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Item 5 (a) of the provisional agenda*
Parallel sessions

Harnessing productive jobs: equipping women and girls with the skills of tomorrow

Aide-memoire

I. Context

1. The fourth session of the Committee on Social Policy, Poverty and Gender will be held online on 17 and 18 November 2021 under the theme "Building forward better towards an inclusive and resilient future in the context of COVID-19".

2. Within the context of the session, the Gender, Poverty and Social Policy Division of the Economic Commission for Africa (ECA) will convene a number of parallel sessions, including a parallel session on "Harnessing productive jobs: equipping women and girls with the skills of tomorrow".

II. Background

3. In line with the theme for the fourth session of the Committee, which focuses on resilient growth through productive job creation, this parallel session will focus on the emerging skills required for the productive jobs of the future, the opportunities that women and girls will have to acquire such skills and the challenges they will face in doing so. Many of the jobs and the skills required are digital and are largely related to the Fourth Industrial Revolution. These jobs bring technological innovation to traditional industrial and commercial sectors and require the integration of theoretical and educational disciplines such as biotechnology, nanotechnology, space technology, agricultural technology, big data analytics, the Internet of Things, robotics, three-dimensional printing, artificial intelligence and cloud computing.

4. Globally, the number of connected Internet of Things devices in 2020 reached 11.7 billion, surpassing the number of devices without such connections for the first time. This figure is expected to grow to 30 billion by 2025.[1] In 2018, the Internet of Things market was valued at $151 billion and

* E/ECA/CSPPG/4/1.

[1] Knud Lasse Lueth (IoT Analytics), "State of the IoT 2020: 12 billion IoT connections, surpassing non-IoT for the first time.", 19 November 2020.

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was forecast to grow to $1.6 trillion by 2025.[2] The global biotechnology market is expected to reach $2.44 trillion by 2028.[3] The emergence of regenerative medicine, the use of genetics diagnostic technology and the penetration of artificial intelligence are expected to fuel progress, and open up new possibilities for Africa to benefit from global trends and create productive jobs.

5. Given the pace and scale of the upcoming disruption introduced by the Fourth Industrial Revolution, keeping up with the required skill sets will become an even greater challenge than it was in previous industrial revolutions.[4] According to estimates, almost half of the technical knowledge acquired by students during the first year of a 4-year technical degree becomes outdated by the time those students graduate, leading to unprecedented change in core curriculum content.[5] A new approach to skills training and knowledge retention is therefore necessary, with lifelong learning becoming standard practice.

6. The merging of the physical, digital and biological worlds fuelled by such advances is hugely promising, but could also be dangerous. Meeting this demand for productive job creation and emerging economies will require cross-fertilization of academic lines of study, innovation in integrating and adapting traditional theoretical models and frameworks, practical "on-the-job" or in situ training, increased opportunities in applied research and development, and shorter time frames for bringing ideas to market, from the inception phase to development and distribution.

7. These changes and technological trends are reshaping the development and sustainability of future labour markets and are highly dependent on science, technology, engineering and mathematics. For example, it is expected that at least 40 per cent of new application development projects will include artificial intelligence co-developers on their teams by 2022.[6] According to the World Economic Forum, digital transformation will significantly increase demand for the ability to work with data and make evidence-based decisions, which will become vital skills across many job families. Countries will therefore need a workforce with solid data analysis and presentation skills.[7] If women and young people do not acquire those skills, they will be left out of the future labour market and left behind as the jobs of the future begin to emerge and take shape.

8. Technological inequality is widening globally. Those who are digitally connected remain in the best position to reap the many benefits of the digital and virtual revolution. Africa is the region with the lowest proportion of people who use the Internet, at 29 per cent in 2019, compared with a global average of 51 per cent.[8],[9] Such a disparity could exacerbate existing inequality in

[2] Knud Lasse Lueth (IoT Analytics), "State of the IoT 2018: Number of IoT devices now at 7B – Market accelerating", 8 August 2018.

[3] Grand View Research, "Biotechnology market size, share & trends analysis report by technology (DNA sequencing, nanobiotechnology), by application (health, bioinformatics), by region, and segment forecasts, 2021–2028".

[4] Infosys, "Amplifying human potential: education and skills for the fourth industrial revolution", 2016.

[5] Scott McLeod and Karl Fisch, "Shift happens", https://shifthappens.wikispaces.com, as cited in World Economic Forum, "The future of jobs: employment, skills and workforce strategy for the Fourth Industrial Revolution", Global Challenge Insight Report (Geneva, World Economic Forum).

[6] Knud Lasse Lueth, "State of the IoT 2018".

[7] World Economic Forum, "The future of jobs: employment, skills and workforce strategy for the Fourth Industrial Revolution", Global Challenge Insight Report (Geneva, World Economic Forum).

[8] Proportions may vary according to the sources used. For example, according to the World Telecommunication/ICT Indicators Database 2020, the proportion of individuals using the Internet in 2019 was 28.6 per cent in Africa and 51.4 per cent globally.

[9] International Telecommunications Union (2019), "Measuring digital development: Facts and figures 2020".

respect of wealth, income, opportunity, education and health. The digital gender divide has also widened: the global gender gap in Internet usage increased from 11.0 per cent in 2013 to 17.0 per cent in 2019, while in Africa, the gap increased from 20.7 per cent in 2013 to 33.0 per cent in 2019.[10] The COVID-19 pandemic has further cemented digital gender gaps, especially where Internet bandwidth and availability is taken up by higher demand for online solutions.

