



# Anticipating Future Skills Needs in the Green and Digital Economy:

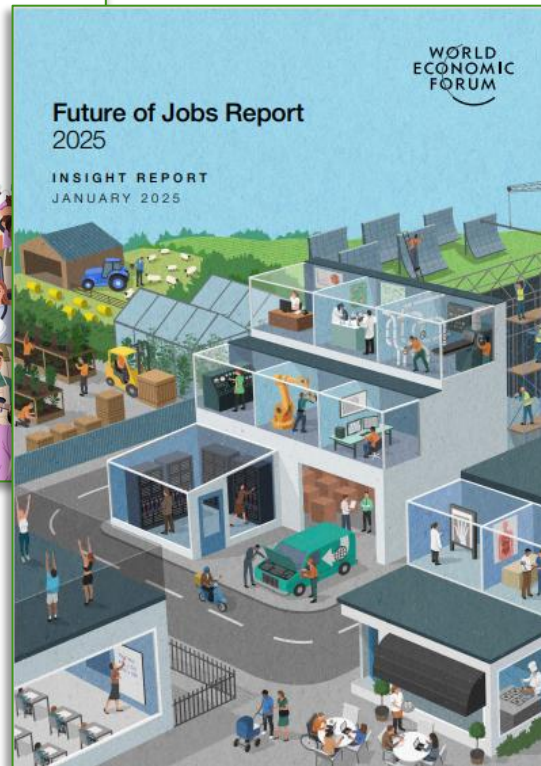
## Practical Tools for Cambodia

Mary Kent

Skills and Employability Specialist

15 December 2025

# Global Evidence: The Scale of the Green and Digital Transition



- ▶ **375 million**  
Jobs created through transition to low-carbon economy in the next decade
- ▶ **60% employers**  
Expect digital access and technology to transform their business by 2030
- ▶ **9 in 10**  
Jobs will require digital skills by 2030

# Global Research: An Integrated Green and Digital Transition

The image shows the cover of an ILO Brief. At the top left is the ILO logo and 'International Labour Organization'. To its right is the 'MINISTRY OF MANPOWER | MANPOWER RESEARCH & STATISTICS DEPARTMENT' logo. A red bar at the top right says 'ILO brief'. Below this, a blue bar contains 'ILO Brief'. The main title is 'Navigating the Future: Skills and Jobs in the Green and Digital Transitions' with the subtitle 'Scenario-based insights'. A 'Key points' section follows, containing several bullet points. Below that is a section titled 'Scenarios for green and digital transitions: Insights towards 2030' with a paragraph and a bullet point. A small footnote is at the bottom left.

November 2024

## Navigating the Future: Skills and Jobs in the Green and Digital Transitions

### Scenario-based insights

#### Key points

- ▶ Green and digital transitions can provide opportunities for a large-scale job creation if effective policy measures and investment are undertaken.
- ▶ The investments to achieve universal broadband coverage (hereafter "the digital scenario") and net zero carbon emission through the energy transition (hereafter "the green scenario") are expected to create 23.5 million and 37.2 million more jobs than the business-as-usual scenario, respectively. When these investments are integrated (hereafter "the integrated scenario"), they can create as many as 57.6 million more jobs than the business-as-usual scenario.
- ▶ The occupations benefiting from employment gains are observed at all skill levels, with the most significant gain in the medium-skilled occupations, which are expected to see 13 million additional jobs in the digital scenario, 18.5 million in the green scenario, and 30 million in the integrated scenario. These medium-skill level occupations account for about half of the new job opportunities.
- ▶ Youth (15-24 years old) are projected to gain 3.6 million jobs in the digital scenario, 5.8 million in the green scenario, and 9 million in the integrated scenarios. These opportunities will be mainly created at medium- and high-skill levels, suggesting more opportunities for relatively higher-skilled youth but also pointing towards the need to upskill low-skilled youth.
- ▶ Despite the opportunities, the projected impacts are not always distributed broadly. The gender distribution of the additional job creation is alarmingly unequal, with women gaining smaller share of additional job creation than men by 30 percentage points in the digital scenario, 46 percentage points in the green scenario and 40 percentage points in the integrated scenario. Similarly, in all scenarios, the older workers would see lower percentage changes in additional job creation than the overall working-age population. Furthermore, certain groups of occupations are more likely to benefit or lose out during the transitions. For instance, under the energy transition scenario, occupations related to agriculture, fishery and forestry sectors are likely to experience negative employment growth in middle-income countries.
- ▶ Reskilling, upskilling, and other support from labour market institutions and employment and social protection measures, designed and implemented through social dialogue, would be crucial for workers to safeguard income generation opportunities or transition to new jobs, and for enterprises to harness the opportunities presented by green and digital transitions.

