**Review of UNDP's Global and Regional Cybersecurity Capacity Building Initiatives available to Member States of the OEWG**

## 1  Introduction

The COVID-19 pandemic accelerated growth in cybercrime and misinformation, and the need to address cybersecurity issues could not be greater. The United Nations Development Programme (UNDP) has conducted a preliminary review of its cybersecurity capacity-building initiatives worldwide carried out within the last 5 years. This report aims to provide the Open-Ended Working Group (OEWG) with an overview of UNDP's efforts in this area. UNDP's commitment to enhancing cybersecurity capacity aligns with the broader goals of fostering inclusive, secure, and resilient societies as laid out in UNDP's Digital Strategy 2022-2025.

## 2  Cybersecurity Capacity Building Initiatives

UNDP's initiatives span a diverse range of activities designed to strengthen cybersecurity capacities globally. These initiatives evolved to address the growing threats surrounding cybersecurity and have been developed in collaboration with various stakeholders, including governments, civil society, and the private sector. Over the years, these initiatives have set clear objectives and established partnerships that support the UN's Sustainable Development Goals (SDGs).

Any digital program, even if not explicitly about cybersecurity, is cybersecurity-adjacent because the digital realm inherently carries cyber risks. Whether it is about building digital infrastructure, promoting digital literacy, or implementing e-governance solutions, there is always a need to ensure data protection, privacy, secure connectivity, and system integrity. Thus, any capacity-building in the digital domain indirectly supports cybersecurity by necessitating secure and resilient digital solutions.

Globally, UNDP has introduced the Digital Readiness Assessment (DRA) that aims to identify and prioritize digital interventions as part of a country's digital transformation journey. This assessment highlights the current digital context of a country – from a context where basic digital foundations may be lacking, or incomplete, through to the case of a country where digital is a central tenet of national growth and development ('stages of digital readiness').

To drive digital change, the assessment is structured around five core pillars of digital transformation: infrastructure, government, regulation, business, and people. The survey aims to provide a rapid diagnostic of a country's digital progress, in order to drive further digital transformation progress. It aims to provide high-level insights into a country's digital strengths and weaknesses. It forms the first stage in the digital transformation journey of countries, towards a digitally inclusive and cyber-secure

society. The Digital Readiness Assessment is complementary to other tools outlined in the following sub-sections and has been designed to align with – and augment – existing tools and processes used by governments.

**Training and Skill Development Programs**

Digital skills are fundamental for individuals and organizations to navigate the digital world safely. By enhancing digital literacy and competence, these programs indirectly contribute to improved cybersecurity by empowering individuals to protect themselves and their data online.

UNDP has developed comprehensive training programs to support member states. The programs cover various aspects of digital technology and ICTs, data and cybersecurity, including threat detection, incident response, and risk management. These programs are delivered through a combination of online modules and in-person workshops, ensuring accessibility for a wide range of participants. Through training programs and skill enhancement programs, UNDP has built capacity and improved the cybersecurity skills of individuals and organizations. Certification programs, in collaboration with industry partners such as Microsoft, have helped participants validate their expertise.

In the Arab States, the "Qudowa Tech Initiative" (QTI) was implemented through a collaboration between UNDP Egypt and the Information Technology Institute (ITI). QTI was launched as part of an effort to empower women, people in remote areas and persons with disabilities through ICT awareness campaigns, training programs, and capacity-building initiatives. As a result, 1,000 IT professionals were trained annually in emerging technologies such as AI, IoT, and cybersecurity. Over 1 million people received training through Mahara Tech online platform. The focus on empowering women and youth saw over 400,000 young women and men being trained and capacitated with digital literacy and freelancing skills.

In Africa, the Central African Republic and UNDP have implemented a National Assembly training program. Through this program, members of the National Assembly were trained to use various digital tools, programs and platforms to enhance their quality of work and to improve their workflow. Since inception, 140 members of the National Assembly have benefitted from the workshop-style training, and there are plans to train 360 more members of the National Assembly.

In Europe and the CIS, UNDP Bosnia & Herzegovina (BH) launched a project aimed at strengthening cybersecurity within the country. As part of the measure to bolster capacity in cybersecurity, UNDP launched a series of training programs whose objective was to increase awareness of cybersecurity threats for non-IT professionals.

