- Gestion des ressources en eau dans les bassins versants
- Conservation des espèces menacées
- Gestion des déchets dangereux et toxiques

Taxonomie des métiers verts: O*Net (USA)



La base de données des États Unis d'Amérique O*NET classe les emplois verts en trois catégories, notamment :

1. De nouveaux métiers avec des tâches uniques,
2. Les emplois dont les tâches, les compétences et les connaissances ont été modifiées (les deux étant définis comme étant « directement verts »)
3. Les emplois qui « soutiennent l'activité économique verte, mais n'impliquent aucune tâche verte » (indirectement vert).

05

Affirmer et renforcer la place des compétences vertes: quelques options, solutions et possibilités

Struturer la place des compétences vertes

Cadre conceptuel pour l'Afrique?

Refléxion et dialogue dans le système education-formation

Réviser et ajuster les curricula, modules, certifications

Intégrer compétences vertes dans les descripteurs de niveau CNC (aptitudes, attitudes…)

Bonnes pratiques contextualisées: identifier, analyser, comparer, divulguer et apprécier

Travailler top-down et bottom-up

Exemples de mesures et stratégies (1)

Multiplier les programmes de formation et de renforcement des capacités liés à la durabilité et à l'environnement. **Former les enseignants, formateurs, tuteurs, professeurs – tous niveaux**

L'intégration des programmes d'études, y compris les concepts et les pratiques de durabilité dans les programmes scolaires, aide à préparer les futurs professionnels avec une solide compréhension des questions environnementales.

Exemples de mesures et stratégies (2)

Partenariats entre l'éducation/la formation et l'industrie/les entreprises pour s'assurer que les programmes de formation sont alignés sur les besoins du marché du travail.

Développer des certifications et des titres de compétences spécifiques pour les professionnels qui démontrent des connaissances et des compétences en matière de pratiques durables.

Exemples de mesures et stratégies (3)

Créer des possibilités de stages et d'apprentissages qui permettent aux étudiants et aux travailleurs d'acquérir une expérience pratique dans les emplois verts.

Créer des programmes de perfectionnement pour les travailleurs qui souhaitent faire la transition vers des carrières plus vertes.

Fournir des ressources éducatives en ligne et du matériel d'apprentissage numérique pour faciliter l'accès à l'information et à la formation aux compétences vertes.

Exemples de mesures et stratégies (2)

Offrir des incitations financières, telles que des bourses d'études ou des subventions, pour soutenir la formation en compétences vertes.

Promouvoir la sensibilisation à l'importance des compétences vertes et aux avantages économiques et environnementaux qui y sont associés.

Favoriser l'acquisition de compétences interdisciplinaires qui permettent aux professionnels de travailler dans divers domaines liés au développement durable.

06

Exemplos de quadros conceptuais competências verdes

Iniciativas de educação verde

- A Coligação Educação para o Clima é uma comunidade crescente de alunos e professores ativos em questões relacionadas com as alterações climáticas e a sustentabilidade
- Novo Quadro europeu de competências em sustentabilidade define conhecimentos, aptidões e atitudes de que os alunos de todas as idades necessitarão para a transição ecológica
- A iniciativa Investigadores nas Escolas permite que jovens investigadores se envolvam com professores e alunos sobre as alterações climáticas e o desenvolvimento sustentável