#### Scenarios for green and digital transitions: Insights towards 2030

By 2030, there are opportunities for additional net job creation on a large scale that can arise from the investments in digital and energy transitions.<sup>1</sup> The magnitude of job creation is different in different policy and investment scenarios:

- **Digital scenario:** The main assumption is an increase in investment leading to the expansion of broadband coverage to achieve universal broadband coverage (defined as covering at least 90 per cent of the population) by 2030. The investments are expected to be allocated to the sectors that build new infrastructure. The expanded broadband

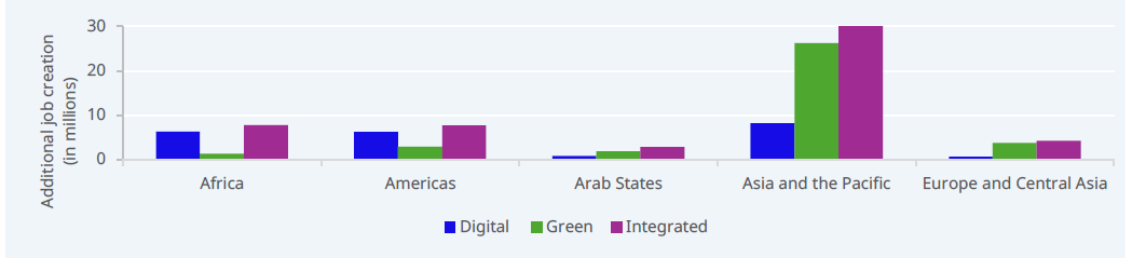
<sup>1</sup> This brief presents projections of employment by 2030 (in baseline, green, digital and integrated scenarios) produced by the global macro-econometric model ESMIE of the Cambridge Econometrics. ESMIE is a computer-based model of the world's economic, energy and environmental systems, in which behavioural relationships are estimated using econometric time-series techniques to quantify the economic and employment impacts of the implementation of policy-induced scenarios.

▶ Green and digital transitions are mutually reinforcing

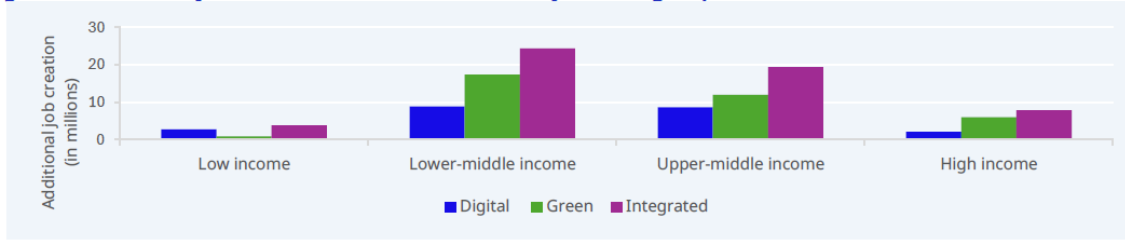
▶ Together they generate more jobs and productivity gains

# Where will the Growth Occur?

► Figure 2. Additional job creation relative to baseline by geographical region



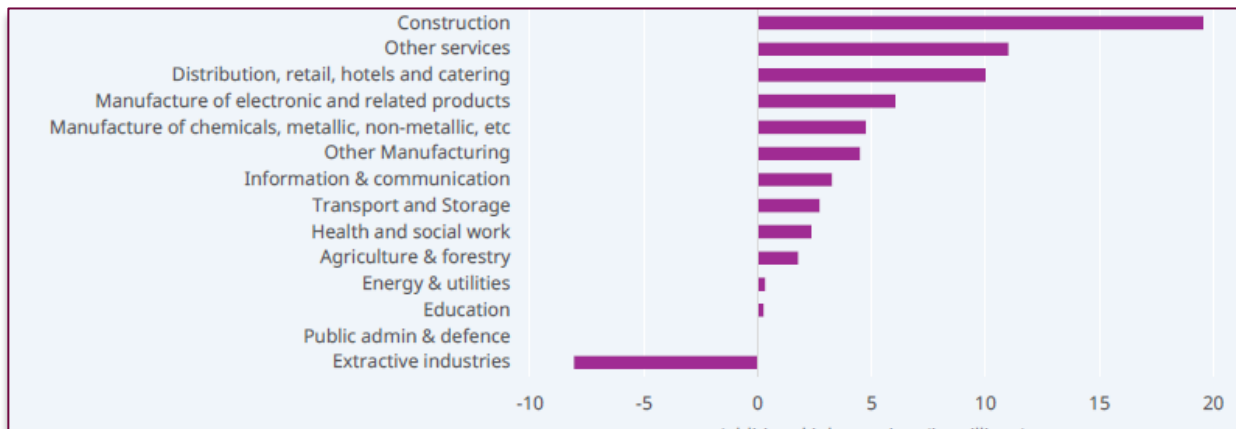
► Figure 3. Additional job creation relative to baseline by income group



