POLICY BRIEF

A DIGITAL TRANSFORMATION TO SECURE SOCIAL INCLUSION FOR ALL: STRATEGIC FORESIGHT AND POLICY IMPLICATIONS

Abstract: *Digital technologies hold significant potential for addressing disparities across various sectors such as education, agriculture, manufacturing, services, finance, healthcare, jobs, social protection, environmental and climate change, and governance. Recent research underscores that digitalization, including the development and deployment of artificial intelligence (AI), can foster inclusivity and equity through human resources development, including education and skill development, accessibility to social and basic services, women's economic empowerment, ensuring equitable governance and transformative development pathways, and multi-stakeholder engagement. However, digitalisation poses socio-economic and environmental challenges, particularly for persons in vulnerable or marginalized groups or situations. The policy brief uses futures and foresight methods to explore how digital transformation can be a catalyst for social inclusion for all by 2040.*

1. INTRODUCTION

Digital transformation is increasingly being recognized as a game changer that can accelerate the achievement of a more inclusive economic development, social equity, and environmental sustainability worldwide. At the same time, the current analysis also highlights that digital transformation can widen the development gaps, creating socio-economic inequalities and causing environmental degradation and biodiversity losses.[1] As communities look towards 2040 and beyond, there is once-a-generation opportunity to steer this transformation right to ensure that it translates into shared economic and social prosperity for all and help accelerate progress towards sustainable development.

The global community is at a crossroads; critical decisions on what trajectories to take to shape digitalization's future role in sustainable development could risk developing countries lagging further behind due to insufficient capabilities and infrastructures to leverage digital technologies. As an illustration, 2.6 billion people still remain unconnected while only 20 per cent of African schools are connected to the internet. For example, with the demographic dynamics shaping Africa's future, improving the quality of primary and secondary education must be a key policy consideration as IFC estimated 50 percent of countries in Africa have 'computer' skills as part of their school curriculum, compared to 85 percent of other regions.[2] With rising youth population in developing countries, not addressing the education and digital skills gap will only exacerbate existing inequalities and global digital divides.

Key messages

1. Digital transformation is a game changer that can accelerate progress towards more inclusive economic development, social equity, and environmental sustainability. However, if not well managed, digitalization can lead to socio-economic inequalities, environmental degradation, and biodiversity loss.
2. Ensuring the rolling out of AI technologies is a significant policy concern across all regions. In current trajectory, the distribution of wealth and power afforded by AI technologies could be highly unequal. The structural and infrastructural preconditions of AI remain key issues across regions. These are essential for building local AI ecosystems that embed local value systems and address local problems.
3. Leveraging digital technologies have the potential to help countries address disparities across various sectors. To unlock the full potential of digitalization, policymakers should focus on the drivers of change, utilizing the UN's strategic STEEP (Social, Technological, Economic, Environmental, and Political) planning framework as a foresight tool to anticipate crises and make informed decisions for the future.
4. Shaping the future of digitalization must be at the heart of a strong commitment from the global community. Five policy options are crucial: Integrate digital technologies for social inclusion across all levels of government; Develop targeted programs to support access to and use of these technologies; Promote sustainability in business strategies and actions, leveraging digital technologies; Foster dialogue and solidarity between governments, businesses, and communities; and Invest in climate-resilient digital infrastructure and networking systems.

1 UN (2020). Report of the Secretary-General Roadmap for Digital Cooperation June 2020. Roadmap_for_Digital_Cooperation_EN.pdf (un.org).
2 IFC (2019). Available at https://www.ifc.org/content/dam/ifc/doc/mgrt/digital-skills-final-web-5-7-19.pdf.

The present policy brief identifies how digital technologies can help countries address disparities across various sectors such as education, agriculture, manufacturing, services, finance, healthcare, jobs, social protection, environmental and climate change, and governance. Recent research underlines that the digitalization, including the development and deployment of artificial intelligence (AI), can foster inclusivity and equity through education and skill development, healthcare accessibility, equipping farmers and fishermen with digital solutions, overcoming language barriers, women's economic empowerment and governance, improved disaster management and multi-stakeholder engagement.[3] However, it can also pose unintended socio-economic and security challenges. The policy brief aims to explore how digital transformation can be a catalyst for social inclusion for all by 2040.

2. CURRENT CONTEXT

One of the biggest hurdles with the digital transformation is the existence of digital divide between developed and developing countries and their capability to harness digital technologies to realize sustainable digital transformation and connectivity, especially in least developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing States (SIDS). Today, 63 per cent of the global population are internet users but only 27 per cent of the population in the least developed countries are connected. It is therefore critical to take into account the digital readiness of countries when looking to the question of digital transformation and social inclusion.

The digital transformation is happening rapidly. We need to understand what are the technological scenarios that can help developing countries leverage innovation and digital tools securing inclusive future. The question of urban-rural, generational, accessibility, affordability and gender divide are also becoming more urgent, so there is a need to ensure equal opportunities regardless of the geography. Governance, economy and society form the three key pillars of digital transformation.

On governance, UNDESA (2022) highlighted the consistency and steady progress in the digital transformation journey and the ability of Governments to take action to digitalise and modernise their functions and operations across the regions. In this vein, Governments are making use of digital technologies in ensuring efficient, transparent and effective processes in the administrative matters. For instance, the latest information E-government survey 2022 from UNDESA reports that the E-Government Development Index improved across all regions globally. African region score (0.405) is quite below compared to other regions such as the Americas (0.643), Asia (0.649) and Europe (0.6493) respectively.[4]

More generally, digitalization has been adopted widely across different government functions with an intention to move towards a whole-of-government approach. This is the case for digital identity, procurement and payment system which enable more services, supports more efficient and transparent processes. At local level, digitalization is also supporting the transaction, digital payments, e-commerce, and service delivery of utilities (electricity, gas, and water) as well as in areas related to registration of business, tax payment services and building permit and land title registration.

Many countries have improved their ICT connectivity and are developing and strengthening digital public infrastructure, helping them build a solid foundation for accelerating digital transformation. However, these development efforts are undermined in some economies because the cost of mobile broadband subscriptions as a percentage of per capita of gross national income remains significantly higher in the LDCs compared to other developed countries. In this regard, the United Nations Broadband Commission for Sustainable Development Broadband Advocacy Target 2 calls for broadband to be affordable by 2025, with entry-level broadband services in low- and middle-income countries at less than 2 per cent of monthly gross national income (GNI) per capita.

