





## Session 24: Digital and green transitions and skills

Twin digital and green transition are high priorities for all countries: what about skills to enable and sustain these transitions?

By: Eduarda Castel-Branco





# Digital skills? Green skills?

# ACQF Digital??? – Or...new literacy?

» Some 83% of all retail postings mention at least one digital skill.

» Data analysis now dominates operations roles, appearing in 18% of all postings. Other data-related skills appear in 46% of all postings for operations jobs.

» Marketing is now a highly digital role: *all* postings for marketing jobs mention at least one digital skill.



# ACQF Green jobs – Green skills

### LinkedIn, Economic Graph, 2022

<u>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</u>

Chart 2: Fastest-growing green and greening jobs globally 40% Sustainability Manager -2021) 30% Growth (2016– Wind Turbine Technician Compliance Manager Ecologist Solar Consultant 20% Geotechnical Engineer Medium term: Job Environmental Health Safety Specialist Risk Advisor -**Regulatory Affairs Consultant** Programme Safety Technician Manader Farm Manager 10% Construction Manager Facilities Manager **Technical Sales Representative** 0% 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% Short term: Job Growth (2020-2021)

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



# Digital skills - Africa

### Digital skills gap

- Africa faces a huge digital skills gap, which is diluting economic opportunities and development. Some 230 million jobs across the continent will require some level of digital skills by 2030, according to a study by the International Finance Corporation (IFC), a member of the World Bank Group and the largest global development institution focused on the private sector in emerging markets.
  - That translates to a potential for 650 million training opportunities and an estimated \$130 billion market.
  - With the COVID-19 pandemic forcing many businesses to go digital to survive, the need for these skills has only become more apparent in recent months.
- ➢ To gain deeper insight into how to boost these skills while ensuring that the infrastructure exists for people to develop them, IFC and the World Bank have done new research on the Cote d'Ivoire, Kenya, Mozambique, Nigeria and Rwanda markets.
  - According to the preliminary findings, by 2030 some level of digital skills will be required for 50-55% of jobs in Kenya, 35-45% in Cote d'Ivoire, Nigeria, and Rwanda, and 20-25% in Mozambique.

### ACQF Africa needs digital skills across the economy not just the tech sector

- Demand for digital skills training in Africa will surge in the coming decade as jobs that before did not need digital skills will begin to do so.
- Education providers need to align their offerings to accommodate this surge in demand.
- Policy-makers and the private sector also need to work together to improve the necessary infrastructure.

# ACQF The importance of Africa being digitally connected and skilled is obvious.

- Think of the farmer in Ethiopia checking crop prices on government websites, a factory worker in Kenya sharing photos via their smartphone to update management, or a small business in Rwanda switching to online banking.
- Without access to online information, e-commerce, and instantaneous communication via mobile technology, it is that much harder for workers, business owners and families to succeed and prosper

### **AU Digital Education Strategy (in development)**

AUC is developing the **AU Digital Education Strategy** as part of the AU Digital Transformation Strategy 2030;

- ✓ AUC Department for Education Science Technology and Innovation and the Department for Infrastructure and Energy are co-leading this process
- ✓ EU supported Policy and Regulation Initiative for Digital Africa (PRIDA) programme

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# Green skills

# **Green transition**

International agreements (e.g. Paris Agreement and UN follow-up actions through the Community of Partners- COPs- meetings and the Agenda 2030 with its Sustainable Development Goals – SDGs), European policies (e.g. European Green Deal and its package of policy initiatives, national policies around the globe - supported by civil society movements and technological innovation - have effectively launched the green transition for most countries.

# **Green skills are about**

- Occupational knowledge and skills (sometimes also called 'technical') that enable professionals to effectively use green technologies - namely resource-efficient technologies that reduce waste and minimize the environmental impact of human action and perform related processes;
- 2. Transversal skills, as well as knowledge, values and attitudes that help them take pro- environmental decisions in their work and lives. This overall green competence is already being introduced in training systems globally.

# **Green skills taxonomy: O\*Net**



The US database O\*NET conveniently classifies green jobs into three categories, including

- (1) new occupations with unique tasks,
- (2) jobs with altered tasks, skills and knowledge requirements (both defined as "directly green")
- (3) jobs that "support green economic activity but do not involve any green tasks" (indirectly green).