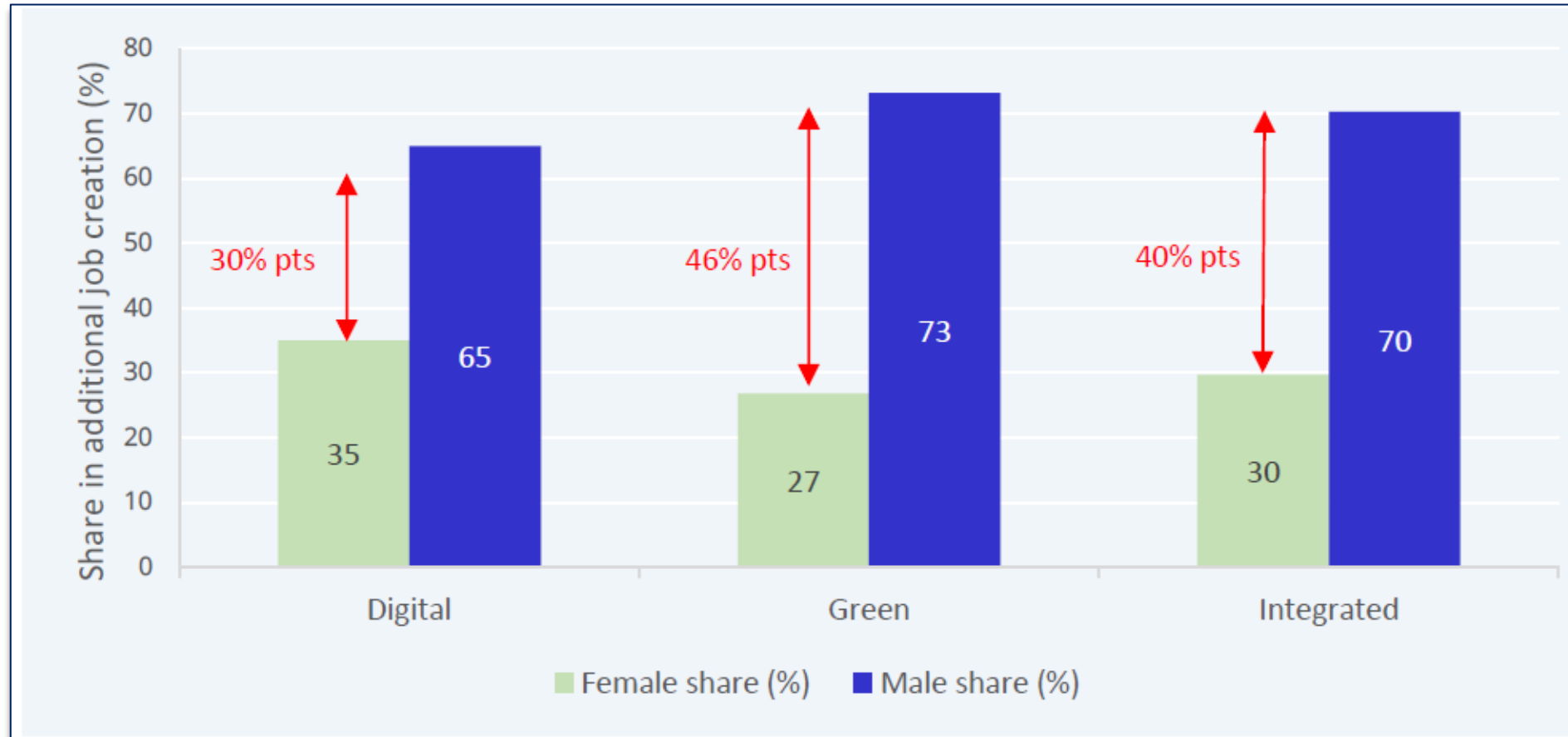
► Asia Pacific

► Lower middle-income countries

► Construction, manufacturing, hospitality



# Gender Gaps in Employment Opportunities



- ▶ Integrated scenario: **Women forecast to gain around 23 million LESS jobs than men.**

## Cambodia's Context

- ▶ Growth prospects
- ▶ Young demographics
- ▶ Trade uncertainties / geopolitics
- ▶ LDC graduation
- ▶ High informality
- ▶ Low skills base
- ▶ Elevated labour supply

## Skills Priorities



**Embed green and digital core skills for new entrants**



**Sector-led skills responses to remain competitive**



**Stronger lifelong learning pathways**

# Core Skills: Skills Needed Across All Sectors

## Basic skills for green jobs

- Environmental awareness
- Waste reduction and waste management
- Energy and water efficiency
- Occupational Health and Safety

