

# *Parcours for the Future*

## **CHANGING SKILLS FOR A CHANGING WORLD**

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# Global changes affect all countries



Technological  
advances/  
nanotech/ biotech/



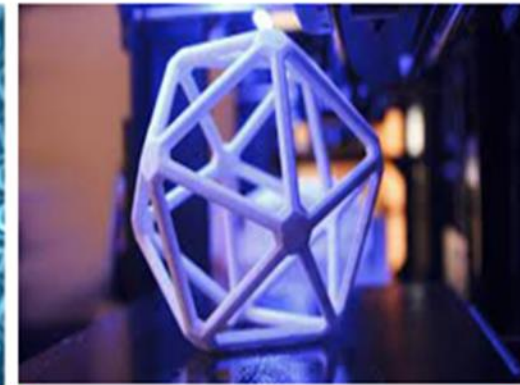
Digitalisation/ cloud  
computing/ internet  
of things/services



Artificial Intelligence  
/ machine learning/  
robotics



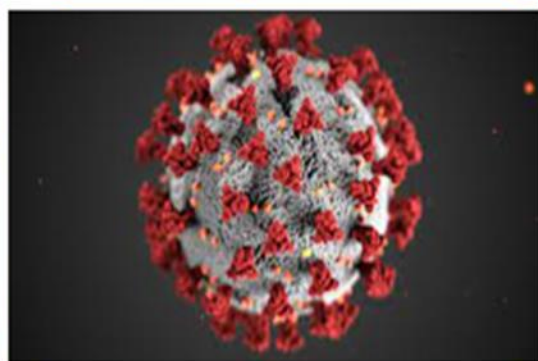
Big Data/ mobile  
internet/ data  
mining/processing



Advanced  
manufacturing / 3D  
printing/ materials



Globalisation/  
trade competition/  
financial shocks



Covid-19/  
Pandemics



Climate change/  
global warming



Demography/  
Migration



Geopolitics/ wars/  
new national  
regulations

# Seven global trends on future of work and jobs (1)

1

## JOB DESTRUCTION

- Percentage of jobs/ tasks to be automated
- Routine vs non-routine tasks
  - ✓ Routine medium-skilled tasks
  - ✓ Routine manual tasks
  - ✓ Routine cognitive/ high-skilled tasks
- Machine-human complementarity

2

## JOB POLARISATION

- Declining share of medium-skilled jobs
- Typically employed men with secondary education
- Unprecedented growth of low-skilled service jobs
- Dramatic growth of high-skilled jobs

# Seven global trends on future of work and jobs (2)

3

## EMERGENCE OF NEW JOBS

Activities linked to the application of new technologies

- Jobs for data processing
- Jobs for digital services
- Jobs for robotics and AI
- STEM jobs
- Mixing of disciplines

4

## CHANGING TASKS IN THE JOBS

- Task content moves from physical towards intellectual and social
- Increasing degree of autonomy/ teamwork
- Increasing adoption of ICT tools
- Upgrade of jobs in manufacturing and services
- Adding new tasks to existing jobs
- Revision of occupational profiles

# Seven global trends on future of jobs and work (3)

5

## SEGMENTATION OF KNOWLEDGE WORK

- ❑ Digital Taylorism: applying Fordist production into knowledge work
- ❑ Stratification of knowledge between (conception) and execution (doing)
- ❑ Developer roles vs. demonstrator roles
- ❑ Increasing standardisation of high-skilled jobs

6

## CHANGING EMPLOYMENT PATTERNS

- ❑ Rise of non-standard/ atypical employment
- ❑ New business model of digital economy
- ❑ Expanding temporary employment
- ❑ Increased multi-disciplinary teamwork, remote work, teleworking, flexible work

7

## EROSION OF JOB BENEFITS

- ❑ Less full-time, permanent and single-employer jobs
- ❑ Erosion of traditional employer-employee relations,
- ❑ Regulatory loopholes of employment status
- ❑ Ghost workers without offices, uniforms, computers