In Latin America and the Caribbean, Ecuador hosted a Digital Skills Bootcamp that was rolled out as a multi-partner initiative between UNDP and CITEC, EPICO, CONQUITO, AEI, PRENDHO, and HUB UIO. The bootcamp was designed to accommodate 60

participants of which 60% were women and 80% were people aged 18-29 years old. The participants were trained intensively for 6 months in data analytics and Python and were awarded digital skills certificates. An outcome of the bootcamp was that nearly 60% of bootcamp participants were employed by local technology start-ups and SMEs.

UNDP in El Salvador introduced the Digichiquihuites project aimed to grant access to internet connectivity, mobile devices and training on digital tools to owners of micro and small businesses in the tourism sector, mostly women. Digichiquihuites incorporated three fundamental components: facilitating tools for digitalization, such as mobile phones and navigation packages; an environment that enables new policies for inclusive digitalization based on evidence and the "Connect your business" training program, from which 150 people graduated, 88% women.

## Awareness Campaigns

UNDP's awareness campaigns target diverse audiences, from government officials to citizens to small and medium-sized enterprises (SMEs). Leveraging digital and traditional communication channels, these campaigns have effectively raised awareness about cybersecurity threats and best practices.

Globally, UNDP has established the UNDP Data Principles on the UNDP Data Futures Platform. The 8 principles were established to raise awareness about safe approaches and practices in cyberspace. Principles such as managing data responsibly, safeguarding personal data, and empowering people to work with data have been crucial in creating public awareness about data management and data use for a safer and more inclusive cyberspace.

iVerify is another example of a global program that UNDP has implemented. iVerify is UNDP's automated fact-checking tool that can be used to identify false information and prevent and mitigate its spread. The iVerify support package includes digital tools, capacity-building modules, partnership opportunities, and communications and outreach strategies. It is supported by the UNDP Chief Digital Office and the UNDP Brussels-based Task Force on Electoral Assistance. In 2022, Kenya, in the run-up to recent elections, became the third country to utilize iVerify. Specifically, iVerify was employed in Kenya to identify (by both AI and human users via a tipline), report, verify, label, and disseminate various kinds of information about the electoral process, election candidates, and election statements.

In Europe and the CIS, Serbia launched The Caravan of Digital Skills, Literacy and Security to spread awareness about the potential, benefits, and dangers of the digital space in the 21st century. 16 cities were involved in hosting the initiative. This included a 'digital security quiz' that mainly targeted elementary school pupils to educate them on the safe use of the internet.

**Government systems service and Infrastructure improvement**

E-government services often involve the handling of sensitive citizen data. Strengthening the capacity of governments in this area can indirectly improve cybersecurity by promoting secure data handling and privacy protection.

In Africa, São Tome and Principe introduced the Digital São Tome and Principe initiative. This initiative included developing an interoperability platform for which the technological standards were created by UNDP, and included the creation of a national cybersecurity incident response center among others. Support was also provided in amending and adopting legislation related to digital technology in conjunction with the changes in infrastructure that were being made.

In the Asia-Pacific, UNDP has also established the Digital Training for Civil Servants course targeted towards civil servants and governments. This course offers an online introduction to support civil servants and other stakeholders in the digital ecosystem in shaping an inclusive, whole-of-government approach to digital transformation in Small Island Developing States (SIDS). The course introduces digital transformation in SIDS around five pillars of digital transformation: government, infrastructure, regulation, business, and people. The course offers the latest available data on digital transformation in SIDS, and highlights examples, challenges and opportunities and case studies of innovation across SIDS. It features analytical tools, such as the UNDP Digital Readiness Assessment and UNCDF Inclusive Digital Economy Scorecard and offers links to resources and extensive lists of additional readings from UNCDF, UNDP, ITU, World Bank, GSMA and others.

In the Europe and the CIS, Albania introduced the Consolidation of Citizen-Centric Public Service Delivery in Albania (CSDA). The CSDA Project looks to the National Broadband Plan to provide assistance in improving internet access and digital literacy as two core challenges in order for citizens to facilitate access to central government public services. Related to the latter, activities are expected to focus on identifying and piloting best practices to improve the digital literacy of key adult demographics in Albania. CSDA is a donor pool fund implemented by the Government of Albania in partnership with UNDP, and with Austrian Development Cooperation as a key contributor, together with UNDP.