9. The most recent edition of the ECA publication African Women's Report, which will focus on digital finance ecosystems as pathways to women's economic empowerment in Africa, will highlight gender disparities in the use of information and communications technology, mobile Internet and other digital services. Despite improvements to digital connectivity infrastructure in many parts of Africa, women tend to use digital services less than men in almost every aspect. Consequently, digital infrastructure and services are underutilized in general. Since digital connectivity infrastructure still forms the backbone of virtual and digital industrialization, it is imperative to identify the challenges that contribute to lower usage of digital services among women and girls in order to devise solutions that are gender-responsive.

10. The advent of massive open online courses, the automation of highly skilled work and the demand for new skills in data science have allowed many education and training opportunities to emerge. For example, the most in-demand jobs in most industries by 2022 will be in artificial intelligence, machine learning and data science. Given that the necessary skill set in the area of data science is evolving rapidly as technologies move forward, specialists in this area require constant training and development to keep up with the latest trends.[11] In addition, employers are moving away from traditional recruitment practices and staff profiles. Instead, they are beginning to look beyond hard skills and formal education, and expect current employees and future recruits to have work-related practical skills and competencies.[12] There is an urgent need for structured employment policies that are inclusive, gender-responsive and consistent with the demands of the largely technology-driven workplace of the future.

11. As part of the ECA programme of work for 2022, subprogramme 6 (on gender and women in development) includes a focus on enhancing the capacity of member States to positively reimagine gender dimensions in their economic and digital transformation as a significant result area. Specifically, the subprogramme will focus on the measure of performance that looks at the development of capacity in five African countries (Cameroon, Eritrea, Lesotho, Sierra Leone and Tunisia)[13] to introduce and revise policies and programmes designed to reduce the gender digital divide, building on results from previous years. Digital information and communication technologies are essential to stimulate a promising digital and information economy across Africa, create the jobs of the future for the continent's growing youth population, build up a critical mass of highly skilled and technically qualified workers for the labour market and provide the tools to empower women and girls throughout Africa. The work in this area of subprogramme 6 is expected to carry over into 2023 and probably into 2024.

[10] International Telecommunications Union (2019), "Measuring digital development: Facts and figures 2019".

[11] Kasey Panetta, "Gartner Top 10 strategic technology trends for 2020", 21 October 2019.

[12] James Bessen (Harvard Business Review), "Employers aren't just whining – the 'skills Gap' is real", 25 August 2014.

[13] The countries are drawn from the five subregions based on a range of factors, including the maturity of information and communications technology and technological infrastructure in those countries.

12. Women and girls, who continue to face cultural and institutional barriers in science, technology, engineering and mathematics education and training, can easily be integrated into emerging virtual spaces and digital initiatives. This would increase the number of women and girls who have the skills that will be critical in the emerging global job market (through upskilling, reskilling and continuous learning) and reduce the many hurdles that women face in terms of their active inclusion and participation in public life and society at large (through the decreasing need to be physically present).

13. The purpose of this parallel session is to explore how women and girls can be better equipped with the skills for tomorrow so that they will be qualified for the more productive jobs that will emerge as a result of the inevitable digital and virtual industrialization of the labour market.

III. Objectives

14. The overall objectives of the parallel session are to provide member States with an opportunity to discuss and deepen their understanding of what needs to be done to cultivate in women and girls the advanced knowledge in science, technology, engineering and mathematics and the digital skills necessary for the emerging technology-intensive job market, and to provide feedback and input on how to address the ongoing challenges that women and girls experience in education, training and engagement in those fields.

15. Specifically, the session will:

(a) Provide a platform to discuss the role of science, technology, engineering and mathematics in the future job market for women and girls in Africa;

(b) Provide an opportunity for participants to discuss the challenges that women and girls face when pursuing careers in science, technology, engineering and mathematics, by identifying their role within virtual spaces and embracing the digital technology revolution;

(c) Facilitate feedback and recommendations – which will inform the work of subprogramme 6 in 2022 and beyond – on how ECA can better support its member States by addressing gender digital divides, the potential gender skills gap in the Fourth Industrial Revolution and the cultural, social and institutional barriers to education and training in science, technology, engineering and mathematics for women and girls.

IV. Expected outcomes

16. The following outcomes are expected from the parallel session:

(a) A deeper understanding of the cultural and social barriers holding women and girls back from pursuing education and training in science, technology, engineering and mathematics, and a stronger capacity to identify institutional biases that can marginalize women and girls and typecast them to certain roles through occupational segregation and exclusion, especially in the digital and technology sectors;

(b) The identification of emerging opportunities for lifelong learning, education and training that address the many challenges women and girls already face in pursuing research and career pathways related to the Fourth Industrial Revolution, the digital revolution and the ever-increasing use of virtual spaces and solutions;

(c) Enhanced knowledge of policy interventions to create an enabling environment for women and girls to excel in using technology, thus equipping them with the labour skills they will require for the future.

V. Format

17. The parallel session will be held in a break-out format during the fourth session of the Committee, as indicated in the provisional agenda. A thematic presentation will be made by the Committee secretariat, which will be followed by discussions in which relevant experts will make observations/comments, draw conclusions and make recommendations.

VI. Documentation

18. The parallel session will be informed by research and analysis provided in relevant publications, technical materials and knowledge products. These will be shared online with participants during the parallel session.

VII. Participation

19. Participants in the parallel session will include experts from ECA member States drawn from ministries responsible for gender, education, social development and employment.

20. The Gender, Poverty and Social Policy Division serves as convener and secretariat of the Committee on Social Policy, Poverty and Gender.

VIII. Language

21. The parallel session will be conducted in English and French, with simultaneous interpretation.