National digital development reviews
for 2021

Guiding manual

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VISION

ESCWA, an innovative catalyst for a stable, just and flourishing Arab region.

MISSION

Committed to the 2030 Agenda, ESCWA's passionate team produces innovative knowledge, fosters regional consensus and delivers transformational policy advice. Together, we work for a sustainable future for all.

E/ESCWA/CL4.SIT/2021/Guide.1

Economic and Social Commission for Western Asia

National digital development reviews

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June 2021

UNITED NATIONS
Beirut

United Nations publication issued by ESCWA, United Nations House, Riad El Solh Square, P.O. Box: 11-8575, Beirut, Lebanon.

Website: www.unescwa.org.

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21-00755

Key messages

Conduct national and regional reviews of digital development using a unified standard model to monitor Arab countries' efforts in the field of information and communication technology, so as to support the achievement of the 2030 Agenda for Sustainable Development.

Determine the role of ESCWA and participating Arab countries in designing and implementing reviews, and form national cross-sectoral teams to coordinate work and draft reports, under the supervision of ministries of information and communication technology in their role as coordinators.

Reviews are an effective tool for national and regional policymakers to formulate evidence-based policies and to conduct comparisons between Arab countries, so as to enhance the benefit of information and communication technology in various economic and social sectors.


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Overview

Since 2018, the Economic and Social Commission for Western Asia (ESCWA) has been working to implement a regional initiative to support member States in advancing the information society, by conducting national and regional reviews of digital development. These reviews shed light on Arab countries' efforts in the field of digital technologies, and monitor progress in the information society in support of the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs). In 2020, this work was cemented in a large-scale project that ESCWA began implementing, in parallel with a number of other projects, within the framework of an eight-tracked integrated regional action programme aimed at promoting digital development and digital cooperation in Arab countries.

The national and regional reviews describe the national and regional landscape of digital development through an analytical study of the current situation. They constitute an effective tool to assist national and regional policymakers in developing evidence-based policies and making comparisons between Arab countries, with a view to maximizing the use of information and communication technology in many economic and social sectors, and accelerating progress towards the SDGs in the Arab region by 2030.

A total of 10 Arab countries collaborated with ESCWA to launch the first round of this project for the period 2018-2019. Iraq, Jordan, Kuwait, Mauritania, Oman, the State of Palestine, the Sudan, the Syrian Arab Republic, Tunisia and the United Arab Emirates prepared national reviews using indicative research tools developed by ESCWA for that purpose. These efforts resulted in the publication in 2020 of the first edition of the Arab Digital Development Report 2019: Towards Empowerment and Ensuring Inclusion.

To develop this track, ESCWA conducted a review of its components and tools, and designed the present guiding manual to assist Arab countries in preparing their national digital development reviews for 2021. When drafting the manual, ESCWA took into account observations made by participating countries while preparing their national reviews for the cycle 2018-2019, in addition to the observations of relevant organizations such as the International Telecommunication Union (ITU), the United Nations Conference on Trade and Development (UNCTAD), the United Nations Department of Economic and Social Affairs (UNDESA), and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

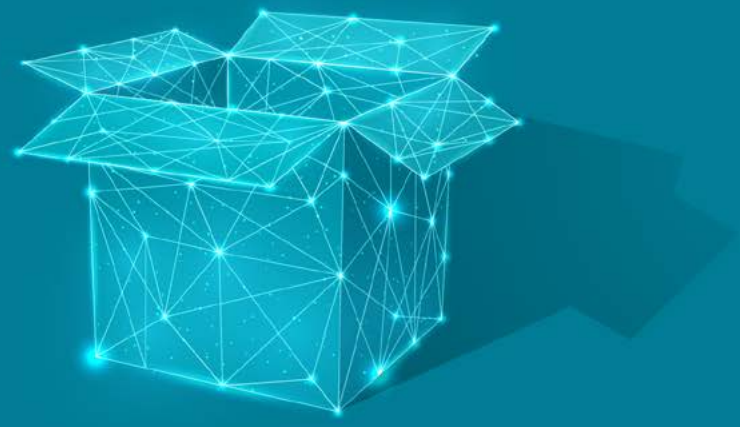
The manual comprises technical and organizational guidelines. The technical guidelines include the ESCWA conceptual framework for digital development, and the 2021 national digital development reviews standard template. The regulatory guidelines include the 2021 national digital development reviews process, and terms of reference for national focal points.

The manual is based on a comprehensive conceptual framework for digital development consisting of five clusters, which was developed by ESCWA in 2018 to include all aspects of digital policies related to strategic frameworks, the State, the economy, society, culture and the media, so as to facilitate follow-up on the action lines of the World Summit on the Information Society (WSIS) and the SDGs. In doing so, the follow-up process shifted from applying a linear approach to the 11 WSIS action lines, to adopting a panoramic perspective.

The 2021 standard model, adopted to launch the second round of the national digital development reviews, will contribute to revealing the status of digital development and digital cooperation in Arab countries and the achievements made in that regard, in a manner that is as close to reality as possible. It will be used in preparing national digital development plans in a number of countries wishing to do so, and the Arab digital agenda/Arab ICT strategy expected to be issued in 2022 as an Arab cooperative work, under the management of ESCWA and in partnership with the League of Arab States and relevant organizations.

The review process clarifies the expected roles of ESCWA and participating countries. The terms of reference set out the functions of national focal points, including sectoral focal points from ministries and other relevant institutions (members of the national task force).

The national reviews and the 2020 regional digital development report will form a baseline for monitoring progress in implementing the Arab digital agenda from 2022 to 2030. They will be available for reference on the digital development platform of the ESCWA website, and will help in the exchange of experiences between Arab countries, so as to promote digital development in the Arab region, empower everyone, ensure the inclusion of all citizens and achieve their wellbeing.

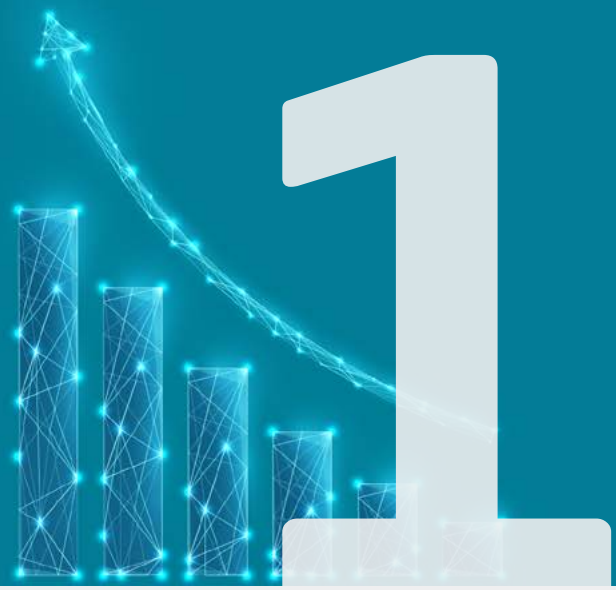


Contents

Abbreviations

B2B	business-to-business
B2C	business-to-consumer
B2G	business-to-government
CERT	computer emergency response team
DESA	Department of Economic and Social Affairs
G2B	government-to-business
G2C	government-to-citizen
G2G	government-to-government
GDP	gross domestic product
ICANN	Internet Corporation for Assigned Names and Numbers
ICT	information and communication technology
ICT4D	ICT for development
IGO	intergovernmental organization
IPv6	Internet Protocol version 6
ISCED	International Standard Classification of Education
ISIC	International Standard Industrial Classification of All Economic Activities
ISP	Internet service provider
IT	information technology
ITU	International Telecommunication Union
LAN	local area network