UNDP Serbia launched the Training for Data Officers (TDO) learning initiative. The initiative is a hybrid training consisting of online lectures and hands-on work in Jupyter notebooks with support of the lectures/mentors. The first generation of 15 data officers will be able to contribute to data-based decision-making in government institutions. The TDO is accredited and has become an integral part of the official offer for public servants.

In the Arab States, UNDP in Kazakhstan has been assisting to strengthen the Government's capacity to deliver public services while telecommuting in these extraordinary circumstances. The initiative has three major outcomes which are (1) Socioeconomic impact analysis (SEIA) to assess the direct socio-economic impact of the crisis and its spillover effects on the most vulnerable groups of Kazakhstan population; (2) Employment generation measures for vulnerable groups with the proposed employment toolkit as a complex solution including psycho-social support, mentoring and orientation in consultation with local authorities and employment centers; and (3) Government business continuity supported to ensure effective and efficient public service delivery for the most vulnerable groups.

## Data Governance and Privacy Initiatives

UNDP's support for data governance and privacy-related policies and regulations in various countries contributes to member states' capacity for enhanced cyber security. Effective data governance and privacy regulations are crucial components of a robust cybersecurity framework. UNDP's initiatives in this area indirectly contribute to cybersecurity by helping countries establish the necessary legal and regulatory frameworks.

Globally, UNDP has partnered with GIZ's Data4 Policy to establish the Data to Policy Navigator. The Data to Policy Navigator is a resource, specifically designed for government officials with no or basic prior data science knowledge and experience. It aims to give policymakers the know-how to systematically integrate new data sources into their decision-making and policy-development processes. It offers step-by-step actionable recommendations and examples throughout the policy development process, starting with problem definition to policy design and evaluation.

In the Europe and the CIS, UNDP in Georgia responded to increased cyber threats associated with Covid-19 by supporting the Public Service Development Agency (PSDA) of the Ministry of Justice in improvement of cybersecurity systems and data management processes. With UK Government support, UNDP helped PSDA introduce fully functional analytical, prevention and protection systems for cyber threats, and develop standards of data collection and management. As a result, PSDA created a more effective, resilient system of information security and data management, enabling the agency to deliver services with greater accountability and responsiveness to citizens' needs.

**Innovation and Digital Entrepreneurship support**

Digital entrepreneurs and start-ups play a role in developing cybersecurity solutions and technologies. By fostering innovation and entrepreneurship, UNDP indirectly contributes to the growth of the cybersecurity industry.

In the Africa, UNDP in Ethiopia established the Innovation for Development Project together with Ministry of Science and Higher Education – a key ministry for the advancement of innovation in the country. The Project aimed to strengthen the linkages between universities and the science industry due to a recognition that these linkages are central for the advancement of innovation in the country. As part of this activity, at least 25 leaders drawn from the public sector, including regions, will be trained for five days on innovation and its role in development.

UNDP in South Africa implemented the 'Linking Youth to the Future of Work by Closing the Digital Divide' initiative. The initiative has a focus on strengthening digital skills for youth in the Global Business Services / Business Process Outsourcing sector. Overall, the initiative has capacitated 1,273 youth with digital skills from entry level to high end level, and has trained18 SMMEs that have gone on to secured markets. Through the initiative, 10 private sector partnerships were established to employ youth.

In the Arab States, a specialized program called "She for a digital tomorrow" was delivered to 2000 women government employees with an emphasis on digital inclusion and digital literacy. Another example is the regional approach to digital training and capacity building that has been underway since 2019 as part of a partnership between UNDP and the Mohammed bin Rashid Al Maktoum Knowledge Foundation (MBRF). The UNDP/MBRG skills development program aims to unlock the potential of national human capital and prepare employers and citizens with the necessary skills for a Fourth Industrial Revolution.

The program has created tailored learning pathways such as high-quality and cutting-edge massive open online courses (MOOCs) in English, French and Arabic that will be used to reskill and upskill 5,500 learners from eight countries (Algeria, Egypt, Iraq, Jordan, Morocco, Saudi Arabi, Tunisia and the United Arab Emirates), across six target groups (entrepreneurs, unemployed, university students and fresh graduates, TVET students and fresh graduates, public sector and MSMEs), with market-driven skills that are required for the future of work and the establishment of a knowledge economy and society.