# ACQF Green skills: an initiative in Africa – South Africa

The Green Skills Project is a project of the <u>Environmental</u> <u>Skills Planning Forum</u> chaired by the <u>Department of</u> <u>Environmental Affairs</u>

### Key initiatives:

- Website
- A research symposium and monograph, overviews and <u>conceptual frameworks</u>, <u>training courses</u>, and a <u>research toolkit</u> to help employers, SETAs and others better understand and quantify the demand for <u>green</u> <u>skills</u>.
- <u>https://www.greenskills.co.za/</u>



The National Environmental Skills Development Planning Forum







# EU tackling skills gaps: digital and green

# **EU: tackling digital skills gap**

- All Europeans need digital skills to study, work, communicate, access online public services and find trustworthy information. However, many Europeans do not have adequate digital skills. The Digital Economy and Society Index (DESI) shows that 4 out of 10 adults and every third person who works in Europe lack basic digital skills. There is also low representation of women in tech-related professions and studies, with only 1 in 6 ICT specialists and 1 in 3 science, technology, engineering and mathematics (STEM) graduates being women.
- The European Commission has set targets in the European skills agenda and the **digital education action plan** to ensure that 70% of adults have basic digital skills by 2025. These initiatives aim to reduce the level of **13-14 year-olds who underperform in computing and digital literacy from 30% (2019) to 15% in 2030.**



# Some initiatives and actions

Access the Digital Skills and Jobs Platform >

Digital economy and society index (DESI) >

European Skills Agenda >

Digital Education Action Plan >

- The European <u>Digital Skills</u> <u>and Jobs Platform</u> is a new initiative launched under the <u>Connecting Europe Facility</u> <u>Programme</u>.
- It offers information and resources on digital skills, as well as training and funding opportunities.

https://digital-strategy.ec.europa.eu/en/policies/digital-skills-and-jobs

# **Digital Skills and Jobs Platform**



https://digital-skills-jobs.europa.eu/en

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### **DESI Key Areas**

- 1. Human capital
- 2. Connectivity
- 3. Integration of digital technology
- 4. Digital public services
- 5. <u>Research & Development in ICT</u>



https://digital-strategy.ec.europa.eu/en/policies/desi

## **DEAP – Factsheet**

https://education.ec.europa.eu/sites/default/fil es/document-library-docs/deap-factsheetsept2020\_en.pdf



# **ACQF** Digital Education Action Plan actions

### The Digital Education Plan puts forward the following actions for the period 2021-2027.

- Priority 1: Fostering the development of a high-performing digital education ecosystem
- <u>Action 1</u>: Strategic Dialogue with Member States on the enabling factors for successful digital education
- <u>Action 2</u>: Council Recommendation on blended learning approaches for high-quality and inclusive primary and secondary education
- <u>Action 3</u>: European Digital Education Content Framework
- <u>Action 4</u>: Connectivity and digital equipment for education
- <u>Action 5</u>: Digital transformation plans for education and training institutions
- <u>Action 6</u>: Artificial intelligence and data usage in education and training

- Priority 2: Enhancing digital skills and competences for the digital transformation
- <u>Action 7</u>: Common guidelines for teachers and educators to foster digital literacy and tackle disinformation through education and training
- <u>Action 8</u>: Update the European Digital Competence Framework to include AI and data-related skills
- Action 9: European Digital Skills Certificate (EDSC)
- <u>Action 10</u>: Council recommendation on improving the provision of digital skills in education and training
- <u>Action 11</u>: Cross-national collection of data on student digital skills and introduce an EU target for student digital competence
- <u>Action 12</u>: Digital Opportunity Traineeships
- <u>Action 13</u>: Women's participation in STEM
- Digital Education Hub