BOX 2.1

ICT in the Caribbean SIDS

In the Caribbean, ITU has been assisting SIDS through the development of ICT policies and regulations, infrastructure mapping as well as technology development and ICT applications and cybersecurity capacity development. Given the region's vulnerability to environmental and climate change and natural disasters etc, ITU has provided support through the following:

- A National Emergency Telecommunication Plan (NETP),
- Satellite equipment for rapid response EW4ALL systems,
- assessments of network resilience,
- infrastructure mapping, and
- implementation of the Smart Seas Initiative.

The beneficiaries include Grenada, Haiti, St. Vincent and the Grenadines, St. Kitts, and Nevis, Trinidad, and Tobago, among others. ITU has also provided support towards meaningful connectivity through enhanced National ICT Plans, Regulations (ICT Regulations Toolkit), rates and costing reviews, and the Giga project (school broadband levels upgrade). Finally, ITU provided Digital Financial Services and mobile security to bridge the financial gaps.

Out of 188 economies for which data is available, a record 114 economies met this target in 2023, up from 103 in 2022. Fixed-broadband subscriptions are typically shared by multiple members of a household, whereas an entry level data-only mobile-broadband subscription generally gives access to only one person, and an assessment of the affordability of the two baskets may therefore differ. Nevertheless, when applying the same two per cent threshold for the more costly fixed-broadband basket, 71 economies met the target in 2023, the same total as in 2022 (Figure 1). In 2023, only 4

3 UN (2023). Governing AI for Humanity. ai_advisory_body_interim_report.pdf (un.org).

4 UNDESA. (2022). E-Government Survey 2022. Available at: https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2022.

Figure 1

Digital connectivity

Achieving universal and meaningful digital connectivity in the decade of action

Aspirational targets for 2030

Achieving universal and meaningful digital connectivity — the possibility for everyone to enjoy a safe, satisfying, enriching, productive and affordable online experience — is key for enabling digital transformation and meeting the Sustainable Development Goals.

As part of the implementation of the UN Secretary-General's Roadmap for Digital Cooperation, the International Telecommunication Union and the Office of the UN Secretary-General's Envoy on Technology have established a set of aspirational targets for 2030 to help prioritize interventions, monitor progress, evaluate policy effectiveness, and galvanize efforts around achieving universal and meaningful connectivity by the end of the decade.

More information:
www.itu.int/umc2030

	Universality targets
100 %	of population aged 15+ uses the Internet
	of households have Internet access
	of businesses use the Internet
	of schools are connected to the Internet
	of population is covered by a mobile network of the latest technology[1]
	of population aged 15+ owns a mobile phone
>70 %	of population aged 15+ has basic digital skills
>50 %	of population aged 15+ has intermediate digital skills
Gender parity	is achieved for Internet use, mobile phone ownership and use, and digital skills[2]
	Technology targets
100 %	of fixed-broadband subscriptions are 10 Mb/s or faster[3]
20 Mb/s	Minimum download speed at every school
50 kb/s	Minimum download speed available per student[4]
200 GB	Minimum data allowance for every school
	Affordability targets
2 %	Entry-level broadband subscription costs less than 2% of gross national income per capita
	Entry-level broadband subscription costs less than 2% of average income of the bottom 40% of population

Notes

[1] *Mobile network of the latest technology* is the most advanced available in the country with at least 40% of the population already covered.

[2] Parity is deemed reached when the share of women using the Internet/owning a mobile phone/using a mobile phone/with specific digital skills, among the female population is equal to the share of men.

[3] Download speed. Mb/s = megabits per second.

[4] kb/s = kilobits per second.

Source: www.itu.int/umc2030.

United Nations
Office of the Secretary-General's Envoy on Technology

out of the 46 least developed countries (LDCs) met the 2 per cent target: Angola, Bangladesh, Bhutan, and Lao P.D.R.[5] In addition, there are challenges linked with the quality and resilience of the underlying network. Universal and meaningful connectivity is critical to drive digital transformation.

BOX 2.2

Mongolia's journey to inclusive digital transformation in government services

Mongolia, a landlocked developing county with population of 3.5 million and 1,564,116 km2 of land area, is the second least densely populated country in the world after Greenland. Having an extremely low population density and being sparsely populated with nomadic culture, Mongolia faces specific challenges in digital transformation, including limited connectivity in remote areas, unavailability of digital services and citizen's lack of digital literacy. The Government of Mongolia has proactively deployed digital technologies to overcome such digitalization challenges. To address connectivity issues in remote areas, the Government cooperates with Starlink for satellite Internet services.

To eliminate a need for citizens to physically visit government offices, the Government started eMongolia[6], an online platform for processing government administrative services for citizens. The platform is continuously upgraded, offering over 1,400 services from 81 different government organizations to approximately 1.6 million users as of 2024. The Government launched version 4.0 in 2024, deploying artificial intelligence to better analyze citizen's usage behavior for service improvement by the operator. The government plans to further incorporate artificial intelligence functions into the user interface of eMongolia to make it more user friendly.

While eMongolia was established to improve accessibility of government services to citizens through digitalization, it has still faced usage challenges resulting from digital gaps, especially for citizens in remote areas due to limited last-mile Internet connectivity and accessibility as well as lack of digital literacy. In this connection, the Government also established the Regulatory Agency of Government Digital Services[7], whose role is to improve accessibility and availability of government digital services, including setting service centers in remote areas and providing digital skills training to local communities. The Government's journey to digital transformation is on-going in close cooperation with and support from United Nations agencies and development partners.

Therefore, some of the most important aspects of digitalization is related to the enhancement of infrastructure, while paving the way for ensuring additional investment for sustainable development. In fact, a level playing field for a competitive private sector involvement will be critical. In some developing countries, existence of monopolies and restrictive regulatory environment is one of the key factors that inhibits accessibility, while raising the exorbitant prices to connect everyone. It leads to low penetration rates. This situation even becomes challenging by the prohibitive cost of devices in developing countries.