## Basic digital literacy

- Ability to access and use technology to function at minimum levels in digital societies and economies



## Social and emotional skills

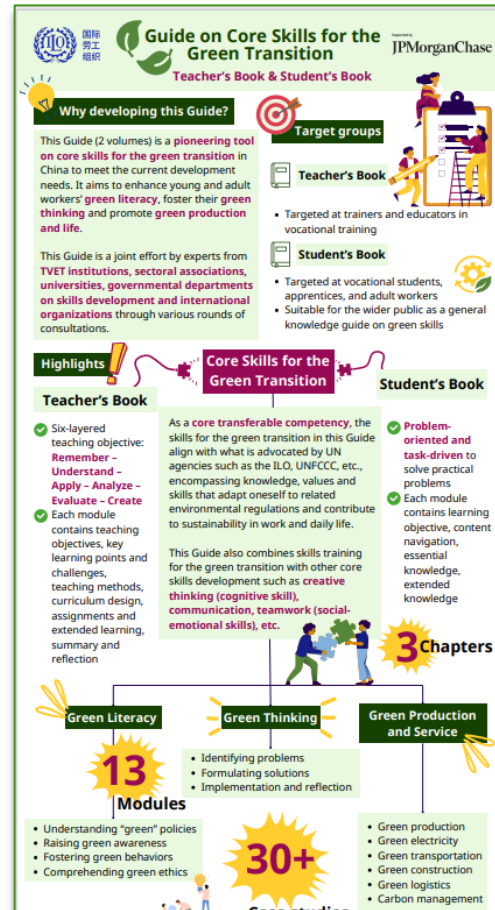
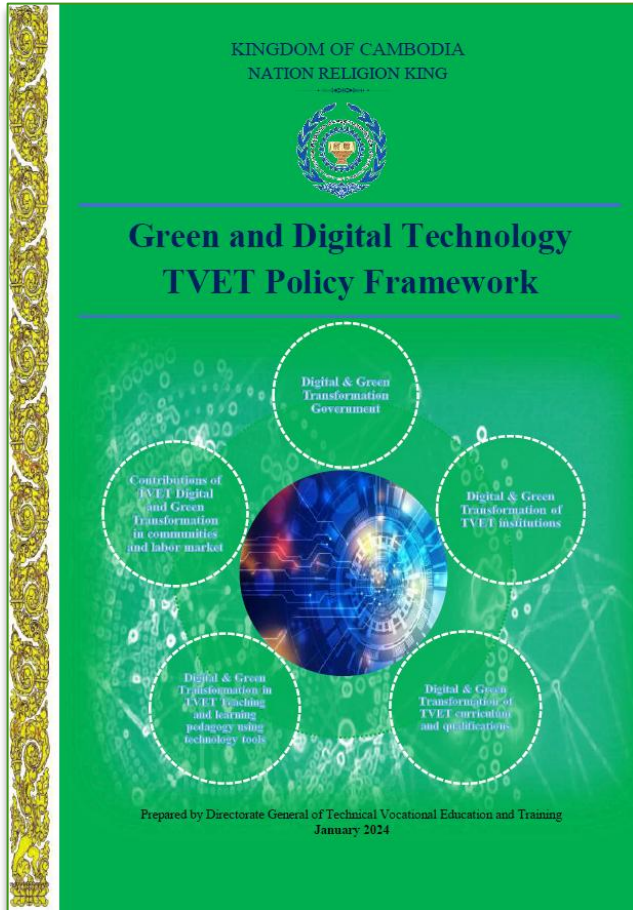
- Communication
- Teamwork
- Adaptability

## Cognitive and metacognitive skills

- Learning to Learn
- Analytical and critical thinking
- Problem solving

# Core Skills: Skills Needed Across All Sectors

## In practice



- ▶ Cambodia's Green and Digital Technology Policy Framework
- ▶ ILO China embedding green skills across TVET subjects

## Good Practice

- ▶ Integrate skills at subject level
- ▶ Consult with employers for real life examples

# Why Skills Anticipation for Green and Digital transitions?



- ▶ Which jobs and skills are emerging, which are declining?
- ▶ Which policies or investments will support quality job growth through green and digital transitions?
- ▶ Who is at risk of being left behind?
- ▶ How should limited skills resources be allocated?