## ACQF Digcomp 2.0 (5 areas and 8 proficiency levels)

1. Information and data literacy	<ul> <li>1.1 Browsing, searching and filtering data, information and digital content</li> <li>To articulate information needs, to search for data, information and content in digital environments, to access them and to navigate between them. To create and update personal search strategies.</li> <li>1.2 Evaluating data, information and digital content</li> <li>To analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content. To analyse, interpret and critically evaluate the data, information and digital content.</li> <li>1.3 Managing data, information and digital content</li> <li>To organise, store and retrieve data, information and content in digital environments. To organise and process them in a structured environment.</li> </ul>
2. Communication and collaboration	<ul> <li>2.1 Interacting through digital technologies</li> <li>To interact through a variety of digital technologies and to understand appropriate digital communication means for a given context.</li> <li>2.2 Sharing through digital technologies</li> <li>To share data, information and digital content with others through appropriate digital technologies. To act as an intermediary, to know about referencing and attribution practices.</li> <li>2.3 Engaging in citizenship through digital technologies</li> <li>To participate in society through the use of public and private digital services. To seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.</li> <li>2.4 Collaborating through digital technologies</li> <li>To use digital technologies for collaborative processes, and for co-construction and co-creation of resources and knowledge.</li> <li>2.5 Netiquette</li> <li>To be aware of behavioural norms and know-how while using digital technologies and interacting in digital environments. To adapt communication strategies to the specific audience and to be aware of cultural and generational diversity in digital environments.</li> <li>2.6 Managing digital identity</li> <li>To create and manage one or multiple digital identities, to be able to protect one's own reputation, to deal with the data that one produces through several digital tools, environments and services.</li> </ul>
3. Digital content creation	<ul> <li>3.1 Developing digital content</li> <li>To create and edit digital content in different formats, to express oneself through digital means.</li> <li>3.2 Integrating and re-elaborating digital content</li> <li>To modify, refine, improve and integrate information and content into an existing body of knowledge to create new, original and relevant content and knowledge.</li> <li>3.3 Copyright and licences</li> <li>To understand how copyright and licences apply to data, information and digital content.</li> <li>3.4 Programming</li> <li>To plan and develop a sequence of understandable instructions for a computing system to solve a given problem or perform a specific task.</li> </ul>

### Digcomp 2.0

<u>https://joint-research-</u> <u>centre.ec.europa.eu/digcomp/digital-</u> <u>competence-framework-20\_en</u> 4. Safety

#### 5. Problem solving

#### 4.1 Protecting devices

To protect devices and digital content, and to understand risks and threats in digital environments. To know about safety and security measures and to have due regard to reliability and privacy.

#### 4.2 Protecting personal data and privacy

To protect personal data and privacy in digital environments. To understand how to use and share personally identifiable information while being able to protect oneself and others from damages. To understand that digital services use a "Privacy policy" to inform how personal data is used.

#### 4.3 Protecting health and well-being

To be able to avoid health-risks and threats to physical and psychological well-being while using digital technologies. To be able to protect oneself and others from possible dangers in digital environments (e.g. cyber bullying). To be aware of digital technologies for social well-being and social inclusion.

#### **4.4 Protecting the environment**

To be aware of the environmental impact of digital technologies and their use.

#### 5.1 Solving technical problems

To identify technical problems when operating devices and using digital environments, and to solve them (from trouble-shooting to solving more complex problems).

#### 5.2 Identifying needs and technological responses

To assess needs and to identify, evaluate, select and use digital tools and possible technological responses to solve them. To adjust and customise digital environments to personal needs (e.g. accessibility).

#### 5.3 Creatively using digital technologies

To use digital tools and technologies to create knowledge and to innovate processes and products. To engage individually and collectively in cognitive processing to understand and resolve conceptual problems and problem situations in digital environments.

#### 5.4 Identifying digital competence gaps

To understand where one's own digital competence needs to be improved or updated. To be able to support others with their digital competence development. To seek opportunities for self-development and to keep up-to-date with the digital evolution.

# ACQF Test your digital skills

To order a meal, to pay an invoice, buy a flight ticket, or to schedule a work meeting, digital tools and the internet are indispensable for our lives and work. But how to know whether you have the right digital skills? And how to find training to get better?

- Now you have the chance to test your digital skills and get access to training opportunities appropriate for your needs.
- New tool "Test your digital skills" can support you to get a good understanding of your current digital competences (based on the established <u>European Digital Competence</u> <u>Framework - DigComp 2.0</u>), which is the starting point to identify what you can do next to improve them, depending on your needs and aspirations.
- The test takes around 20 minutes to complete and, once done, you get a summary report of your skills level. In order to take the test, you will need to register and login and the results will be available in your Profile.

#### https://digital-skills-jobs.europa.eu/en/digital-skills-assessment



# Test your skills

- The Test your digital skills self-assessment tool is designed with user needs and experience in mind. It can be accessed either from the <u>Digital Skills and</u> <u>Jobs Platform</u> and from <u>Europass</u>. The test is available in 29 languages and can be accessed on phones, tablets or computers. The questions are based on the <u>Digital Competence Framework 2.1</u> (DigComp) and cover its five domains:
  - 1. Information and data literacy
  - 2. Communication and collaboration
  - 3. Digital content creation
  - 4. Safety
  - 5. Problem solving

If you wish, you can also take the test without logging in using this <u>link.</u> In this case, your results will not be available in your Profile.