By enabling digital technologies, countries are well-positioned to advance local socio-economic growth, including through the potential ability to leapfrog technological infrastructure, to improve the readiness of youth to adapt to new forms of digital work and entrepreneurship, especially women and girls, and to promote digital literacy. On the flip side, new and emerging technologies reinforce the risks of increased discrimination, while adversely impacting vulnerable groups. In particular, with the growing reliance in digital transformation across developing countries, there is a significant potential for adverse labour market implications and related service sectors. Hence, policymakers need to be more cautious to weigh the socio-economic opportunities against the unintended consequences of digital technologies.[8]

BOX 2.3

Harnessing digitalization to drive green and circular transitions in Europe and Central Asia

The EU has one of the most comprehensive approaches, with a matrix of interconnected strategies that were launched over the period 2019-2021 building on previous reform achievements. The strategies, adopted by EU acceding countries, aim to integrate digital technologies into environmental sustainability, address the ethical concerns surrounding AI, strengthen digital resilience, and set a vision for a human-centered, sustainable digital transformation that leaves no-one behind.[9]

Central Asian countries have also been pursuing ambitious strategies to promote sustainable digital transformation. Examples include *Digital Kazakhstan State Program*[10]; *Digital Uzbekistan 2030*[11]; and Tajikistan's *Concept of the Digital Economy* to transform the economy into a digital, service-based one.[12] Several countries have also integrated digitalization into broader development strategies for transformative change (e.g., Tajikistan's *Strategy for the Development of the Green Economy for 2023-2037* Green Economy[13] and Azerbaijan's *Green Economy and Green Growth Plan*[14]).

5 ITU (2023). https://www.itu.int/en/ITU-D/Statistics/Documents/publications/prices2023/ICTPriceBrief2023.pdf.

6 E Mongolia https://e-mongolia.mn/home.

7 https://khurdan.gov.mn/eng/.

8 ILO (2023). Digitalization and Employment, A Review | International Labour Organization (ilo.org).

9 See the European Green Deal (2019), which integrated digital technologies into environmental sustainability efforts; the EU Data Strategy (2020), focusing on a unified data space; the Cybersecurity Strategy (2020) for strengthening digital resilience; the Shaping Europe's Digital Future Strategy (2020) that set a vision for a human-centered digital transformation; the Digital Compass 2030 and Europe's Digital Decade frameworks (2021), outlining ambitious targets for skills, infrastructure, and digitalization by 2030; and the Digital Education Action Plan (2021-2027) to address skills mismatch. These strategies are available at: https://eur-lex.europa.eu/.

10 https://egov.kz/cms/en/digital-kazakhstan.

11 https://lex.uz/docs/5031048.

12 http://www.portali-huquqi.tj/.

13 http://www.portali-huquqi.tj/.

14 https://www.economy.gov.az/en/page/yasil-iqtisadiyyat.

The emphasis on twining digital transformation with green and circular transitions is a salient feature of national development strategies across the UNECE region, with member States focusing on *Digital and Green Transformations* as a cross-cutting priority during the 70th session of the UNECE Commission. In terms of measures, governments and experts from across the region are working closely with the UNECE to develop agile regulations for harmonizing efforts to bridge legislative and capacity gaps in, among other things, the following areas:[15]

- *Sustainable trade*: developing digital standards and best practices for promoting traceability and transparency throughout global supply chains as a key requisite for addressing green washing[16] as well as using digital standards for harmonizing cross-border trade and bolstering connectivity.[17]
- *Sustainable transport*: promoting new technologies and innovations in inland transport, including in the areas of Intelligent Transport Systems and autonomous vehicles, in a manner that accelerates progress towards sustainable low carbon mobility.[18]
- *Sustainable energy*: harnessing digitalization for energy efficiency and broader energy system transformation and decarbonization.[19]
- *Innovative finance*: Mobilizing resources to finance the required infrastructure for the triple transition, with a special emphasis on sustainable public-private partnerships (PPPs).[20]
- *Data for evidence-based policies and legislation*: Harnessing digital innovations for measuring and monitoring the impacts of, among others, climate change; forests and forest management; inland transport systems; and circular economy transition.[21]

At the same time, digital transformation is raising environmental concerns. Progress in digitalisation will not only lead to increased water usage, e.g., for cooling data centres or chip manufacturing, but will also deplete critical raw materials and exacerbate waste generation. Furthermore, environmental and climate change is expected to negatively impact the lifespan of critical digital infrastructures. For instance, in the European Union (EU), the cost of damages from extreme weather events could increase by 60 per cent over the next 30 years.[22]

Additionally, there are growing concerns regarding privacy, cyber security, data usage, misinformation, job losses and environmental conservation. These have prompted many countries to upscale their approaches to digital transformation. The emphasis is on further coordinating efforts across various sectors and levels of governance to ensure that digital technologies are accessible, inclusive, used ethically, and are geared towards keeping production and consumption within planetary boundaries while enhancing connectivity and providing the necessary flexibility to build resilience in the face of adverse conditions.

The emergence of Artificial Intelligence (AI) introduces new developmental challenges in the digital realm on a global scale. Like other technologies such as blockchain, IoT, 5G, and cloud computing, the AI lifecycle also involves the expanded use of raw materials to build the infrastructure and data systems. There are critical aspects of the innovation and technologies which are linked to design, development, roll out and review of AI technologies in societies, and their subsequent impact.[23]

BOX 2.4

AI in Africa: challenges and opportunities for a better governance

Artificial Intelligence (AI) is a principal policy concern globally as the distribution of the wealth and power afforded by AI technologies could be widely unequal. In the last decades, Africa has played a central role in developing AI systems that require the use and availability of natural resources, labour and skills from across the region. Despite this, the benefits of new technologies have not been realized in the African region and are, instead, largely accrued by the Big Tech companies outside the continent.

Nonetheless, Africa is still well-positioned to take advantage of AI technologies to make transformative changes for the economy, society and environment. In this vein, African countries are taking bold steps to integrate AI into development policies. For instance, this is the case of locally designed AI solutions in Kenya to assist farmers in procuring farming equipment or in making decisions about the optimal time to sow or yield certain crops. In Lagos, Nigeria, as in many other African cities, growing communities of data scientists are coming together to refine their skills in machine learning and advance new AI-driven technologies. In Namibia, the leading internet services and telecommunications company is rolling out an AI-driven digital ID verification system to facilitate customer access to its services.

In this evolutionary background, the structural and infrastructural preconditions of AI are still a key issue in the continent. These are essential to building local AI ecosystems that embed local value systems and respond to local problems. As African policymakers consider the best approach to AI strategies and adoptions in their countries, emphasis should lie on building sustainable local AI ecosystems that contribute AI solutions to advancing national developmental priorities and supporting inclusive and prosperous African societies.

15 https://unece.org/sites/default/files/2023-03/E_ECE_1505_ENG.pdf.

16 https://thesustainabilitypledge.org/.