Coligação Educação para o Clima

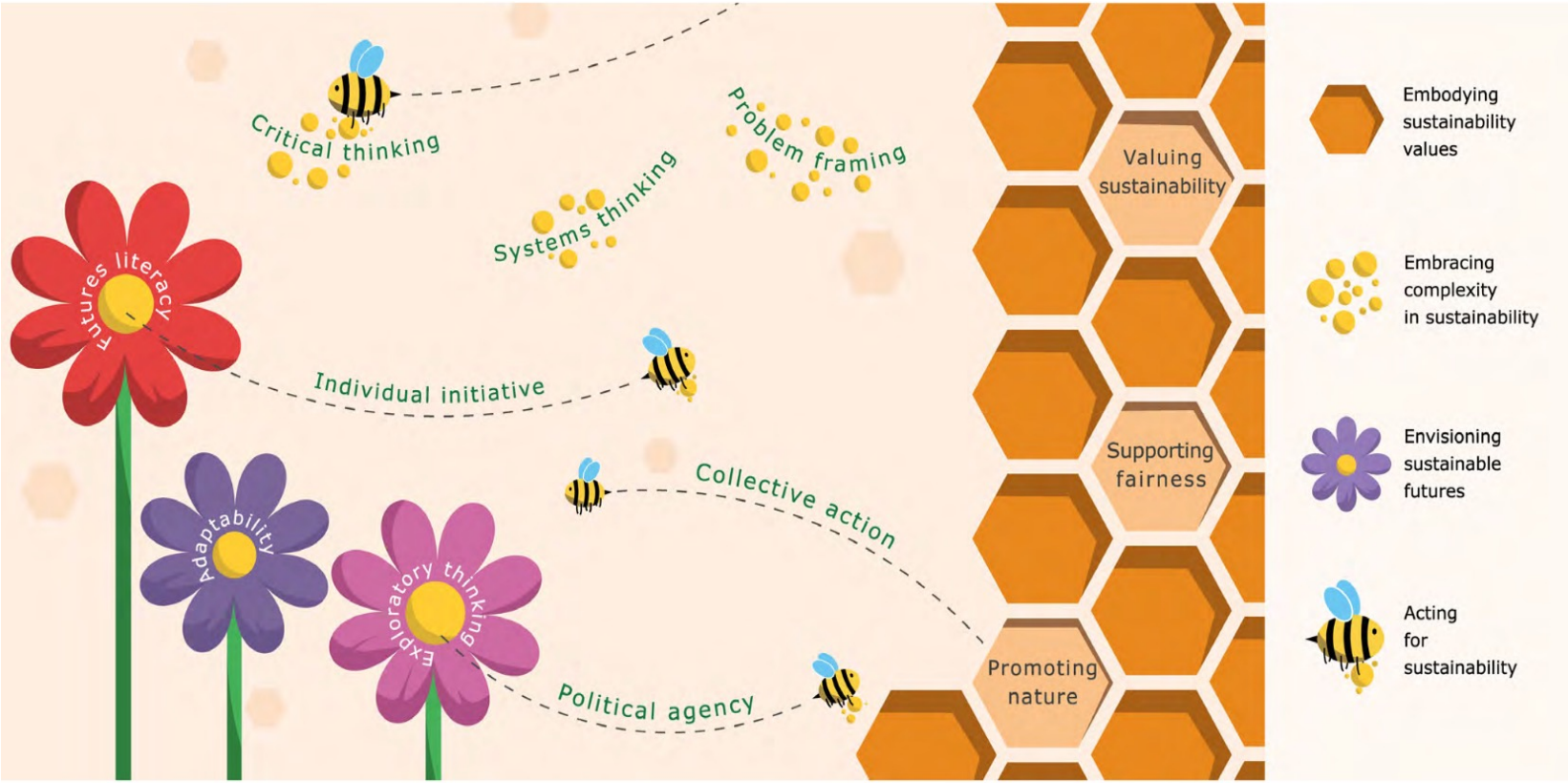
https://education-for-climate.ec.europa.eu/_en

https://education.ec.europa.eu/focus-topics/green-education/about

GREENCOMP

- O desenvolvimento de um quadro europeu de competências em matéria de sustentabilidade é uma das ações políticas definidas no Pacto Ecológico Europeu como catalisador para promover a aprendizagem sobre sustentabilidade ambiental na União Europeia.
- A GreenComp identifica um conjunto de competências de sustentabilidade para alimentar os programas de educação para ajudar os alunos a desenvolver conhecimentos, habilidades e atitudes que promovam formas de pensar, planejar e agir com empatia, responsabilidade e cuidado com o nosso planeta e com a saúde pública.
- O GreenComp compreende quatro áreas de competência inter-relacionadas: "incorporar valores de sustentabilidade", "abraçar a complexidade na sustentabilidade", "prever futuros sustentáveis" e "agir para a sustentabilidade". O GreenComp foi concebido para ser uma referência não prescritiva para programas de aprendizagem que promovam a sustentabilidade como uma competência.

GREENCOMP: quadro de competências em sustentabilidade



Visual representation of *GreenComp*.