LTE	long term evolution
MSP	multisector partnership
NGO	non-governmental organization
OSS	open-source software
PCT	Patent Cooperation Treaty
PKI	management of public key infrastructure
PLT	Patent Law Treaty
PPP	public/private partnership
RDI	research, development and innovation
RSS	Really Simple Syndication
SDGs	Sustainable Development Goals
SMEs	small and medium-sized enterprises
SMS	short message service
STEM	science, technology, engineering and mathematics
STI	science, technology and innovation
TRA	telecom regulating authority
TRIPS Agreement	Agreement on Trade-Related Aspects of Intellectual Property Rights
UIS	UNESCO Institute for Statistics
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
URL	Uniform Resource Locator
WCT	World Intellectual Property Organization (WIPO) Copyright Treaty
WiMAX	Worldwide Interoperability for Microwave Access
WIPO	World Intellectual Property Organization
WSIS	World Summit on the Information Society
WTO	World Trade Organization



Technical guidelines

A. Digital development conceptual framework

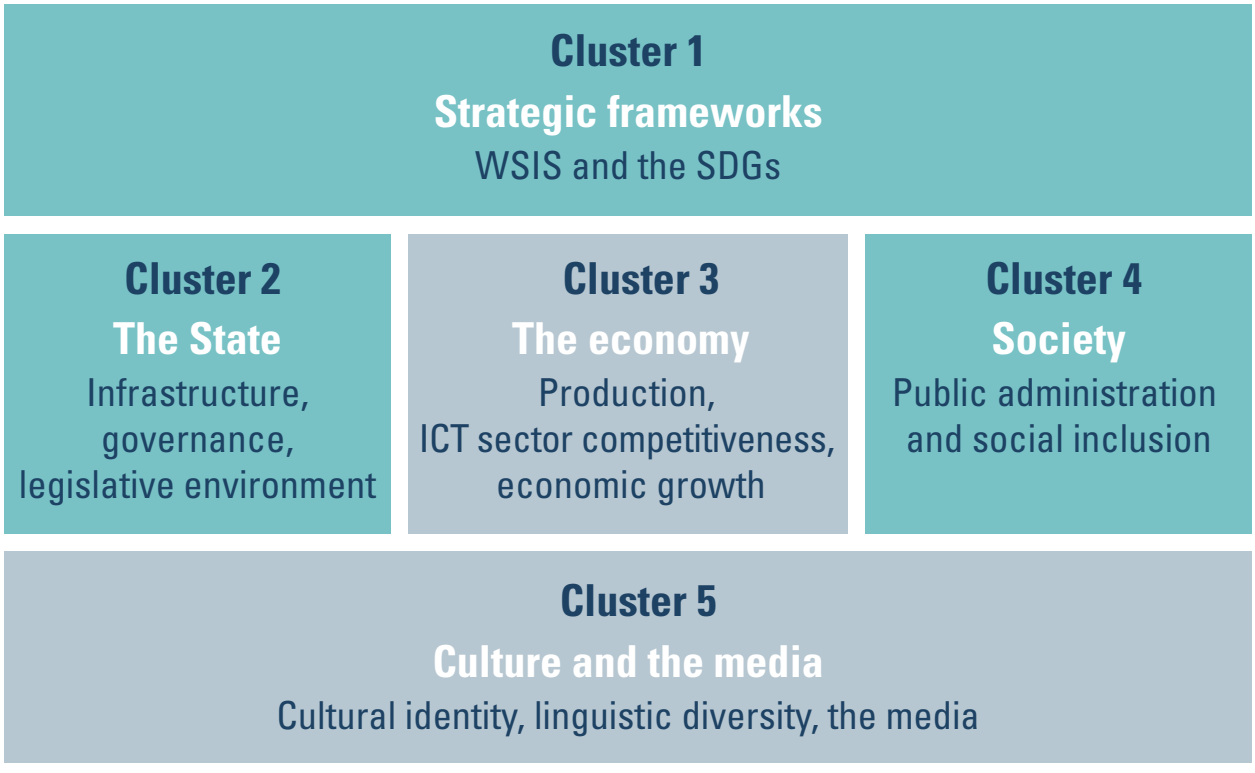
In 2018, ESCWA developed a comprehensive conceptual framework for digital development that covers all aspects of digital policies related to strategic frameworks, the State, the economy, society, culture and the media, so as to facilitate follow-up of the WSIS action lines and the SDGs. In doing so, the follow-up process shifted from applying a linear approach to the 11 WSIS action lines, to adopting a panoramic perspective.

The conceptual framework for digital development consists of the following five clusters that take into account the strong links between the SDGs and the WSIS action lines:

- **Cluster 1:** National, regional and international strategic frameworks.
- **Cluster 2**: Infrastructure, governance and legal environment policy areas.
- **Cluster 3**: Digital economy, employment and trade policy areas.
- **Cluster 4:** Digital transformation and social inclusion policy areas.
- **Cluster 5:** Culture and media policy areas.

For example, cluster 4 includes SDGs 3, 4, and 11 related to health, education, and sustainable cities, among others, while cluster 3 includes SDGs 8, 9, and others.

The conceptual framework for digital development aims to show the growing role of ICT in achieving the 2030 Agenda, which was limited to SDGs 9 and 17 although the impact of ICT extends to most, if not all, of the SDGs.



B. Standard template

1. Background

The present template is designed to facilitate the work of experts in drafting the national digital development reviews of Arab countries participating in the ESCWA digital development project, which is linked to the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs). Those reviews are expected to reflect digital reality at the national level, and later at the Arab regional level, guided by the general guidelines issued by the United Nations Secretary-General on the new global concept of digital cooperation, "connect, respect and protect", and by the global Roadmap for Digital Cooperation launched by the Secretary-General in June 2019.

The present template takes into account the observations made by countries participating in the preparation of national digital development reviews for the cycle 2018-2019. During that period, a pilot template was used, which was designed using a survey of the current state of implementation by member States of the main lines of action for building an information society, which are set out in the Geneva Plan of Action adopted at the 2003 World Summit on the Information Society (WSIS). The pilot template was thoroughly reviewed during the second half of 2020 in meetings and correspondence with participating States to consider lessons learned, good practices, proposals and recommendations to improve the work methodology, procedures and tools for preparing the next national digital development reviews before the launch of the next round of

national digital development reviews in 2021. All questions and required information contained in the initial template were reviewed, reformulated and/or repositioned within the updated template, deleting some parts or adding new ones under the five clusters that were established in the 2018 indicative model to effectively reflect the reality of information and communication technology (ICT) and relevant achievements in Arab countries.