17 See SPECA Trans-Caspian multimodal digitalization Roadmap (https://unece.org/speca/speca-digitalization-roadmap) supported jointly with ESCAP ; and UNECE-UN/CEFACT (the United Nations Centre for Trade Facilitation and Electronic Business) UNECE instruments in support of WTO ATF (Agreement on Trade Facilitation) implementation at: https://unece.org/trade/uncefact.

18 https://unece.org/sites/default/files/2024-02/ECE-TRANS-2024-3e.pdf.

19 https://unece.org/sustainable-energy/energy-efficiency/digitalization-energy.

20 https://unece.org/ppp/em.

21 https://unece.org/statistics/climate-change; https://forest-data.unece.org/; https://sitcin.org/; https://unece.org/statistics/publications/guidelines-measuring-circular-economy-part-conceptual-framework-indicators.

22 EU (2023). Economic losses from weather- and climate-related extremes in Europe | European Environment Agency's home page (europa.eu).

23 Daron Acemoglu and Simon Johnson (2024). POWER and PROGRESS - Massachusetts Institute of Technology (mit.edu)

Further, machine-learning- based systems as well as broader data-driven systems and technologies, such as those used in digital ID and biometric programs, are all bringing a new set of opportunities and challenges in relation to data privacy and cybersecurity for policymakers to attend to.

Evidence also shows that AI is aggravating disparities, with the pace of AI adoption varying not only between developed and developing countries but also by the size of enterprises. For instance, most OECD countries have displayed a significant increase in the uptake of AI by businesses, although the median value of the share of business with more than 10 employees using AI was only around 8 per cent in 2021.[24]

AI is, thus, a principal policy concern globally as the distribution of the wealth and power afforded by AI technologies could be widely unequal. The structural and infrastructural preconditions of AI are still a key issue across regions and nations. These are essential to building local AI ecosystems that embed local value systems and respond to local problems. A fresh approach requires considering the implications of AI beyond the mere economic dimensions. It necessitates critically assessing the extent to which global AI frameworks address particular challenges. Policymakers need to develop and adopt policy responses with the involvement of a broad set of stakeholders.

We may consider some of the strategic policy areas to ensure that AI adoption does not perpetuate socio-economic inequality and harm the environment.

1. **Infrastructure Development.** Every effort should be made by governments to focus policy efforts on building and maintaining safe, secure, green and inclusive infrastructure at the local, national and regional levels, with special emphasis on ensuring interoperability (to support the development of AI).
2. **Capacity and Skills Development.** The development of AI and related data and technology skills amongst policymakers and workforces? is a key pre-condition for developing and supporting the responsible use and development of digital technologies, including AI.
3. **Community Participation for Localization.** Considering the enormous society-wide implications of some AI applications, every effort should be made to involve local communities in decisions around the design and deployment of AI systems that may affect them.
4. **Universal Value Systems and Principles in AI Ethics.** Taking account for the diverse social and cultural milieu of the regions and nations, ethical standards for AI should emphasize digital literacy and education, access to basic digital infrastructure, protection of minority ethnic communities and promotion of diverse forms of knowledge in developing AI solutions.
5. **National Monitoring and Evaluation Frameworks with KPIs to monitor progress.** These frameworks are essential for informing policymaking, identifying areas for improvement, emerging risks and trade-offs as well as enabling synergies between local and national level efforts.
6. **Regional Co-Operation.** It is important to foster common regulatory frameworks and pooling efforts through joint initiatives to address socio, economic and environmental challenges including in relation to multinational and foreign tech companies operating in developing countries.
7. **International Development Assistance.** It is still an important resource to support the adoption of responsible AI solutions on building inclusive digital infrastructure and developing long-term local capacity in AI governance.

BOX 2.5

Digital transformation in the Pacific SIDS

In the Pacific, digital transformation is high on the agenda of the government. The Lagatoi Ministerial Declaration 2023 emphasized "the critical role, importance and opportunities presented by the use of ICTs and digital transformation to the Pacific Islands Countries and Territories as a primary enabler of socio-economic development, inclusive governance and sustainable livelihood in a fast changing world" . It recognized six priority areas. The Pacific has witnessed a significant increase in connectivity at international (submarine cables and satellites) and national level. There is also ongoing work in developing Digital transformation policies and strategies that fosters whole-of- Government approach. In addition, there is a growing concern on the need for appropriate frameworks on data protection, data privacy, cybercrime, cybersecurity Consumer protection, and online safety.

The Smart Villages and Smart Islands (SVSI) initiative is transforming rural and coastal communities, improving their livelihoods and their well-being by connecting them to a range of digitally-enabled services. This innovative approach targets digital transformations at the community level aligning with the six transitions identified by the UN to accelerate progress towards the Sustainable Development Goals 2030 (SDG 2030) and the outcomes of the 4th International Conference on SIDS (Antigua and Barbuda, 2024), thereby addressing the connectivity and digital service gaps in unconnected and underserved communities.[25]

SVSI addresses the socio-economic challenges of communities by manifesting digital transformation at the community level, with a whole-of-government approach, user-centricity, emerging technologies, leaving no one behind, and cross-sector collaboration as the cornerstone. The programme is ongoing in nine Pacific Islands countries. As an example, the pilot programmes such as in Vanuatu has provided great insights into how these services are transforming lives by providing access to a range of digital services across finance, education, agriculture and e-commerce.[26]

There are also ongoing projects and programmes to address ICT for disaster management (EW4ALL, National Emergency Telecommunication Plans, connectivity support in times of disaster etc.), cybersecurity and digital inclusion (such as Pacific Girls in ICT Day programme).

24 https://www.oecd-ilibrary.org/industry-and-services/the-digital-transformation-of-smes_01a4ae9d-en.
25 UNDESA (2024). n2409990.pdf (un.org).
26 UNESCAP (2024). Policy Brief SIDS4 24May_0.pdf (unescap.org).

EU's AI Act (Regulation (EU) 2024/1689 is an important legislation that aims to regulate artificial intelligence depending on the level of risk it poses.[27]

3. POTENTIAL DRIVERS OF CHANGE

There are many drivers that can influence further the digital advancement. These have been classified according to UN's strategic STEEP (Social, Technological, Economic, Environmental, and Political) planning framework.