In the Latin America and the Caribbean, UNDP in Barbados established a 12-week Business Adaptation Program (BAP) aimed at training 187 Caribbean MSMEs, of which 77% are women-owned, with diverse backgrounds and experiences, and hailing from different countries and territories across the region. Through this program, the business

owners are being trained in Digital Technologies, Financial Planning, and Marketing to better adapt to the instability and challenges caused by the COVID-19 pandemic.

In Asia Pacific, UNDP in Timor-Leste is currently supporting youth entrepreneurs through the Youth Employment and Entrepreneurship Skills (YEES) Project. Together with UNCDF and a local NGO, UNDP is providing digital finance literacy training to 300 youth entrepreneurs to have a basic understanding of digital payment and persuade them to adopt digital wallet as means of payment in their businesses. The aim is to build a digital economy ecosystem for youth entrepreneurs while internet infrastructure continues to be put into place by the government.

In Latin America, UNDP in Peru introduced "Innova Tu Mercado Digital", a capacity building program to empower women business owners and traditional markets leadership teams to find innovative solutions so they can increase their access to the market and income while reducing the gender digital gap. The platform is aimed at accelerating the digital transformation of merchants in the country's supply markets. This platform, which in addition to the UNDP includes public institutions, academia, financial institutions and civil associations, began the transformation of two markets in Lima.

## 3. Lessons Learned

While cybersecurity becomes an increasingly critical issue as countries accelerate their digital transformation, it is often not addressed in a holistic and strategic way as a foundational element to digital transformation. Asia Pacific colleagues and regional experts[1] consulted for this exercise indicated that there is a gap in terms of dedicated cyber-security and infrastructure projects.  A senior expert in the AU Cyber Security Experts Group[2] pointed to the fact that cybersecurity has yet to be mainstreamed into Africa's digital transformation agenda. Cybersecurity is not stated as a foundation pillar of the Digital Transformation Strategy of the Africa Union Commission (AUC), and the AUC has not included cybersecurity among its policy priorities in Africa.

Common key challenges faced during the implementation of these initiatives include resource constraints, capacity gaps, governance challenges and the dynamic nature of cyber threats.

Most member states face the challenge of limited capacity for data management and data privacy, leading to a majority of UNDP country offices undertaking programs to strengthen government systems and processes for data collection, data privacy, and protection of citizen data. The stakeholders most involved in these measures have been

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[1] See Annex for responses collected.
[2] Vice-Chairperson of the African Union Cyber Security Experts Group (AUSCEG).

governments and municipalities, particularly where civil registries have been updated in line with digital standards.

Improving the data standards and processes has also been complemented by training and capacity building efforts targeted to public servants, youth, SMEs, rural populations, and persons living with disabilities. These efforts include awareness campaigns, workshops, and skills training programs designed to empower target audiences against cyber threats.

Some governments have also proactively established regulatory frameworks which have enabled inclusive and safe digital public infrastructures and digital economies. In such instances, programs have been targeted towards training and skills building for public servants who are responsible for collecting information and/or enforcing cybersecurity regulations.

A key success factor in the implementation of these ICT initiatives is a strong connection to a local digital ecosystem, for example, in the form of partnerships with local universities or private sector. Through these partnerships, initiatives are often increasing in relevance and maintained more sustainably.

## 4. Methodology

67 UNDP country offices, and 7 regional offices were consulted for this submission. UNDP also consulted 5 external regional experts for this exercise (see annex for links to the data collected). The qualitative results and views shared are included above.

There are several limitations to consider. First, the initiatives shared here are selective, and do not capture all of the initiatives available due to the short timeframe for this exercise. In addition, while we sought to collate as much of the available programs as possible focused on cybersecurity, we found that country offices focused more on ICT programs in general. However, these have been included because any digital program is cybersecurity-adjacent, and the digital realm inherently carries cyber risks. Therefore, addressing related capacity and infrastructure gaps ultimately feeds into the cyber safety of a nation and its citizens. Lastly, the data collection focused primarily on UNDP programmes while considering a broader perspective and the context of existing partner interventions. These have been added to the mapping results for reference.

## Contact Information

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**Annex**

Relevant data, metrics, and supporting documentation are available in this annex to provide a more detailed understanding of the impact and progress of UNDP's initiatives.

**Mapping outcome, References and Links**

https://undp.sharepoint.com/:x:/s/CDOTeam/EQJEMT8_YL1Eqhs4bvE5mFABcH7d0W
YP0ckPrSXmUYm5RA?e=DbxbW9