Following the production of the updated template at the start of 2021, the United Nations bodies partnering with ESCWA, namely the International Telecommunication Union (ITU), the United Nations Conference on Trade and Development (UNCTAD), the Department of Economic and Social Affairs (DESA) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), were invited to review the updated template and propose adjustments to enrich it. This additional exercise was extremely useful and was concluded in the second quarter of 2021. The resulting version of the template will be used in the upcoming second round of national digital development reviews, in the ongoing and upcoming first round of national digital development agendas in a number of countries, and in the ongoing development of the Arab digital agenda.

The information required in the present template relates to mid-2019 to mid-2021, unless national experts deem it necessary to discuss and analyse older information. It is also possible to skip questions by mentioning that the necessary information is not available for the required period.

The main objective of this work is to exchange experiences and shed light on policy changes through initiatives and programmes introduced in Arab countries in the field of digital technologies, in an effort to achieve the SDGs.

2. Clusters

The normative model is centered on five clusters that make up the conceptual framework for sustainable development.

Cluster 1: National, regional and international strategic frameworks

(1) National digital strategies: role of government and stakeholders in promoting ICT for development (C1)[1]

Effective cooperation and partnerships between Governments and all stakeholders are vital to developing the information society. It is therefore essential to design appropriate policies and strategies to mobilize the largest number of stakeholders from across the public and private sectors, and to disseminate the opportunities created by the information society.

In this section, you are required to fill out the following table and give information on a national comprehensive digital strategy and policy (if any), and sectoral strategies and/or plans. For each sectoral strategy/plan, include its mission, vision, year adopted/planned and status, with an evaluation of its implementation thus far. Moreover, for the major sectors, list sectoral plans for building the information society or digital economy towards achieving the SDGs, including but not limited to Government, education, industry, commerce and health, and describe progress towards the fulfilment of national policies and strategies including relevant accomplishments.

National level A comprehensive national digital strategy exists (like Digital Nation, Smart Nation, Digital Economy, e-commerce, etc.)	(yes/no)
Name of the strategy	
Year of adoption and latest update	
Government agency in charge	Name in English: Name in Arabic:
Pace of implementation	(Excellent/good/average/limited)
Description of progress made (maximum 150 words)	
Sectoral level ICT sector strategy/plan exists	(yes/no)
Name of the strategy/plan	
Year of adoption and latest update	
Government agency in charge	Name in English: Name in Arabic:
Pace of implementation	(Excellent/Good/Average/Limited)
Description of progress made (maximum 150 words)	
Other sectors Digital transformation strategies/plans exist (digital learning, digital health, etc.) (Repeat the five rows below for each strategy/plan as required)	(yes/no)
Name of the strategy/plan	
Year of adoption and latest update	
Government agency in charge	Name in English: Name in Arabic:
Pace of implementation	(Excellent/good/average/limited)
Description of progress made (maximum 150 words)	

(2) National engagement in regional and international cooperation initiatives (C11)

The successful implementation of the information society requires cooperation at the national level between the public and private sectors and with civil society (non-governmental organizations). It also requires cooperation at the regional and international levels, between all stakeholders, especially in financing and implementing digital development and in establishing related action plans.

Follow-up to the World Summit on the Information Society

In this regard, you are required to:

- Determine if there are official national action plans, with regional cooperation components, to support the fulfilment of the goals indicated in the WSIS Geneva Declaration of Principles (2003) and the Tunis Agenda for the Information Society (2005), or the outcome document of the high-level meeting of the General Assembly on the overall review of the implementation of the outcomes of the World Summit on the Information Society (New York, 15-16 December 2015). If so, provide details about these plans and what they have achieved or will achieve.
- Determine the indicators and statistical data on the information society that the central statistical organization in your country issues periodically to measure ICT performance in the achievement of the SDGs, and to analyse the main dimensions of ICT.
- Identify a regional project for building the information society or digital economy with national components being implemented in your country. Give an outline of the project and show the extent of progress made.
- Indicate a project that helps bridge the digital divide at the national level by achieving the SDGs. Give an overview of the project and show the extent of progress made.
- Identify a WSIS success story available online in a concise and compelling format to exchange knowledge through experiences and good practices on policies and tools designed to promote the information society at the regional and subregional levels.

Global Roadmap on Digital Cooperation

In this regard, you are required to:

- Identify related efforts/activities through which participation or engagement took place during the last two years in policy advocacy, consultations or contributions to national, regional and/or global tracks pertaining to the global Roadmap on Digital Cooperation, which was launched by the United Nations Secretary-General in 2019.

Other related frameworks

In this regard, you are required to:

- Identify other frameworks or initiatives for cooperation at the regional or international levels, if any, that your country is actively engaged in and has relevant national plans/activities, whether related to United Nations bodies or other bodies.

Cluster 2: Infrastructure, governance and legal environment policy areas

(1) ICT infrastructure (C2)

Infrastructure is central to achieving digital inclusion and enabling universal, sustainable, ubiquitous and affordable access to ICTs by all. This cluster considers relevant services already in place in developing countries and in countries with economies in transition, to provide sustainable connectivity and access to remote and marginalized areas at the national and regional levels.

Market structure and regulatory landscape

In this regard, you are required to:

- Provide a summary of the telecom structure market (mobile and Internet services).
- Fill in the following table:

Telecom service	Status of regulatory landscape	List main awarded telecom licenses
Mobile services	(competitive, monopoly or duopoly)	
Internet services	(competitive, monopoly or duopoly)	

ICT infrastructure by service type

In this regard, you are required to:

- Determine the availability of the following services: mobile phone services and Internet services, including fixed and mobile broadband, fiber-to-the-home (FTTH) and Next-Gen Wireless.
- List in-service Internet service providers (ISPs).
- List in-service mobile phone networks and penetration.
- Fill in the following table (obtaining data from a trusted source such as ITU).

Indicator	Value	Latest year
Mobile phone penetration (subscriptions)		
Percentage of households with Internet access		
International Internet bandwidth (bit/s) per Internet user		
Percentage of the population covered by mobile networks: • At least 3G • At least LTE/WiMAX		
Fixed-broadband subscriptions by speed tiers as a percentage of total fixed-broadband subscriptions: • 256 Kbit/s to 2 Mbit/s • 2 to 10 Mbit/s • 10 Mbit/s or more		

ICT connectivity

Digital inclusion consists of enabling universal, sustainable and ubiquitous access to ICTs by all, including households, businesses, government institutions, schools, universities, health institutions, libraries, post offices, museums, community centres, and other institutions accessible to the public.

In this regard, you are required to:

- List main initiatives (public/private/non-governmental organizations-NGOs) geared towards providing universal access to ICTs.