# Managing transition towards the future: skills

- ❑ “Panta rhei” (Heraclitus): Everything is in flux, the only constant seems to be ‘change’ itself requiring flexibility, adaptability, resilience and agility
- ❑ Countries need to manage their transition towards the future: outcome is shaped by the choices of political and economic elites
- ❑ Fundamental shift away from learning specific tasks toward ‘learning to learn’, other soft skills, ‘capability’ over ‘competence’
- ❑ Specific technical skills needed to use technology and perform certain tasks are not enough anymore
- ❑ New capabilities that everyone must have in the future: skills to get the most out of changing labour markets and perform effectively in different work-related settings as employees, self-employed and entrepreneurs

**Better future for all requires skills for everyone!**

**“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn” (Alvin Toffler)**

# Eight skills needed by all in the future (1)

1

**Cognitive and socio-emotional skills:** The increasing importance of intellectual and social tasks as well as those linked to human–machine interaction

2

**Digital skills:** All citizens need at least basic ICT skills and digital safety protocols – and a significant majority needs job-related digital skills

3

**STEM (Science, technology, engineering and mathematics):** Essential for innovation-driven economic development, already recorded high demand in specialisation areas

## Eight skills needed by all in the future (2)

4

**Green skills:** Environmental challenges and the policy objective of greening our economies create demand for labour in these areas – three levels of green skills

5

**Soft skills:** Also referred to as non-cognitive skills, transversal skills, personality traits, character skills, 21st century skills, life skills, etc. – it is a “new mindset”

6

**Multi-disciplinarity or composite skills:** It points to increasing demand for workers with wider skills and multiple expertise areas in the changing labour markets; e.g. composite skills, fusion skills, T-shaped skills



## Eight skills needed by all in the future (3)

7

**Entrepreneurial skills:** Individuals need them to adapt to changing forms of employment and enhance their flexibility and labour mobility

8

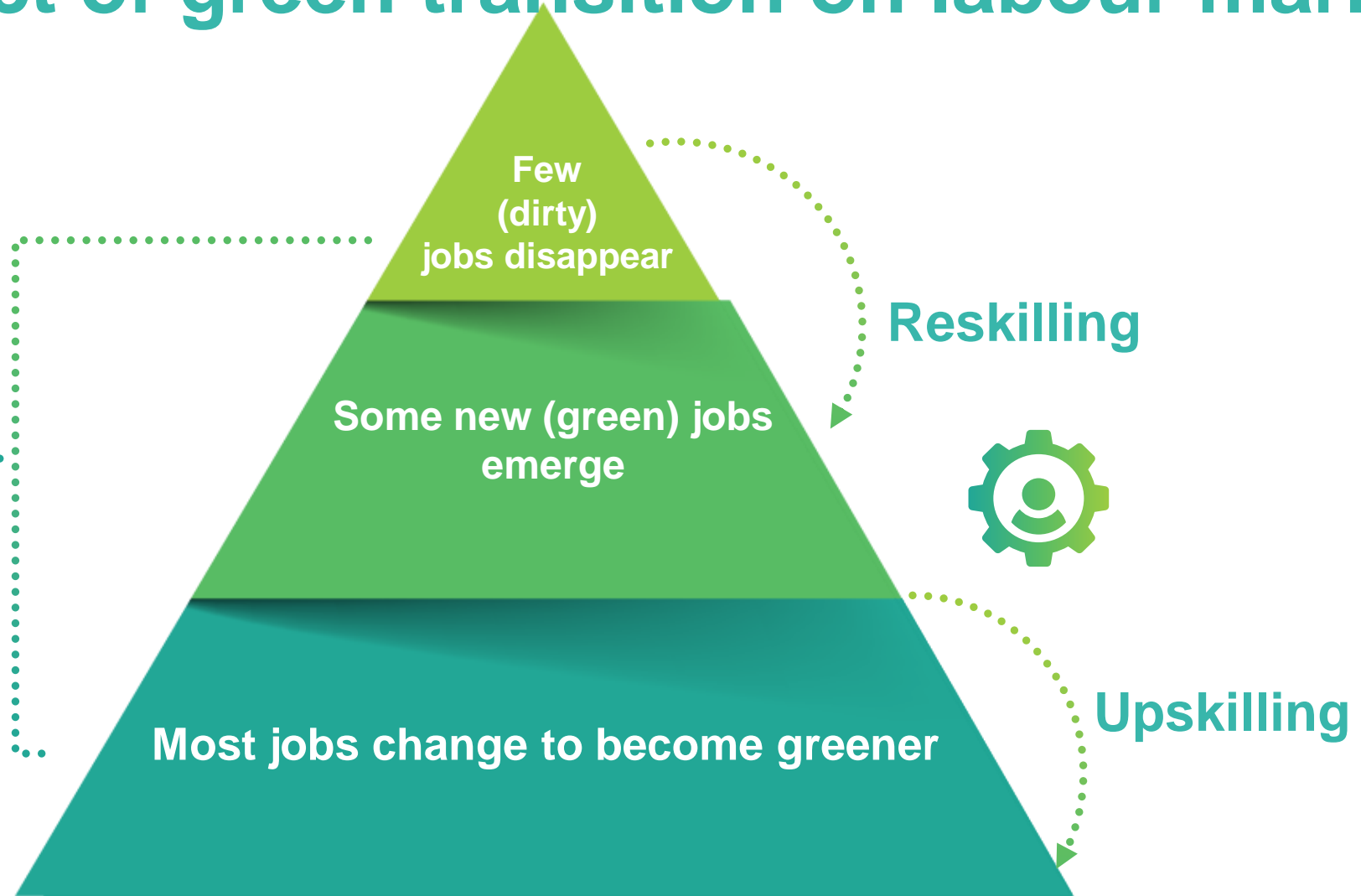
**Career management skills:** These enable people to navigate labour markets and manage their careers in a context of complexity and uncertainty