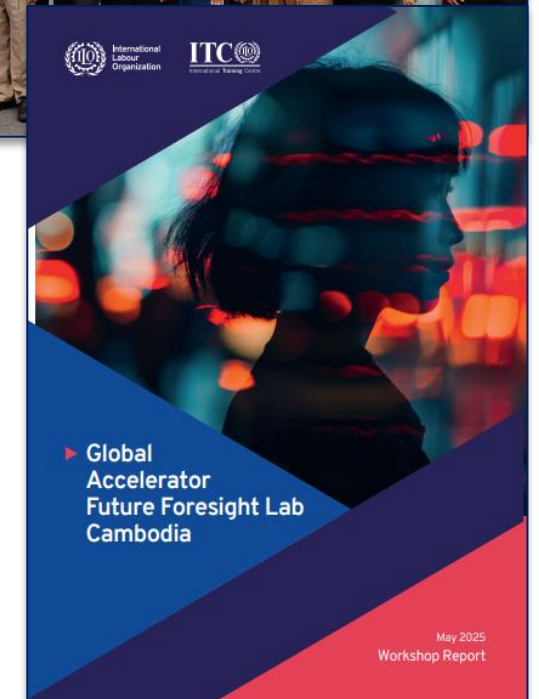
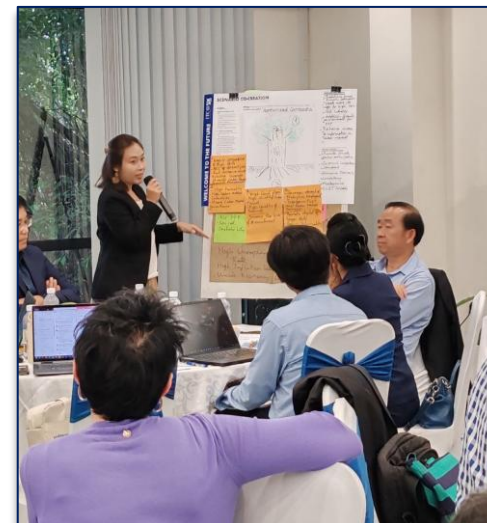
# Anticipating Skills Needs in a Dynamic Skills System



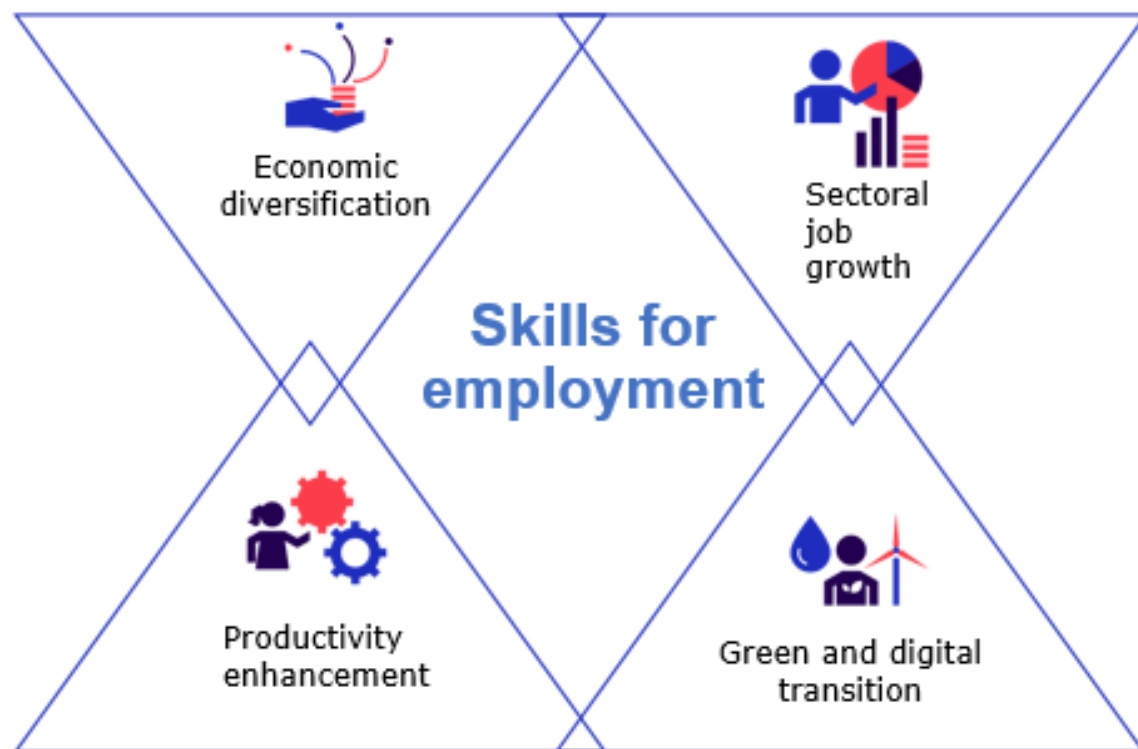
- Evidence-based TVET planning, funding
- Develop and implement new skills pathways to decent employment