Internet architecture

In this regard, you are required to:

- Describe the current national Internet landscape, including:
  - Backbone and broadband network infrastructure.
  - Availability of WiFi hotspots, WiMAX services and 3G/4G mobile networks.
  - Fiber optics networks, Internet submarine cables.
  - National and regional Internet exchange centres, and regional root servers.
  - Adoption of the Internet Protocol version 6 (IPv6).

Domain name management and adoption

In this regard, you are required to:

- Fill in the following table:

Name of country code top-level domain (ccTLD) registrar	*Name in English:* *Name in Arabic:*			
URL of registrar	(http://)			
Total number of ccTLDs registered in the country (Arabic and English) for the years 2019, 2020 and 2021		2019	2020	2021
	Arabic			
	English			

(2) Governance (C1 and C11)

Public/private partnership, multisector partnership and role of non-governmental organizations

In this regard, you are required to:

- State if there is a structured dialogue involving all relevant stakeholders to devise sustainable digital strategies for the information society and for the exchange of good practices. If so, give an overview of this dialogue.
- Identify mechanisms, if any, at the national level for the initiation and promotion of partnerships among stakeholders of the information society.
- State the presence or establishment of at least one functioning public/private partnership (PPP) or multisector partnership (MSP).
- Describe NGO engagement in concrete projects to develop the information society.

Participation in Internet governance activities

In this regard, you are required to:

- State if there is any structured dialogue involving all relevant stakeholders in the field of Internet governance, and give an overview of this dialogue.
- Identify mechanisms at the national level for the initiation and promotion of a national Internet governance forum.
- State if your country is involved in the Arab Internet Governance Forum process.
- State if your country is involved in the Global Internet Governance Forum process.
- State if your country is involved in the policymaking and public consultations of the Internet Corporation for Assigned Names and Numbers (ICANN).

(3) Legal environment, ethics and trust (C2, C5, C6 and C10)

The provision of an enabling environment is crucial to mobilizing resources and creating a climate conducive to ICT acquisition and dissemination. A trustworthy, transparent and non-discriminatory legal, regulatory and policy environment constitutes an essential basis for cooperation between the public and private sectors and all community components. With the increasing sensitivity and value of digital information, there is an increasing need to ensure its security and protect its privacy. This area tackles specific requirements regarding security and privacy, protection of personal data, and confidentiality of information.

Legal and regulatory environment

In this regard, you are required to:

- Indicate the existence of a supportive, transparent, and pro-competitive, legal and regulatory framework, providing the appropriate incentives for investment and community development in the information society, including:
  - Intellectual property rights.
  - Telecom and Internet legislations and regulations (like updated telecom laws, cyberspace laws, etc.).
  - Cyberlegislation, especially for e-signature, e-transactions, e-commerce and e-payment.
- Fill in the following tables.

International treaties and conventions on intellectual property	Adopted	Observer status	Year of adoption
World Trade Organization	(yes/no)		
Paris Convention on the Protection of Industrial Property	(yes/no)		
Patent Cooperation Treaty	(yes/no)		
World Intellectual Property Organization Copyright Treaty	(yes/no)		
Madrid Agreement Concerning the International Registration of Marks	(yes/no)		
Hague Agreement Concerning the International Registration of Industrial Designs	(yes/no)		
Patent Law Treaty	(yes/no)		
Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement)	(yes/no)		
Other related treaties/conventions (specify):	(yes/no)		

Cyberlaws	Available	Law number	Year passed
E-transactions law	(yes/no)		
E-signature law	(yes/no)		
E-payment law	(yes/no)		
E-commerce law	(yes/no)		
Law for the management of public key infrastructure	(yes/no)		

Open data and open access to information

In this regard, you are required to:

- List the laws addressing open data and/or open access to information (law number, year passed, reference URL).
- List policies, initiatives or guidelines related to open data and/or open access to information.
- Describe ways adopted to achieve user education and awareness about open data and open access to information.

Data privacy and data protection

In this regard, you are required to:

- List the laws addressing privacy and data protection (law number, year passed, reference URL).
- List policies, initiatives or guidelines on the respect of privacy and data protection.
- Describe ways adopted to achieve user education and awareness about online privacy and privacy protection.

Countering ICT misuse and preventing ICT abuse

In this regard, you are required to:

- List the laws addressing cybercrime (law number, year passed, reference URL).
- Identify initiatives launched for the prevention, detection and prosecution of cybercrime and ICT misuse.
- Describe efforts exerted to fight spam at the national and international levels.
- Identify measures adopted for the prevention and detection of abusive ICT uses.

Use of electronic transactions and documents

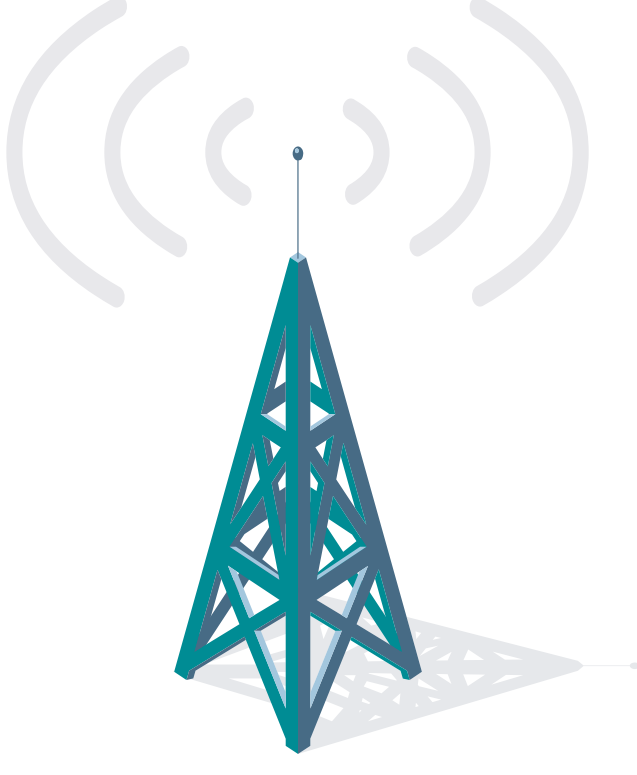
In this regard, you are required to:

- Indicate if electronic documents and transactions are used, including electronic means of certification and authentication (e.g., e-signature).

Online and network security

In this regard, you are required to:

- State if there is a national security strategy or action plan addressing issues related to protecting the Government's critical resources and network (indicate whether such strategy is set up and applied and summarize its components).
- State if there is a national computer emergency response team (CERT) (indicate its name in English and Arabic, its activity, number of incidents recorded).
- Identify national awareness plans or initiatives taken in emergency situations related to Internet and information security.
- State if there are secure and reliable applications facilitating online transactions.
- Name cybersecurity measures taken to ensure online transactions are secure.
- Describe good national practices in the field of information security and network security.