# The impact of green transition on labour market

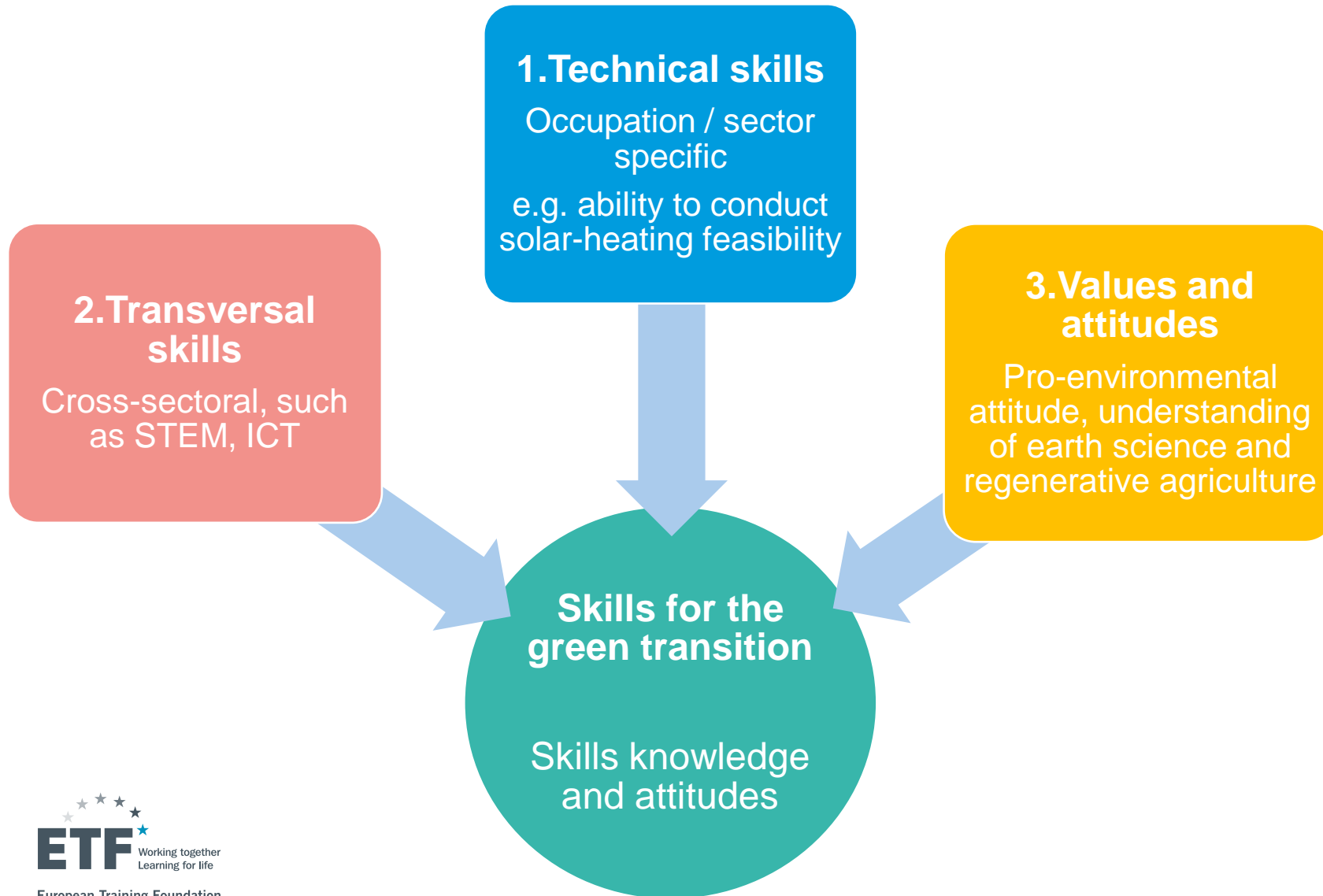


~~X Green skills~~

✓ Skills for green transition



# What are skills for green transition?



# Typology of skills for greening



Specific/ new green skills for new occupations: i.e., windmill turbine installer, solar technician, sustainability officer, energy efficiency expert



Topping up skills for greening existing occupations: e.g., car mechanic, plumber, electrician



Generic skills in environmental context: e.g., marketing specialist, banking investor