GreenComp consists of 12 competences (in **bold**) organised into the four areas (in *italics*) below:

- *Embodying sustainability values*, including the competences
  - **valuing sustainability**
  - **supporting fairness**
  - **promoting nature**
- *Embracing complexity in sustainability*, including the competences
  - **systems thinking**
  - **critical thinking**
  - **problem framing**
- *Envisioning sustainable futures*, including the competences
  - **futures literacy**
  - **adaptability**
  - **exploratory thinking**
- *Acting for sustainability*, including the competences
  - **political agency**
  - **collective action**
  - **individual initiative**

https://publications.jrc.ec.europa.eu/repository/handle/JRC128040

Aprender para a sustentabilidade ambiental

A educação e a formação, como todos os setores, devem tomar medidas para responder à emergência climática.

Características da educação para a sustentabilidade:

- Começa na educação e acolhimento na primeira infância
- Adota uma abordagem de **aprendizagem ao longo da vida**
- Cria ambientes de aprendizagem favoráveis onde a instituição como um todo é ativa na sustentabilidade
- É centrada no aluno - é envolvente, positiva e baseada em experiências da vida real
- **Apoia os educadores, incluindo as equipas de liderança, a ensinar e a agir em prol da sustentabilidade**
- Promove a colaboração e parcerias em comunidades locais e mais amplas
- Envolve os jovens de forma significativa
- **Constrói competências de sustentabilidade**
- Assenta em políticas sólidas

WHY THIS PROPOSAL ON LEARNING FOR ENVIRONMENTAL SUSTAINABILITY:

94% of EU citizens say that protecting the environment matters personally to them.

Six in 10 young people globally are "very" or "extremely" worried about climate change.

Many young people consider that **education and training is failing to prepare them** to tackle climate change, protect the environment and live and act more sustainably.

3 in 4 respondents to the Commission's public survey ranked education and training as the most important sector to help people understand and take action on climate change and the environmental crises.

Despite clear progress and growing public and policy attention, **learning for environmental sustainability is not yet a systemic feature** of education and training policy in the EU.

Putting environmental sustainability at the heart of education and training will help equip learners with the competences they need for a greener and more sustainable future.

Education and Training

https://education.ec.europa.eu/focus-topics/green-education/learning-for-environmental-sustainability

07

Green skills award...to Kenya!

ETF Green Skills Awards 2023

E-waste management

Kenya

The project called "Promoting Demand-Driven Skills in E-waste Management and Recycling in Kenya" aims to address the challenges posed by e-waste. Currently, only 1% of e-waste generated annually in Kenya is recycled, leading to environmental pollution. The project focuses on building the capacity of local institutions to train technicians with the necessary skills to process and manage e-waste. Through the development of a curriculum, equipment provision, and training, the project has successfully created employment opportunities for young Kenyans while addressing the environmental and health concerns associated with improper e-waste disposal. The project's approach and outcomes make it a leading model for sustainable e-waste management initiatives globally.
An outstanding project, congratulations!

- Video Kenya: https://www.youtube.com/watch?v=iAHby7HOo9c

How about education – qualifications for green skills?

Could you share some examples of your own countries?

Please: Use the colour cards and / or the chat box!

ACQF

Références clés

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- Work-based learning and the green transition, Publications Office of the European Union, https://data.europa.eu/doi/10.2801/69991
- European Commission (2022), Green Skills and Knowledge Concepts: Labelling the ESCO classification, ESCO Publications, January.
- Jobs for the Green Transition ceps in-depth analysis. Definitions, classifications and emerging trends. Patricia Urban, Vasileios Rizos, Alexandre Ounnas, Amin Kassab, Hayk Kalantaryan. September, 2023.
- Emplois verts : Travail décent dans un monde durable et à faible émission de carbone. PNUMA, septembre 2008.


Institutional setting & stakeholders
Qualifications specifications/ standards
Credit accumulation and transfer system
Qualifications Database/ Register
Quality assurance of qualifications, and provision
RPL / Validation - Non-formal & informal learning
M&E, research
Outreach & visibility to users
NQF policy, conceptual-technical design

ACQF

African Continental Qualifications Framework

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.

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

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 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

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

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.

African Continental Qualifications Framework