# Anticipating Skills Needs in a Dynamic Skills System

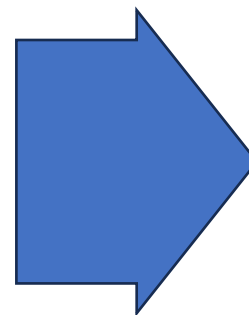
## In practice



# Skills for Productivity, Environment and Economic Diversification (SPEED)



- ▶ Tool to maximise local employment impact of green and digital transition by addressing critical skills challenges
- ▶ Consultative approach to skills needs anticipation
- ▶ Embeds skills policy into broader industrial development strategies

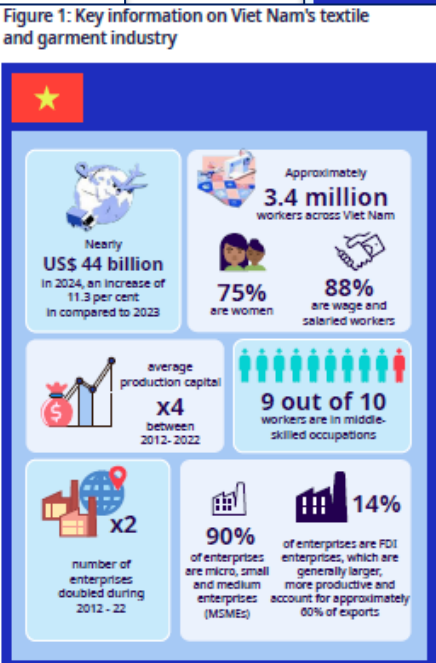


- ▶ Skills system capacity building tool
- ▶ Sectoral skills priorities
- ▶ Skills frameworks

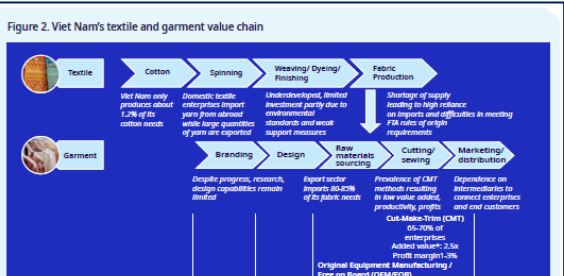
# SPEED Analysis In practice

International Labour Organization  
VITAS  
Brief  
February 2025  
Towards a skills strategy for the textile and garment industry in Viet Nam: Sector analysis, priority skills needs, actions, and recommendations

- Key points**
- Viet Nam's textile and garment industry has experienced significant growth and made substantial economic contributions to help drive national development, including through the creation of millions of jobs, particularly for women.
  - Job quality in the sector is improving as informality levels decline. Some Decent Work deficits remain, partly due to features of global value chains (GVCs) that result in high shares of temporary employment and excessive working hours. This often translates into some enterprises' non-compliance with labour laws and standards, particularly occupational safety and health (OSH), that leaves workers and particularly women exposed.
  - Real wages are growing but slower than the manufacturing average leading to competition to attract workers. Labour productivity and profit margins remain low, dampened by the large share of micro, small and medium-sized enterprises (MSMEs), primarily operating under the cut-make-trim (CMT) production method.
  - There is a significant divide between foreign direct investment (FDI) enterprises, which comprise the majority of large sectoral player firms in terms of technology innovation, productivity, and profit.
  - The textile and garment industry crossroads, looking ahead, then to enhance productivity and model toward sustainable one practices, and technological (digital transformation). Do not address the structural value chain, which also resonates with the skills to drive this transition.
  - To realize this transformational recommends a number of key optimizing the policy environment training linkages, the relevant programmes, inclusive and education and training policies, of training, industry parties development, and financing skills and training. Additional business capability gaps, skills highlights priority skills and into occupational groups in the short long term.



Source: ILO and VITAS, 2025. Skills for Trade and Economic Diversification. Analysis of the textile and garment industry in Viet Nam.