Social

- Digital governments: Governments across the globe are moving towards digital services. However, access to digital government services remains an issue for many segments of the population.
- Disparities in digital access: While more people are gaining access to digital technologies, gaps remain, especially in rural areas and amongst the oldest generation and small enterprises.
- Remote work and digital nomadism: Work patterns are changing, with more employees working remotely, as digital nomads, with in many cases, limited social protection.
- Privacy and cybersecurity concerns: The rise of digital identities is raising concerns about privacy and the use of personal data. Further, the increased use of social media is creating concerns about misinformation, while the rise of AI-generated content is making it harder to distinguish between real and fake information.
- Gender inequality: Women are still underrepresented in the digital economy, both in terms of share in senior executive management with gender pay gap emerging as a major concern, highlighting the need for more inclusive policies.
- Demographic pressures: Aging population is becoming a major concern for many countries, combined with the rise of climate migrants and conflict-induced refugees, creating pressures on local (city) infrastructure, raising concerns about equal access to social services and participation in the digital economy.

Technological

- Smart digital networks: The development of 5G, and future 6G networks, rise of low earth orbit satellites is fostering broadband connectivity. Whole-of-government approach to develop digital infrastructure based on reusable and interoperable digital building blocks (e.g. Identity, payment, workflow) is an emerging trend (reference GovStack[28] for more details). However, developing countries are facing the risk of being left behind owing to the lack of resources, appropriate enabling environment, including financial and technical knowledge.
- AI and quantum computing breakthroughs: While advances in these fields are driving significant changes across industries, it is raising concerns about job displacements and job losses, especially in jobs involving repetitive work.
- New monitoring and evaluation systems: Systems are being developed to measure the impact of digital technologies on various sectors. However, there is a risk that these might leave many impacts unaddressed, given the focus on one size fits all indicators.

Economic

- Digital transformation: Advances in digital technologies is fueling innovation and driving green and circular economies transitions. However, many countries risk being left behind given the skills mismatch in labour markets and the enterprises' limited access to finance.
- Digital trade disparities: There's a growing gap in digital trade capabilities between developed and developing countries.
- Concentration of data-driven economy: A few large companies dominate the data-driven economy, raising concerns about competition and innovation.
- E-commerce growth: Online shopping continues to expand, reshaping retail and logistics industries.

Environmental

- New generation of climate change mitigation and adaptation mechanisms: Digital technologies are being used to address climate change, through spatial technologies (e.g., precision farming) and smart technologies (e.g., retrofitting and carbon capture) for increasing infrastructure resilience in the face of climate change.
- Carbon footprint and pollution: The digital economy's growth is increasing its environmental impact, from energy consumption to e-waste.

Political

- Inconsistencies in global data governance: The rise in regulations and policies to address privacy and cyber security concerns is raising issues about ensuring equal footing (e.g., small enterprises and farmers struggle to comply with cross border e-commerce) with harmful consequences for social inclusion. Further, many of these are negotiated in the context of regional cooperation arrangements, developing countries may be left behind as they lack the ability to influence these laws.

27 EU (2024). Regulation - EU - 2024/1689 - EN - EUR-Lex (europa.eu).
28 https://www.govstack.global/.

- Digital infrastructure disparities: Governments are increasingly investing in digital infrastructure to support economic growth and public services, but disparities within and between countries and regions persist.
- Regulatory and policy lags: Laws and policies often struggle to keep up with rapid technological advancements, increasing inequality with transactional corporations driving the change.

There are some other drivers which are also being considered in the literature.

Innovation and Legislative Models

- Adoption of innovation: Advancements in science, technology and innovation are leading to large-scale digital transformation; digital Resilience and capacity building, skill building/reskilling and efficient business models are important for creating inclusive digital infrastructure for affordability, accessibility and empowerment. [29]
- Adoption of regulatory processes: Speed of policies and regulations often lag behind the rapid pace of digital innovation, creating a reactive governance landscape; push for data protection and privacy laws; and new cross-border trade, e-commerce and investment legislation.

Signals of change

In developing countries, there are several ways to identify the inadequate nature of digitalization processes, which are around early warnings of emerging opportunities, challenges, and/or transformations:

- human capacity in low resource and lack of synergies across sectors,
- lack of integrated approach at national level,
- untapped potential of technology diffusion in growth enriching and jobs creating sectors,
- varied rates of adoption of digital technologies among enterprises,
- uneven progress towards e-government,
- Lack of capacity in low resourced countries in harnessing emerging technologies in a safe and secure manner, and
- unknown shifts towards remote working and digital nomadism.

In order to accelerate social inclusion through digital transformation, governments will require three substantive changes:

Accelerating affordable broadband for all by closing the access gap through sector reforms and catalytic investments in connecting rural/remote areas, schools, clinics, and community centres, and addressing the usage and inclusion gaps to include affordability, accessibility, devices, gender and inclusion, and digital literacy.

Scaling up inclusive, resilient and safe digital infrastructure through investments in digital ID, payment systems, and data sharing; strengthening trust and resilience through improved cloud services, data protection, and cybersecurity; and facilitating high-impact digital services (e.g., financial services, tax declaration, agriculture, e-health, education, commerce)and building in-demand job skills for digitally enabled industries and developing local information technology industry, content, and support services.

Enhancing access to digital services leaving no one behind through adopting whole-of-government approach at community level. Smart Villages and Smart Islands programmes is an example of leveraging digital transformation at community level.

Improving policy and regulatory effort to empower individuals using digital platforms and foster market openness; to improve digital taxation; enhance data protection and privacy; facilitate digital public infrastructure; and steer the emergence of digital taxation frameworks.

Of course, all these aspects need to be focussed around existing socio-economic and technological sophistication of countries and groups such as the least developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing states (SIDS).

4. POTENTIAL LINKAGES TO OTHER FORESIGHT THEMES

By fostering social inclusion through digital transformation, experts can unlock a future where everyone has the equipments and resources to address environmental and climate challenges, participate in the green economy, and benefit from good governance and financial services. A digital transformation focused on social inclusion can create positive ripple effects across various foresight themes:

Climate

Digital Solutions for Environmental and Climate Change are essential in leveraging digital technologies for climate monitoring, renewable energy management, and carbon footprint reduction strategies across sectors.[30]

Environmental and Climate Education and Awareness: Digital tools can be used to provide information for decision-making and disseminate real time information about environmental and climate change and promote sustainable behaviours. Other

29 https://www.itu.int/en/mediacentre/Pages/PR-2023-12-01-IMT-2030-for-6G-mobile-technologies.aspx.