Cluster 3: Digital economy, employment and trade policy areas[2]

(1) Digital economy and the ICT sector (C12)[3]

The digital economy is an economy based on an ecosystem (economic, social and cultural) that is centred around a strongly built ICT sector, and driven by the growing importance of digital data and digital platforms.[4] Harnessing the digital economy requires public-private collaboration, in addition to the availability of many factors including investments and finance facilities; industry structure; and research, development and innovation capacity. The ecosystem normally includes multiple ministries, authorities and commissions, thus strengthening supply chains and empowering businesses, while protecting end users/consumers. This whole ecosystem can result in economic contributions to gross domestic product (GDP), job creation, increased export and other economically oriented value creation.

Government institutions shaping the ICT sector

Governments differ in their institutional structures that govern the digital economy, including the ICT sector. In some countries, the ICT sector is governed through a ministry of ICT. In others, through a ministry of telecom and digital economy; while in certain countries two or three ministries deal with ICT, whereby telecom falls under one ministry, information technology (IT) under another, and digital economy under a third ministry.

Telecom regulators, also called telecom regulating authorities (TRAs), and IT service authorities are governmental entities that issue secondary legislation that complement existing laws to organize competition in liberalized telecom services markets, or to advance the development and use of other ICT applications and services.

Almost all countries have established telecom regulators, with some also in charge of postal and media communication sectors. The extension of this concept to other IT services does not have a unique worldwide model: some countries have an IT commission or authority; others have an IT industrial development agency; while others provide e-government services under TRAs.

In this regard, you are required to:

- Provide a list of ICT regulators (authorities or commissions) in your country and their respective mandates, highlighting achievements/successes and challenges.
- Provide the name(s) of the ministry(ies) involved in governing the digital economy and their respective mandates.

Actors in the ICT sector

The productive side of the ICT sector comprises industries/firms that produce ICT goods (including hardware, telecom and software) and provide services, solutions, applications, digital content and technical training.

In this regard, you are required to:

- Indicate how the above set of businesses are classified in your country, from the point of view of statistical offices, and from the point of view of the Ministry of Economy.
- Provide a set of tables for the main ICT companies, which include the economic and demographic characteristics of those companies, notably:
  - Employment category: large, medium, small and micro.
  - Economic activity and business volume.
  - Company classification: producing ICT equipment/software, using ICT in its business, selling and installing equipment and software.
  - Nature of the company: telecommunications/networks, including mobile phone companies; software, including development of tools and applications for laptops and mobile phones; content, including the development of digital content for computers, mobile phones or tablets.
  - Company ownership: private, public, participatory; foreign, local, joint.
- Provide, if possible, statistical data or information on the following:
  - Composition of the workforce in ICT companies in terms of gender balance (among workers and in leadership) and proportion of

persons with disabilities among workers.
  - Existence of a government policy to encourage women to apply for employment in ICT companies, facilitating gender balance at all levels.
  - Most important successes these companies achieved and obstacles they faced in their establishment and launch.

Research, development, innovation and standardization to promote the ICT industry

A mature digital economy cannot excel without efforts to promote the ICT industry at large, with a focus on science, technology and innovation (STI); research, development and innovation (RDI); and standardization.

In this regard, you are required to:

- State whether there is a strategy and/or policy related to research, development and/or innovation in the ICT sector and indicate whether it is gender sensitive.
- Describe the status of research and development in the field of ICT, in terms of available equipment, tools and services.
- Identify government support for research and development programmes in areas such as:
  - Machine translation tools.
  - Multilingual search engines and content referencing.
  - Data-driven innovations and applications.
  - Data-oriented science and related business (e.g. open data on weather, traffic, refugees).
  - Deployment and use of open-source software (OSS).
  - ICT-based support for persons with disabilities.
- Identify public and/or private initiatives for strengthening innovation in the ICT sector (e.g., research and development centres of large companies).
- Highlight the level of development, use and promotion of open, interoperable, non-discriminatory and demand-driven standards.
- Indicate the level of awareness and adoption of international interoperability standards (e.g., for global e-commerce).
- Indicate the level of awareness of access requirements for persons with disabilities.

Government facilitation for entrepreneurship and investment in the ICT sector

The present section focuses on governments and stakeholder measures to strengthen the ICT sector and to increase competitiveness, particularly as related to entrepreneurship and investment.

For entrepreneurship:

- Indicate government measures, initiatives and activities to promote entrepreneurship, innovation and incubator schemes, providing information on women entrepreneurs.
- Provide information on how government assistance to ICT-based small and medium-sized enterprises (SMEs), firms, startups and entrepreneurial initiatives increased their competitiveness through the following:
  - Streamlining administrative procedures.
  - Facilitating access to capital.
  - Enhancing capacity to participate in ICT-related projects.
- Describe measures related to the support of ICT exports (see details on trade in ICT goods and services in the next section).

For investment:

- Describe measures to attract major private national and foreign direct investments, providing information on government investment funds including their target areas, and their concern for gender equality.
- List the contributions of international financial organizations to the creation of a transparent, stable and predictable investment environment in the ICT sector.
- Indicate national strategies, policies and incentives related to the promotion of investments in the ICT sector.
- Highlight the legal framework for investments in the ICT sector, including incentives.
- Provide information on the availability of venture capital investments and agencies for building the ICT sector, and the availability of ICT competitiveness indicators.

- Describe one or two success stories in any of the above domains of entrepreneurship and investment.
- Describe major obstacles to widespread entrepreneurship and investment in various categories of ICT companies.

(2) Economic impact of the ICT sector (C12++)[5]

Contribution of the ICT sector to the national economy

In this regard, you are required to:

- Fill table 1 (core indicators on the ICT producing sector) and table 2 (core indicators on international trade in ICT goods and services) set out in the annex to the present document.
- Indicate the added value of the ICT sector to GDP in your county.
- Provide illustrations on selected determinants of ICT contribution to growth in your country, such as education, manufacturing, automation, cost of ICT, investments institutional quality, and income levels, if possible.

Trade in ICT goods and services[6]

In this regard, you are required to:

- Provide information on how the Government in your country has instigated an enabling environment that supports and facilitates trade (particularly export) of ICT goods and services. The enabling environment may include incentive programmes, such as tax reduction, regulatory mechanisms, standards or measurement framework with national targets, and financing support/financing instruments.
- Determine the ratio of sales (export) of ICT goods (computer equipment, communications equipment, software) and services, to all countries, to total exports of all goods and services.
- Determine the ratio of purchases (imports) of ICT goods (computer equipment, telecommunications equipment, software) and services, from all countries, to total imports of all goods and services.

Digital trade

Digital trade relates to goods and services ordered online (e-commerce) and services delivered digitally (ICT-enabled services), according to the Handbook on Measuring Digital Trade.[7] Hence, this section relates to ICT-enabled trade (e-trade) including e-commerce, e-fulfilment (delivery/courier/post) and e-payments. Government support and facilitation is crucial to creating an enabling environment for digital trade or e-business. The enabling environment for e-business may include incentive programmes, such as tax reduction, regulatory mechanisms, standards or a measurement framework.