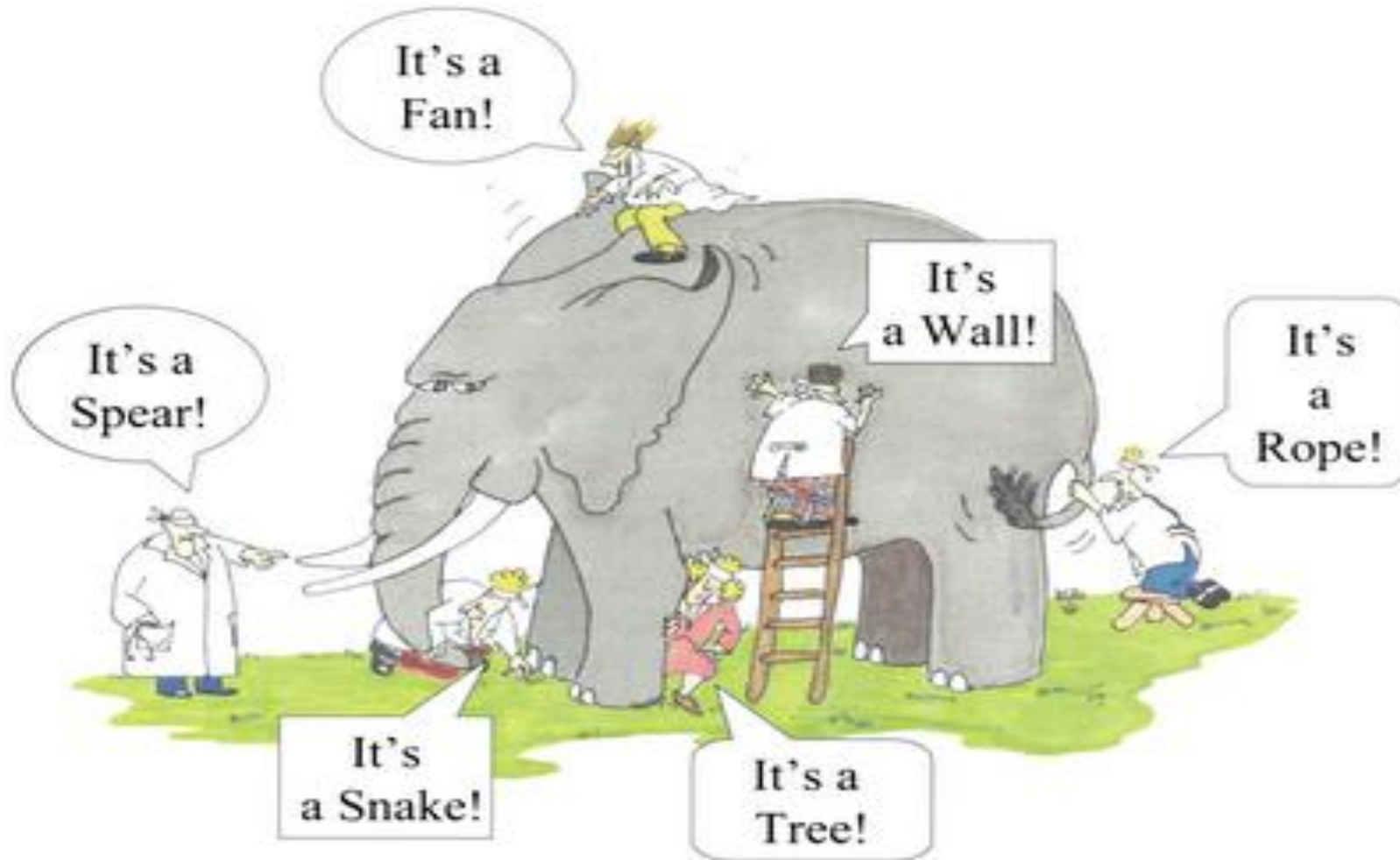


Generic technological processes: e.g., agrifood professionals, precision irrigation, digital skills



Positive attitude towards sustainability; green mindset: e.g., consumers, medical staff

# Final word on the future of work



## The future of work is all about skills!

“There’s never been a better time to be a worker with special skills or the right education, because these people can use technology to create and capture value. However, there’s never been a worse time to be a worker with only ‘ordinary’ skills and abilities to offer, because computers, robots and other digital technologies are acquiring these skills and abilities at an extraordinary rate” (Brynjolfsson and McAfee 2014)

**REFITTING EDUCATION IS KEY!**

# Further readings from ETF

[www.etf.europa.eu/en/publications-and-resources/publications/changing-skills-changing-world-understanding-skills-demand](http://www.etf.europa.eu/en/publications-and-resources/publications/changing-skills-changing-world-understanding-skills-demand)

[Edited green transition policy brief\\_EN \(europa.eu\)](#)

[The future of work – New forms of employment in the Eastern Partnership countries: Platform work | ETF \(europa.eu\)](#)

<https://www.etf.europa.eu/en/document-attachments/future-skill-needs-construction-sector-armenia-country-report>

[www.etf.europa.eu/en/publications-and-resources/publications/future-skills-case-study-automotive-sector-turkey](http://www.etf.europa.eu/en/publications-and-resources/publications/future-skills-case-study-automotive-sector-turkey)

[Future of skills: Energy sector in Albania | ETF \(europa.eu\)](#)

[https://www.etf.europa.eu/sites/default/files/2020-11/future\\_of\\_skills\\_agri-tech\\_sector\\_in\\_israel.pdf](https://www.etf.europa.eu/sites/default/files/2020-11/future_of_skills_agri-tech_sector_in_israel.pdf)

<https://www.etf.europa.eu/en/document-attachments/future-skills-energy-sector-tunisia>