30 UNESCAP (2024). Asia-Pacific Digital Transformation Report 2024: Digital Innovation for Smarter Climate Action | ESCAP (unescap.org)

areas that could benefit include Climate-Smart Agriculture to empower farmers and renewable energy programmes to facilitate energy efficient measures. For example, Jamaica's Climate Smart Agriculture Platform: This digital platform provides farmers with real-time weather data, tailored advice on sustainable practices, and access to markets. This not only improves agricultural productivity but also promotes climate-resilient farming techniques.[31] At the same time, it is also important to develop framework that is required to manage E-WASTE.

Jobs

Automation and Job Dynamics: Quality educational opportunities, digital literacy, automation and AI are drastically changing the job market, creating new opportunities while displacing traditional roles, impacting global workforce dynamics.

Green Jobs Training: Digital platforms can provide training programs for green jobs in renewable energy, energy efficiency, and sustainable agriculture. Remote Work Opportunities: Digital infrastructure opens doors to remote work opportunities, particularly in underserved areas, fostering economic inclusion.

Governance

Global Data Governance: the evolving framework for international data governance is reshaping digital diplomacy, as nations negotiate data privacy, security, and cross-border data flows.

Digital government services: Digital platforms can improve access to government services, enhancing transparency, efficiency and accountability. (e.g., online applications for permits or social benefits). This online platform streamlines business registration processes, improves transparency, and reduces administrative burdens for entrepreneurs, particularly micro, small, and medium enterprises (MSMEs), unlocking the potential of local economies.

Citizen Participation: Online platforms can encourage citizen participation in decision-making processes, strengthening governance. For example, Dominica's Skills for the Future Program: This initiative uses online training modules to equip young people with digital skills needed for remote work opportunities in the global marketplace, fostering economic inclusion in a post-disaster context. [32]

Furthermore, there are other policy dimensions that may have positive effects for improving social inclusion such as health and financing options.

Health

ICT infrastructure can establish a viable telehealth system for health facilities country-wide and bridge the rural-urban divide in the provision of health services. Health care can use e-health applications, digital medical devices, laptops and tablets.

Finance

Digital technologies, especially fintech and digital payments, are revolutionising financial inclusion, primarily using mobile phones. New sources of finance, including digital crowdfunding platforms, have transformed the financial sector. In addition, banking and payments have become cheaper, faster, and more efficient through online banking and mobile applications, promising a brighter future for finance.

So, digital tools are facilitating access to financial services, including microloans and digital payments, empowering individuals and communities. For example, in Barbados, an initiative has been launched to promote the use of digital wallets and mobile money platforms, expanding financial inclusion for unbanked and underbanked populations in rural areas, facilitating access to financial services.[33]

Several policy options around the regions have been instrumental in enhancing enabling environments to help catalyze new innovative financing solutions, regulatory capability, and improve the overall cybersecurity and resilience of the infrastructure for greater digitalization of the economy.

5. APPROACH AND FORESIGHT TOOLS

In futures thinking and foresight analyses, experts tend to adhere to a common framework but the tools available at each stage can vary.

1. **Understanding Signals of Changes.** Collect evidence of possible futures, today. A signal is a recent small or local innovation—a new product, service, behaviour, initiative, policy, data point, or technology—with the potential to scale in impact and affect other places, people, or markets. Signals are specific events or innovations happening today that you instinctively feel will take us in a new direction.
2. **Framing futures conversations.** With the current context, and drivers of changes, the objective is to go a step beyond by framing the right questions of our future project. This entails definitions & assumptions, drivers of change, signals and expert perspectives, stakeholder interests.
3. **Envision alternatives futures with scenario.** Foresight work begins with the objective to establish a process to turn facts about the present into plausible, provocative, and logical views of the future. Four archetypes— growth, collapse, constraint, and transformation—help envision futures that are neither variations of a single future, nor simple mirrors of the present.

31 https://www.imf.org/en/News/Articles/2023/10/11/pr23346-jamaica-working-international-financial-institutions-following-rsf-arr-imf
32 https://unfccc.int/sites/default/files/2022-07/The%20Commonwealth%20of%20Dominica%20updated%20NDC%20July%204%20%2C.pdf.
33 https://www.centralbank.org.bb/.

For policy brief, we have developed the three scenarios.

- **Growth and transformation:** An extrapolation of trends continues with minimal disruption, while preparing opportunities for a new paradigm.
- **Business-as-usual:** A core guiding value or purpose organizes society and governs behaviour, while preparing for uneven progress around regions.
- **Collapse:** A rapid, catastrophic systems and infrastructure break down, while accepting instability and climate fragility.

At each stage of the analysis, there exists a range of options for gathering inputs for foresight analysis; undertaking foresight analysis; and presenting and disseminating foresight analysis.

The group worked to better understand trends and drivers of change as well as to develop projects of alternative future development and analysing the relative impacts of scenarios.

The time horizon set of this foresight exercise is to 2040, which is a medium term to ensure that at least some of the early signals and drivers of change, which we see today influencing the future pathways for social inclusion, will be relevant to the set of social inclusion outcomes that we may see in 2040.

Futures Scenario Narratives

This section outlines potential future scenarios for digital transformation for social inclusion.

Growth and transformation scenario

In this scenario, digital transformations can foster social inclusion. Well-designed policies, regulatory frameworks and sustained investments in digital technologies support social development opportunities. The growth scenario can result from three main factors:

I. Equitable access to digital technologies

In this ideal future, effective digitalization strategies foster social inclusion. By strengthening policies to support digital innovation, societies become more inclusive, creating opportunities to improve social services and jobs, and overcome the tyranny of distance.

Strategies to promote digitalization enhances economic prosperity, while improving outcomes around social development, women's economic empowerment, and health care services. Accessibility to digital services generates educational opportunities, with digital technologies improving the quality of educational outcomes for students, connecting geographically isolated places and vulnerable groups. Social protection services increase with the increasing accessibility to digital services through improvements in infrastructure development. The broadband networks and ubiquitous connectivity together with other emerging technologies can improve economic output and minimize disparities across the national and subnational levels.

Similarly, efforts are made to reduce cost of digital services including internet connectivity. In developing countries, with the adequate investment of governments in close coordination with the private sectors, consumers enjoy lower costs of internet service plans as well as enhanced quality of services.

II. Increase in social development opportunities

Social inclusion increases across the continents, other vulnerable groups, and across LDCs, LLDCs and SIDS. There are clear opportunities around digital innovation, especially for AI, to enable special group of countries to improve their social development, tourism and social services. Low skilled workers can benefit from reskilling. Through digitalization, labour market policies can continue to play a catalyst role to improve job opportunities. With the digital marketplace and e-commerce platforms are key factors to support MSMEs and strengthened productivity growth during the time of work-from-home modality.