In this regard, you are required to:

- List key regulations, facilitation, standards or measurement frameworks instigated by your Government to boost digital trade, e-commerce and e-payment.
- Highlight availability of main e-commerce platforms or gateways created and/or used in your country.
- Provide data on the availability of digital trade, e-business, e-commerce, e-fulfilment, online banking and e-payment services in your country, and to what extent these services are mature and applications are classified as B2G (business-to-government), B2B (business-to-business), or B2C (business-to-consumer).
- Provide data on the use of digital trade, e-business, e-commerce, e-fulfilment, online banking and e-payment services in your country, disaggregated by gender (such as the percentage of women using these digital trade-related services), if available.
- Provide one success story, or more, of e-commerce in your country that illustrates its importance and need.
- Identify the main obstacles in your country that prevent the widespread adoption of national e-commerce, on the one hand, and of cross-border e-commerce, on the other.
- Indicate the extent of accessibility to these services for persons with disabilities.
- Fill in the following table:

Law/service	Available	Law number	Year passed
E-banking law	(yes/no)		
E-commerce law	(yes/no)		
E-payment law	(yes/no)		
Other e-services laws	(yes/no)		

Employment in the ICT sector

The present section deals with employment in the ICT sector, and employment created in ICT occupations in other sectors. The next section deals with employment and work using the Internet (job matching).

ICT can be used to increase production efficiency and lower production cost of goods and services. This, however, reduces employment (since employment is considered the highest cost of production). At the same time, ICT can be used to create new services or products, and even create new jobs that may exceed those lost due to the use of ICT. Therefore, by not investing in ICT resources and skills, firms may not be able to compete in the digital economy and ultimately would go out of business, which will have significant effects on employment.

In this regard, you are required to:

- Illustrate the impact of ICT on faster employment growth in your country by creating jobs in the ICT sector or creating ICT occupations in other sectors, with examples if possible.
- Illustrate ICT contributions to job creation for young people in your country, highlighting the magnitude of ICT job creation for men and women (through case studies, initiatives, projects).
- Indicate incentives encouraging employment in the ICT sector or creating ICT occupations in other sectors.
- Indicate hurdles preventing employment in the ICT sector, including brain drain of ICT experts.
- Highlight the availability of data, periodic reports, or research studies prepared by the authorities concerned with employment and work, on measuring or evaluating the net number of job opportunities created as a result of ICTs, whether in the ICT sector or in other sectors, disaggregated by gender, if available.
- Determine, in case those data, reports or studies are not available, if there is any methodology, approach or criteria – whether adopted or being developed – regarding this type of measurement or evaluation. If so, provide details on this measurement approach or evaluation criteria.

Employment through the Internet

The previous section dealt with employment in the ICT sector, and employment created in ICT occupations in other sectors. The present section deals with employment and work using the Internet (job matching).

In this regard, you are required to:

- Highlight availability of employment portals and national databases of online résumés.
- Highlight the magnitude of ICT use (such as Internet, short message service (SMS) broadcast, announcements via social and professional networks) to locate employment opportunities.
- Highlight any public or private initiatives which support teleworking in your country, allowing citizens to live within their societies and work anywhere, thus increasing employment opportunities, especially for women and persons with disabilities, including data from these initiatives that indicate the use of teleworking by both men and women.
- Provide data related to such initiatives, if they exist, to see if the percentage of women making use of teleworking is higher or equal to that of men, and conduct related analysis.
- Provide a success story from your country related to e-employment and teleworking lessons learned.
- Indicate major hurdles limiting the use of e-employment.

Cluster 4: Digital transformation and social inclusion policy areas[8]

(1) Inclusive and empowering access to information, knowledge, applications and content (C3)

ICT allows people worldwide to access information, knowledge and content almost instantaneously, and thus empowers individuals, communities and society.

This area aims to promote and increase access to relevant public domain information, knowledge, applications and content.

Action line C3, as described in the WSIS Geneva Plan of Action (2003), entails access to public official information; access to scientific knowledge; digital public libraries and archives; ICTs for all initiatives; open source and free software; and public access to information.

Inclusiveness (access): availability, development, affordability and adaptability

Target groups: Individuals in general (citizens, migrants, displaced), children (especially marginalized children), women (especially marginalized women), young people (especially marginalized young people), older persons (especially marginalized older persons), persons with disabilities and other disadvantaged and vulnerable groups.

In this regard, you are required to:

- Indicate, for each of the above target groups, the relevance and meaningfulness of "access" according to the following three aspects:
  a. **Availability and affordability:** Identify available digital-based information/knowledge platforms, including their gender considerations (accessibility to these platforms for women), such as journals, books, digital public libraries, scientific archives, applications, content, and services that are free or made affordable through certain government regulations[9] or community-based programmes.
  b. **Development and adaptability**: Indicate if the above available digital-based information/ knowledge platforms are adapted to the specific target groups, including persons with disabilities, or there are plans to adapt them such as localization, customization, periodical updates and upgrades.
  c. **Means of access – availability of adequate access through various channels:** Availability of sustainable and affordable or free-of-charge access through multi-purpose community public access points to the Internet, and plans to upgrade them including scheduling access for women and girls.
     – Identify initiatives to provide free-of-charge access to the Internet in metropolitan-wide public areas.
     – Identify help services and assistance provided to users in places such as libraries, educational institutions, public administrations, post offices or other public places, with emphasis on rural and underserved areas.
     – Indicate major obstacles to wide-scale digital-based inclusiveness of the above-mentioned target groups.
     – Indicate if there are special provisions for the access of persons with disabilities (sign language, text-to-speech).

Empowerment (use): education, entertainment, political engagement and economic returns

Target groups: Individuals in general (citizens, migrants, displaced) and marginalized and/or vulnerable groups, including children, women, young people, older persons, persons with disabilities and other disadvantaged groups.

In this regard, you are required to:

- Indicate for each of the above-mentioned target groups the purpose and utility of usage, and the role of stakeholders according to the following:
  a. **Purpose of usage:** Indicate the main purpose of usage by the specific target group for the following types of engagement, while providing sex-disaggregated data to reflect on the trend of engagements, and capture the potential

impact of ICTs on women's participation in political and economic activities:
  - **Social engagement:** using ICTs as a tool by citizens to improve their social engagement and living conditions (literacy, education, recreation, transport, dwelling, health, nutrition, insurance, safety).
  - **Economic engagement:** using ICTs as a tool by citizens to improve their engagement in economic activities (SME ownership, transactions, e-commerce, full-time jobs, part-time jobs, work-from-home, freelancing).
  - **Political engagement:** using ICTs as a tool by citizens to improve their participation in local governance (e-services, e-voting, e-participation) and the country's ranking according to the indicators of electronic services and electronic participation.

b. **Role of stakeholders:** Indicate the main role and motivation of local authorities or community empowerment groups in promoting the above-mentioned purposes of usage, including management of related networks.
  - Indicate for each of the above-mentioned target groups the major hurdles obstructing their wide-scale digital-based empowerment.