# **Green education,** skills

## **Green education initiatives**

• The <u>Education for Climate Coalition</u> is a growing community of learners and teachers active on climate change and sustainability issues

ACQF

- New <u>European sustainability</u> <u>competence framework</u> sets out knowledge, skills and attitudes learners of all ages will need for the green transition
- The <u>researchers at Schools initiative</u> allows young researchers to engage with teachers and pupils on climate change and sustainable development

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



UNLOCK BEAUTIFUL CHALLENGES
 DEVELOP PROJECTS TOGETHER
 RE-USE SUSTAINABLE SOLUTIONS
 CONNECT #EDUCATIONFORCLIMATE

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

# ACQF 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



Visual representation of *GreenComp*.

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

## ACQF Learning for environmental sustainability

Education and training, like all sectors, must take action to respond to the climate emergency.

#### **Characteristics of sustainability education:**

- starts from early childhood education and care
- takes a lifelong learning approach
- creates supportive learning environments where the institution as a whole is active on sustainability
- is learner-centred, engaging, positive and based on real-life experiences
- supports educators, including leadership teams, to teach and act for sustainability
- fosters collaboration and partnerships in local and wider communities
- involves young people in meaningful ways
- builds sustainability competences
- is founded on strong policies









#### 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 environ**mental 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.

# ACQF Skilling for the green transition: 4 policy issues (ETF Brief)

#### SKILLING FOR THE GREEN TRANSITION

ETF Position paper

\*\*\*\*

#### **Policy issues**

- 1. Ensure public support and buy-in
- 2. Ensure that the supply of green skills meets demand
- 3. Mobilise the private sector to decarbonise their operations and shift towards more sustainable economic activities
- 4. Address the risks of the green transition related to loss of jobs in non-green (also called "brown") activities, in particular on the most vulnerable workers.

The **first policy issue** is about ensuring **public support and buy-in** for the implementation of greening policies as well addressing the gap between citizens awareness and responsibility on the one hand and their behaviours as consumers and producers on the other. Research shows there is no systematic correlation between environmental awareness and behaviour. This entails a concerted effort for citizen information and education as well as regulation and behavioural incentives to appropriate and uphold the paradigm shift. Opinion surveys throughout the world show this is happening, yet much more needs to be done to align to decarbonising milestones.

# ACQF Skilling for the green transition: 4 policy issues (2)

The **second** one is to ensure that the **supply of green skills** meets its growing demand. As demonstrated by ETF's work, skills gaps and shortages hinder the greening of economic activities in the various sectors in different partner countries (PCs). To revert the trend and to ensure green skills are a catalytic asset rather than an impediment for further progress, countries need to align their skills development systems to their sector greening objectives as well as to their smart specialisation strategies. This requires responsive and agile training systems led by reliable skills anticipation mechanisms and including advanced career guidance services for learners of all ages. Given that the green transition can have a positive impact on net employment creation and can support the integration

The **third** is to **mobilise the private sector to decarbonise** their operations and shift towards more sustainable economic activities. Some companies switching towards greener activities driven by values, consumer preferences, regulations or financial incentives. But, a significant number of companies, in particular SMEs, struggle to fully benefit from the green transition. The shift will not be market but policy driven, therefore access to sustainable finance, technology transfer, coaching through all aspects of sustainable business development and adequate training opportunities for their staff are key elements for companies to be part of the transition. In this context, the mobilisation of intermediaries (e.g. sector skills councils, business associations, industry associations, chambers) as well as business networks at national and international level needs to be prioritised in all relevant policies in order to improve the coordination and articulation of very complex policy objectives.

# ACQF Skilling for the green transition: 4 policy issues (3)

The **fourth** is to **address the risks of the green transition** related to the loss of jobs in "non-green" (also called brown) activities and in particular on those most vulnerable workers.

- The emphasis is put today on people engaged in fossil fuel extraction and high GHG emitting operations as they are the first ones affected by climate policies and regulations. But eventually, workers and trainees in other sectors will be affected as the sectors' decarbonisation progresses.
- This phenomenon can be mitigated through the adoption of a policy mix that ensures concerned workers are given full consideration and feature at the heart of education, training (up and re-skilling, lifelong learning) and social protection policies that support graduates and workers to navigate and remain active despite the changing labour market.

# Thank you!

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