Digital applications are also improving access to online academic resources and learning materials. Especially since the pandemic, e-learning platforms and virtual classrooms from leading universities have paved the way to access to better-quality education.

Similarly, health care services and infrastructures are seeing significant improvements due to telemedicine and access to health screening and procedural services. The growing proportion of health and well-being applications and technologies have increased preventive care and monitoring services with limited costs to consumers. It can also provide new insights into diseases and contribute towards SDG Goal 3.

III. Building resilience to climate change

By leveraging digital technologies, there are opportunities for enhancing resilience across communities, especially in the disaster-prone areas. Digital technologies enhance early warning systems through real-time collection and analysis. By introducing AI-tools, the predictive powers of these climate-models have become an incredible source in saving lives and increasing livelihoods.

These new and emerging technologies are also supporting to optimize efficient use of resources, especially in areas such as water and energy sources.

IV. Strengthen social solidarity, regional and global cooperation towards multilateral digital solutions

By strengthening social solidarity, regional global cooperation can expand digital connectivity, while local initiatives scale up access to new and emerging tools to everyone. In particular, new financing modalities are key to step up access to digital applications. By enhancing peer-to-peer learning opportunities, improvements in social development outcomes can be accelerate innovative solutions. This solutions mindset also transforms financing modalities to address climate change consequences.

Business-as-usual scenario

In this case, the net impact of digital transformation on social inclusion is neither positive nor negative. Despite the positive contribution of digital technologies to social inclusion, the increasing digital divide offsets the benefits of digital transformation for social inclusion, so the result is broadly neutral. Whether digital transformations help or hinder social inclusion has been a subject of research. But the extent to which digital transformation contributes to social inclusion will clearly depend on a country's technological capacity, industrial structure, financing and deliberate policy and regulatory measures.

I. Uneven access to digital technologies

There has been uneven progress in the broadband networks and mobile connectivity across the national and subnational levels. 90% of the world population is covered by at least LTE/WiMax. The investment in 5G network has been slower than expected, while financing strategies has not scaled up the required demand.

II. Limited improvement in social development opportunities

The existence of digital marketplace and e-commerce platforms have not reached everyone, everywhere. The strategies have also not been able to adequately support MSMEs to advance their economic opportunities, while vulnerable groups receive limited access to digital services, while opportunities to engage in these economies have been constrained due to digital divide.

Access to educational services and health care has been inadequate and distributed unevenly across communities and regions. Disadvantageous groups have not been able to reap the benefits of digital tools and other applications due to rising costs, limited capacity, inadequate enabling environment, and other barriers.

III. Slow progress in building resilience to climate change

Digital technologies have failed to build resilient environment, and areas which are prone to natural disasters. The early warning systems and other digital tools to predict climate change patterns are not being fully optimized. The lack of investments and necessary upgradation of early warning systems have failed to gather real-time data for analysis.

Regions and communities have not been able to fully adapt to technologies due to inefficient usage and leakages. These new and emerging technologies are in place, but they lack the necessary expertise for better utilization and effective management.

IV. Uneven progress towards social solidarity, regional and global cooperation

Even with the strengthening of social solidarity, regional and global cooperation efforts, there is lack of progress in digital transformation, especially with regional disparities. The advancement of new financing modalities has not been able to bring new opportunities to impact digital solutions to social inclusion. Regional and local solutions have been fragmented, while digital applications' utilizations has been suboptimal to bring about changes to educational outcomes, health care services and climate resilience due to lack of coordinated global, regional and subregional cooperation.

Collapse scenario

In this scenario, as countries move toward digital economies, gains from digital transformation does not yield the expected social inclusion benefits. The digital economy confronts the dual challenge of meeting the increasing demand for change and the mounting social division and unrest. The collapse/negative scenario can result from four main factors:

I. A fragmented digital technologies landscape

The digital technology landscape, encompassing innovation, market dynamics and regulatory frameworks, is highly fragmented, with limited exchanges between scientists, policy makers and regulators. This fragmentation has significantly slowed global AI innovation rates, with markets constricted due to, among others, protectionists measures; localized technological standards; inflated trade costs under the weight of complex regulatory and procedural trade barriers, increased costs of compliance discouraging market expansion; and localized preferences given the high costs of internationally sourced supplies.

Under such conditions, data storage is fragmented into isolated systems, hindering collaboration and cloud computing that was once easily possible through the global world wide web. These systems consist of an array of distinct AI platforms tailored to specific national and regional needs, further reducing global integration and the potential to train and deploy AI models effectively. Additionally, AI-driven businesses are now subject to very stringent regulations, creating additional investment disincentives. Investments in AI technologies to tackle global challenges, such as climate change, have taken a back seat, especially in least developed countries, with innovation efforts increasingly focused on technologies that address national and regional concerns.

II. Social inclusion is the exception

Digital fragmentation makes it difficult to ensure social benefits, increasing social inequality and inclusivity within and between countries.

- **Limited access to job opportunities:** With economic prosperity undermined by governments favoring national interests and regional cooperation, countries, especially developing and least developed countries, are struggling with rapid unemployment rates. Economies fall short of creating enough jobs for the growing labour force and digital technology induced job opportunities abroad are inaccessible due to skills mismatch.

Further, markets are characterized by cutthroat competition, with business focusing on survival or thriving, so that AI induced job losses are more prevalent.

- **Social protection is a thing of the past:** In many countries, economic stagnation/regression reduces the governments' tax base, making it difficult to invest in social protection mechanism for everyone. Labor unions are weakened with their influence undermined by the conditions of cutthroat competition.
- **Limited access to social services:** Stunted growth rates and rising poverty mean that more individuals have limited access to health and education. Further, governments lack the resources to invest in public services and highly localized AI research priorities mean that the quality and range of health services are compromised. For instance, AI-driven medical innovation in wealthier regions often neglects diseases prevalent in poorer areas, leading to an increased risk of pandemics originating in these under-resourced regions that lack the capacity to develop AI-driven treatments. Similarly, AI-driven innovation in the field of education is limited to local concerns, limiting the opportunities for upskilling and access to global job markets.