(2) Capacity-building on ICT4D/digital development (C4)[10]

Everyone should have the necessary skills to benefit fully from the information society. Consequently, capacity-building in ICT for development (ICT4D) is essential. ICT can contribute to the following:

- Achieving universal education worldwide, through education and training of teachers, particularly vocational and tertiary education in science, technology, engineering and mathematics (STEM).
- Offering improved conditions for lifelong learning, which consider the needs of both men and women, and enable people who are outside the formal education process to improve their professional skills.
- Facilitating social life engagement, political participation and social cohesion.

Targeted training programmes

In this regard, you are required to:

- Highlight and evaluate national targeted education or training programmes (designed by intergovernmental organizations, the public and private sectors, and/or non-governmental organizations) providing opportunities of full participation in the information society for the following groups:
  - Civil servants.[11]
  - Women.
  - Young people.
  - Persons with disabilities.
  - Older persons.
- Indicate, for each of the above-mentioned groups, the major hurdles obstructing wide-scale capacity-building on ICT4D.

(3) ICT applications

E-government (C7)[12]

ICT thematic applications can support sustainable development in the fields of public administration, business, education and training, health and employment, within the framework of national e-strategies. The ICT applications could be back-office applications, web-based or mobile applications.

In this regard, you are required to:

- Indicate the use and adoption of ICT in public administration in terms of:
  - Computerizing public administration.
  - Computerizing customs processing.
  - Computerizing taxation and revenues management systems.
  - Digitizing information.
  - ICTs in the environmental sector.
  - ICTs in the transport sector.
  - Engaging with all citizens.
- Provide information on the availability of e-government services including:
  - G2G (government-to-government) interaction between local and central governments.
  - G2C (government-to-citizen) delivery models and government portals.

  - G2B (government-to-business) interaction between local and central government and the commercial business sector.

- Provide information on accessibility of these applications and services for persons with disabilities.
- Fill in the following table:

Authority in charge of ICT in public administrations	English name: Arabic name: URL:
E-government authority	English name: Arabic name: URL
Number of implemented government e-services	
Number of planned government e-services	

- Indicate availability, adoption and use of e-procurement applications.

- Fill in the following table by indicating available services on the e-government portal:

URL of e-government portal: (http://)		
Information	General	(yes/no)
	Laws	(yes/no)
	Directories	(yes/no)
Services	Static information	(yes/no)
	Downloadable forms	(yes/no)
	Interactive	(yes/no)
E-payment		(yes/no)
Online account		(yes/no)
Multilingual		(Ar/En/Fr or other)
Citizen participation	Blogs	(yes/no)
	Polls	(yes/no)
Social media	Facebook	(yes/no)
	Twitter	(yes/no)
	LinkedIn	(yes/no)
	YouTube	(yes/no)
	WhatsApp	(yes/no)
Additional services	Really simple syndication (RSS)	(yes/no)
	Web statistics	(yes/no)
	Search	(yes/no)
Mobile version	Support for smartphone/tablet	(yes/no)
	Dedicated app (iOS or Android based)	(yes/no)
Other features	(indicate)	

- Also fill in table 4 (core indicators on ICT in government) set out in the annex to the present document.

E-learning/e-education (C4/C7)

In this regard, you are required to:

- Fill in table 3 (core indicators on ICT in education) set out in the annex to the present document. Those indicators take into consideration ICT availability in education for and participation of both men and women, using gender sensitive content and sex disaggregated data.
- Provide a narrative highlighting efforts to integrate ICT in education and training in various areas (including curriculum development, teacher training, institutional administration and management) and at all levels (including school, university) as follows:
  - **a. Basic literacy**
    - Use of ICTs as a tool for basic literacy in your country.
  - **b. Primary and secondary education**
    - Use of e-learning systems and applications at all school levels.
    - Availability of virtual schools, including accreditation and accessibility of persons with disabilities.
    - Availability/penetration of Internet connectivity in schools, in addition to free and open educational portals.
    - Availability of distance learning to help students develop self-learning and self-development capacities.
    - Availability of distance training as part of capacity-building programmes.
  - **c. Higher education**
    - Availability of e-learning systems and applications (management information systems, student information systems) in universities.
    - Availability of virtual universities, including their accreditation.
    - Availability of local e-content libraries in universities.
    - Extent to which universities are connected to global digital libraries via the Internet, and making them available to their students and professors (which is a major requirement for scientific research).
    - Availability and accreditation of online learning programmes/ distance learning degrees.
    - Availability and accessibility of all mentioned services for persons with disabilities.
    - Training provided as part of capacity-building programmes, helping students to develop self-learning and self-development capacities.
  - **d. Training and other forms of education**
    - Existence of local ICT training centres with the cooperation of all stakeholders, taking advantage of existing facilities such as libraries, multipurpose community centres, and public access points.
    - Extent of accessibility for persons with disabilities.
    - National programmes supervised by the Government for capacity-building of women in ICT.
    - Availability of distance learning and training as part of capacity-building programmes, helping users to develop self-learning and self-development capacities.
    - Major hurdles obstructing the wide-scale use of ICTs in education and training (including e-learning), with sex disaggregated data and gender sensitive analysis on each.

E-health (C7)[13]

In this regard, you are required to:

- Identify availability and access to the world's medical knowledge and locally relevant content resources needed to better address public health issues, women and men's health, and diseases such as HIV/ AIDS, malaria, tuberculosis and corona (COVID-19).
- Identify national programmes that address and promote sexual and reproductive health for both men and women, and raise social awareness in that regard.
- Determine the approved national programmes to combat epidemics, including malaria and corona.
- Indicate the use of telemedicine and medical teleconferencing for underserved areas and vulnerable populations.

- Describe the maturity and implementation of the following health-care information systems:
  - Patient care management.
  - Digital record keeping.
  - Pharmaceutical management.
  - Databases for national health care.
- Indicate if ICT-based information systems are used to alert, monitor and control the spread of communicable diseases, and to provide medical and humanitarian assistance in disasters and emergencies.
- Report a success story related to wide-scale digital-based health programmes implemented nationally.
- Indicate major hurdles obstructing the use of digital-based health programmes at the national level.

Cluster 5: Culture and media policy areas

(1) Cultural identity and linguistic diversity (C8)[14]

Safeguarding cultural and linguistic diversity, while stimulating respect for cultural identity, traditions and religions, is essential to the development of the information society. Digital content, particularly on the Internet, preserves language, facilitates its evolution and promotes cultural diversity while sustaining socioeconomic development. In addition, digital content development can play a major role in preserving national heritage.

Use of ICT in support of cultural and linguistic diversity

In this regard, you are required to:

- Indicate the use of ICT in your country for the preservation of linguistic diversity and cultural heritage, keeping it accessible as a living part of today's culture. This includes the availability and development of systems aimed at ensuring continued access to archived digital information and multimedia content in digital repositories, and supporting archives, cultural collections, museums and national libraries as the legacy of humankind.
- Highlight the development of national digital archives and digitization of public, educational, scientific and cultural heritage information.
- Use of social networking and social media/websites and their role in preserving the cultural identity of individuals, populations and cultural groups, and enhancing countries' linguistic diversity.