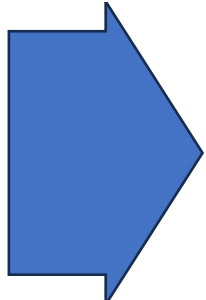


**Table 2: Occupational and skills demand in Viet Nam's textile and garment sector**

Occupational group <sup>1</sup>	Scale of employment / share of total employment	High demand occupations and occupations facing skills shortages/recruitment challenges	Skills requirements
<b>Managerial/ leadership</b>	2022: Approximately 3,000 workers or 0.2% of workforce. Trends 2012-22: Decline in employment and some tend to decline in self-employment. Women share: 30%, up from 28 per cent in 2012.	Director of HQ <sup>2</sup> Manager of garment transition <sup>3</sup> Production manager <sup>4</sup> Product quality manager <sup>5</sup> Supply chain manager <sup>6</sup>	Soft skills: coaching and mentoring skills, self-learning, planning and decision-making, presentation and consensus-building, leadership, change management, critical thinking, conflict resolution, and creativity.
<b>Professionals</b>	2022: Approximately 62,000 workers or 1.8% of workforce. Trends 2012-22: Number of workers doubled from approximately 30,000 in 2012. Women share: 69%, up from 66% in 2012.	Product and fashion designer <sup>7</sup> Digital fashion designer <sup>8</sup> Fabric professional <sup>9</sup> Yarn, textile, dyeing specialist <sup>10</sup> Fabric supply specialist <sup>11</sup> Environment specialist <sup>12</sup> Electronic and mechanical engineer <sup>13</sup> Automation specialist <sup>14</sup> High-tech specialist <sup>15</sup> Online marketing specialist <sup>16</sup> Communication and branding manager <sup>17</sup> Specialist <sup>18</sup>	Professionals in material sourcing need a comprehensive understanding of various types of fabrics, including characteristics, applications, and suppliers. They must also be adept at negotiation and capable of establishing partnerships with raw material suppliers to secure the best price and service. Current product development skills and design capabilities of domestic designers are deemed insufficient. There is a need for skill sets along the value chain including design, product development, logistics, branding, marketing, sales, and customer services.
<b>Technicians and associate professionals</b>	2022: Approximately 97,000 workers or 1.1% of workforce. Trends 2012-22: Increased by 5,000 workers or 10% since 2012. Women share: 66%, down by 1 percentage point since 2012.	Team leader/line leader <sup>19</sup> QA/QC quality assurance, quality control staff <sup>20</sup> Fabric supply technician <sup>21</sup> Purchasing staff/holders <sup>22</sup> Supply chain officer <sup>23</sup> Sample developer, sample swing technician <sup>24</sup> Green energy technician <sup>25</sup> Environmental and sustainability staff <sup>26</sup> Associate staff <sup>27</sup> Compliance administrator <sup>28</sup> Internal administration staff <sup>29</sup> if staffed	In addition to technical knowledge, line leaders must have leadership, management, essential and soft skills. Supply technicians, purchasing staff and supply chain officers must have skills related to negotiation, establishing partnerships, logistics.
<b>Clerical support workers</b>	2022: Approximately 10,000 workers or 0.1% of workforce. Trends 2012-22: Number of workers more than doubled from approximately 25,000 in 2012. Women share: 67%, relatively unchanged since 2012.	Human resource/organization officer <sup>30</sup> Compliance officer <sup>31</sup>	Greening/retrofitting/environmental, social, and governance (ESG) skills, safety and health skills, organization and planning of work.
<b>Crafts and related trades workers</b>	2022: Approximately 353,000 workers or 3% of workforce. Trends 2012-22: Number of workers increased from 80,000 in 2012 but share in employment decreased from 6%. Women share: 81%, down 2 percentage points since 2012.	Sewing worker, packer, sewing repair worker <sup>32</sup>	Technical skills related to specific occupations, operating modern automatic machinery and equipment, OSH, organization and planning of work and use of digital tools to control devices. Workers need soft skills such as self-learning, time management and team work.
<b>Plant and machine operators, and assemblers</b>	2022: Largest occupational group with more than two million workers or around 61% of workforce. Trends 2012-22: Number of workers more than doubled from 791,000 and share in employment increased significantly from 44% in 2012. Women share: 24%, down by 2.8 percentage points since 2012.	Skilled garment workers, operators of all types of machines at an enterprise <sup>33</sup> Cutting worker <sup>34</sup> Lower fabric cutting worker <sup>35</sup>	

<sup>1</sup> Occupations are defined according to the International Standard Classification of Occupations (ISCO-08) and List of Viet Nam's occupations (Decision No. 14/2020/QĐ-TTg issued by the Prime Minister on 20 November 2020). The table includes sales and repair occupations (60,000 workers or 1.4 per cent of workforce in 2022) and elementary occupations (141,000 workers or 4.2 per cent of workforce in 2022), as these groups were not highlighted as having high-demand occupations or recruitment challenges/skills shortages. <sup>2</sup> Represents occupations facing skills shortages/recruitment difficulties.

Source: ILO and VITAS, 2025. Skills for Trade and Economic Diversification. Analysis of the textile and garment industry in Viet Nam. ILO and VITAS, 2025. Towards a sector skills strategy for Viet Nam's textile and garment industry: priority skills needs, actions, and recommendations for education and training system.