III. Increased vulnerability to climate change

The fragmented policy and regulatory space mean inconsistent treatment of climate change challenges, including the impact of AI and other digital technologies on the use of critical raw material and waste generation. Regions may exploit their raw materials more aggressively to gain an advantage, leading to increased deforestation, mining, and fossil fuel extraction, all of which contribute to higher greenhouse gas emissions. Further, countries and regions are less willing to share resources, technology, and knowledge that are crucial for combating climate change on a global scale. All this exacerbates climate change impacts, leading to increases in climate migration, displacement and refugees, loss of agriculture productivity and food security as countries fail to pool efforts for climate mitigation and climate adaptation.

IV. Lack of social solidarity and global cooperation

Societies become increasingly self-centered, retreating inward. Individuals experience a lack of solidarity, with the primary focus on basic human needs such as housing and food. Social equality and the protection of minorities are deprioritized given the tight budget purse. In addition, enterprises no longer assume social responsibility, climate migrants and refugees not welcomed, and humanitarian support for struggling countries is reduced. Consequently, the number of countries striving to survive rises.

6. POLICY OPTIONS & UN SUPPORT

This section will draw some implications and options for policy responses by key stakeholders.

Policy options

Government: Integrate digital technologies for social inclusion across ministries and local authorities to ensure proper integration into national policy and planning processes, while strengthening stakeholders' engagement. Towards this end, it is recommended to contextualise digital solutions to improving needs to take into account the specific national and local needs.[34] Governments need to also accord priority to reskilling and upskilling. Improvement in promoting innovative technologies and solutions to increase the benefits of digitalization and reduce risks and uncertainties of new and emerging technologies. Governments need to continuously adapt to changes in policy landscape, including by improving governance structure to ensure data protection, online safety, human rights and the rule of law. Availability of open-access data and innovation in climate forecasting tools, as well as systems interoperability have been essential elements to facilitate the development of expertise across governments and business sectors to advance the Sustainable Development Goals.

People: Integrate policies to raise public awareness and support for the effective use of digital applications and to adopt digital transformation. For the vulnerable population groups, there is an urgency to develop targeted programs to support access and use to new and emerging technologies.

Business: Promote investments in low-carbon markets, green and climate technologies, and renewable energy infrastructures. By enhancing business sustainability as well as viability of their investments, lower carbon production and consumption processes are within reach. By further leveraging digital technologies, businesses can optimize productivity and improve efficiency that can essentially enable space for investments around climate and digitalisations. The promotion of sustainability across business strategies and actions, including integrating environmental, social and governance metrics, have been clear indicators to commit to net-zero in business operations with clear and credible timelines.[35] Businesses are responsible for reducing adverse environmental and social impacts, and the development of accessible digital solutions to advance social inclusion.

Planet: Governments, businesses and communities must work together through public-private partnerships. The public-private partnerships dialogue holds the key to bringing together experts, researchers, policymakers, and businesses to enhance their network and build knowledge base to share the latest development and technological solutions. [36]

34 Astana Ministerial Declaration on Digital Inclusion and Transformation in Asia and the Pacific. Astana Ministerial Declaration on Digital Inclusion and Transformation in Asia and the Pacific (unescap.org).

35 Asia-Pacific Green Deal for Business | ESCAP (unescap.org).

36 UNEP (2024). A global foresight report on planetary health and human wellbeing | UNEP - UN Environment Programme.

Financing infrastructure and network: Invest in climate resilient digital infrastructure and networking systems, focusing on efficient resource utilisation, transitioning to renewable energy, connectivity systems. Utilize the co-deployment of fibre-optic cables along linear infrastructures such as power grids, highways, and railways. This integrated approach is not only cost-effective but also crucial for the transport, energy and digital systems that support smart infrastructure.

Additionally, promoting open-source digital applications and opportunities for sharing solutions can foster accumulation of knowledge-based digital economy. This can further act as a catalyst to enhance the contribution of digital solutions to climate mitigation and adaptation efforts across governments and businesses.

Global, regional, subregional and national digital transformation strategies and policies should be complemented by adequate financing to improve digital skills and foster cooperation to adopt sustainable technology. By opening opportunities for investment in digital infrastructure and applications, socio-economic transformation is possible.

Opportunities for UN engagement

Engagement with member States and multi-stakeholders are essential at policy development and implementation stages through knowledge generation, technical assistance, and strategic thinking initiatives. The five UN Regional Commissions along with the UN development system assets can foster the spirit of cooperation and inspire actions through strategic foresight thinking.

Enhancing cooperation mechanisms: Social solidarity and global cooperation elements are key to building enhancing strategic thinking and common agenda on digital transformation. At the regional level, as the most inclusive intergovernmental platform, the five UN Regional Commissions, continue to work with member States to promote regional cooperation.

Bolstering peer-to-peer learning: By scaling up the opportunities for learning and adapting to new tools and applications, UN system can support all stakeholders to bring on-the-ground impact and advance digital solutions and innovations for the people and planet.

Ensuring context-specific digital transformation: UN system can bring all stakeholders to better understand the specific needs of countries and communities around digital technologies and applications. UN should scale up efforts to assist member States and collaborate with international organizations, global and regional development partners to work towards developing learning materials around strategic foresight, while articulating priorities to bring social inclusion for all.

Developing the UN foresight capacity across various sectors: UN Reform 2.0 Quintet of Change builds upon previous reforms, by promoting a forward-thinking culture within the organization, with a view to enhancing knowledge generation, and fostering partnerships for sustainable development.[37] This increased capacity in data, innovation, models, digital tools, foresight, and behavioural science are essential catalysts for enhancing futures thinking for all communities and member States. Through the UN convening power, there are incredible opportunities to foster digital solutions to advance social inclusion while implementing the 2030 Agenda for Sustainable Development. [38]

Authors

Prepared by: Sudip Ranjan Basu, UNESCAP

With contributions from: Sweta Saxena, Giuseppe Tesoriere, Wafa Aidi, Stephen Chundama, and Dobrina Stoyanova Poirier (UNECA); Tae Hyung Kim, Siope Vakataki Ofa, Oliver Paddison, Charlene Lui, Kiyoung Ko, and Preeti Soni (UNESCAP); Hana Daoudi (UNECE); Constance Vigilance (UNRCO-PNG); Sang Won Lim (UNRCO-Mongolia); Olivier Marty (ITC); Ashish Narayan and Cleveland Thomas (ITU); and Mansour Omeira (ILO).

All queries should be addressed to DESA-UNEN@un.org

37 UN (2023). UN 2.0: Reimagining our global organization for a world in flux | United Nations DCO (un-dco.org).

38 UN (2024). https://summitofthefutureun.org/pact/.