- Facilitated through VITAS
- Capability gaps across value chain
- Actionable recommendations on integration of environmental standards for European markets
- Digital upskilling for marketing, distribution and sales

# Skills Needs Anticipation

## In practice: SENAI, Brazil Foresight model



3million  
Enrolments

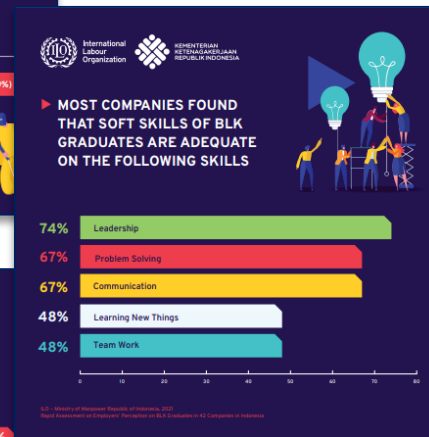
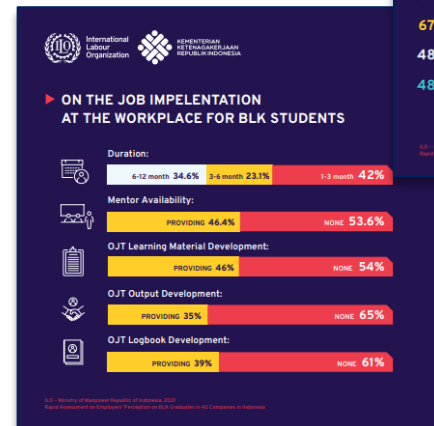
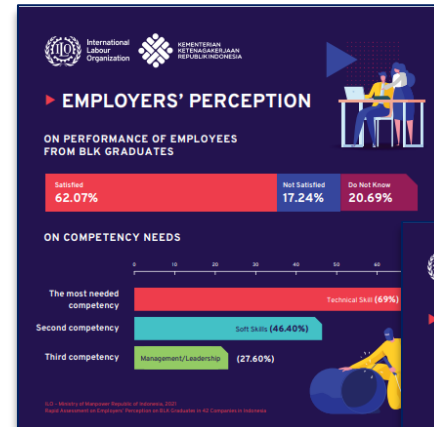
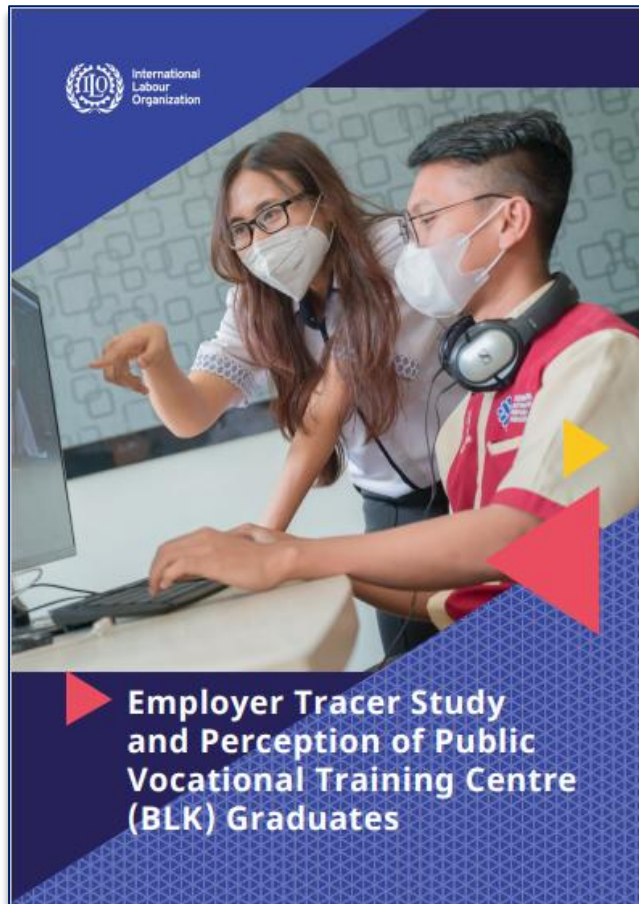
90%  
Employment

2035  
Gender parity

- ▶ Technological and organizational trends requiring a response in terms of labour training
- ▶ Steering TVET provision to meet anticipated industry skills demands
- ▶ Able to forecast skills needs at a city level

# Tracer Studies and Employer Perceptions Surveys

## In practice



- ▶ Are graduates finding work?
- ▶ Are they using the skills they were taught?
- ▶ Are inclusion initiatives working well?
- ▶ Can be used to target TVET financing

# Targets for Skills for Green and Digital Transitions to Maximize Employment Gains



**Digital access, digital and green skills across all TVET**



**Strengthen LMI and skills anticipation coordination**



**Create gender-responsive and inclusive skills pathways**



**Develop sector level skills strategies with industry and workers**



**Focus incentives and skills financing to courses linked to decent job growth**

# NATIONAL TVET DAY 2025



**Thank you for  
listening**