(2) Media (C9)[15]

The media sector and its various and diverse forms are part of the digital world that encompasses all sectors of the economy. Media systems play an essential role in developing the information society, and are recognized as an important contributor to press freedom and information plurality.

Media diversity, independence and pluralism

In this regard, you are required to:

- Indicate if there is diversity of media and media ownership in your country.
- Fill in the table below, indicating the number of media outlets in each category.

Media outlets	Language(s)	Ownership			
		Private	Mixed	Government	Foreign
Newspapers					
Electronic newspapers					
Magazines					
News agencies					
Radio stations					
Television stations					

- Indicate if there is government support for media institutions and reporters.
- Indicate the existence of legislation governing the media sector, such as that dealing with freedom and plurality of information.
- Describe the media sector contribution to the freedom and plurality of information.
- Describe the portrayal of women in the media.
- Indicate the percentage of female media journalists/editors.

Role of the media in the information society

In this regard, you are required to:

- Provide an assessment of the role of the media: print, broadcast and new media in the information society.
- Highlight the use of traditional media in bridging the knowledge divide and facilitating the flow of knowledge, particularly in rural areas.
- Indicate the extent to which social media is used in preserving the cultural identity of peoples and enhancing countries' linguistic diversity.

Convergence of ICT and the media

In this regard, you are required to:

- Describe the national preparedness for convergence of television, Internet and telephony (triple play).
- Provide statistics for double and triple packages.

Social media

In this regard, you are required to:

- Highlight the role of social media in raising awareness and building the information society.
- Indicate the extent to which social media is used to preserve the cultural identity of individuals and ethnic and cultural groups, and to enhance the country's linguistic diversity.

Useful initiatives

(1) Other initiatives and success stories

In this regard, you are required to briefly list existing or proposed initiatives and projects that use digital technology in support of sustainable development, if any, without limiting them to a specific field.

(2) Handling emerging events and crises

There may be emerging national, regional or global events or crises (such as COVID-19), which can be addressed effectively with ICTs help.

In this regard, you are required to:

- Indicate how your country has dealt with such events and crises through ICT means, and whether positive results have been achieved.

Organizational guidelines

A. Review process

1. Background

ESCWA organised a series of research meetings (September–October 2020) with the 10 Arab countries that participated in the first round of the national digital development reviews (NDDRs) for 2019, namely Iraq, Jordan, Kuwait, Mauritania, Oman, the State of Palestine, the Sudan and the Syrian Arab Republic, Tunisia and the United Arab Emirates. The work within the framework of these interviews focused on discussing the opinions of the members of the national task forces, taking into account their suggestions, directions and observations, and benefiting from their experience in the process of updating and improving work methodology, preparing reports, and proposing new paths, procedures and tools for the next round. This work aimed to improve the content of the reports, enhance their impact, and invest in stimulating digital transformation in support of sustainable and comprehensive economic and social development at the national and regional levels.

The outcomes of these interviews and the discussions that took place between the ESCWA team concerned with the regional digital development report and these countries, and then at the meeting of experts in November 2020, emphasized the need to reconsider the process of preparing NDDRs and the regional Arab Digital Development Report (ADDR). The roles of ESCWA and of countries participating in the process of updating the work have been defined, as follows.

2. ESCWA role

ESCWA plays a leading, directive and coordinating role in preparing NDDRs and ADDR through the following tasks:

In the process of preparing national reviews

- Announcing and launching the preparatory work for NDDRs, with a specific timetable.
- Identifying the concerned authorities in participating countries and formally writing to them, inviting them to participate in preparing a national review,

and motivating them to monitor the necessary human resources and sensitizing decision makers about the importance of this work.

- Providing further guidance on the national coordination mechanism, communication links and data flows at the national level.
- Preparing/updating indicative models on the nature and form of information required in the preparation of national reviews, and adding a section dealing with emerging events and crises such as COVID-19.
- Defining/updating the responsibilities of national focal points in line with the proposed amendments.
- Including a component on capacity-building for experts who participate in the work in a clear and explicit way, given their need to understand the relationship of ICTs with sustainable development.
- Coordinating with and providing support to national teams to organize a workshop for the five clusters included in the pilot model, so as to progress in parallel in the reports and standardize concepts between participating countries.
- Moving towards the gradual use of more quantitative indicators to compare between countries regarding digital development, and adding indicators in new areas such as electronic participation, open data, women and persons with disabilities.
- Using the indicators in the ICT Development Index to measure digital development, and add indicators related to quality of life, a country's economy and the size of the labour market in the field of information technology.
- Using other global indicators to cover various aspects of digital development and, if necessary, creating maturity index for digital development in the Arab region and using it to measure progress in countries and encourage competition between them.
- Increasing the time for gathering information and drafting NDDRs to between six to nine months, so that the resulting reports are of high quality and publishable.

In preparing the regional report

- Preparing the regional ADDR based on the reviews of participating countries; and adopting a frequency of no less than two years and no more than four years for issuing ADDR, as this pace appears to be the most appropriate given the size of the report, the time it requires, and the specificity of the ICT sector, which is developing rapidly.
- Launching officially the regional digital development report by ESCWA and disseminating it widely to generalize the benefit, and sending it to the relevant authority in each of the participating countries, while highlighting the importance of this report and taking its recommendations into consideration.
- Presenting the regional report to the Council of Arab Communications Ministers in its periodic meetings to show what has been achieved and to obtain support from the League of Arab States, and increase the interest of non-participating countries to participate in the future.
- Studying the importance and possibility of developing a smart observatory for Arab digital development by creating an online platform for data with the participation of countries wishing to feed and update it in real time. However, before that, it is imperative to establish a clear and unified methodology for obtaining data and specifying the responsibilities and necessary resources from the authorities concerned with collecting and updating data in participating countries.

3. Role of participating countries

Participating countries play, directly and through focal points, an essential role in preparing NDDRs, particularly in providing data and information required for correct analysis, through the following:

- Appointing focal points and activating their role and responsibilities through the tasks contained in the terms of reference defined by ESCWA.
- Activating and expanding national coordination between public authorities concerned with sustainable development and ICT institutions.
- Forming a central national committee to oversee the preparation of NDDR, and organizing workshops to coordinate and review work.
- Making greater efforts to understand and measure economic indicators, as they are the most difficult for ICT experts.
- Committing to deadlines for collecting information

and formulating the national review, within a period of no less than six months and up to nine months, according to the plan agreed by ESCWA and the national focal points.

- Organizing several national working sessions during the preparation of reviews to collaborate among all experts in overcoming difficulties and clarifying concepts, if necessary.
- Organizing a workshop, in collaboration with ESCWA, to present NDDR and inform decision makers in each country and development policymakers about the importance of the report and involve them in future preparation processes.
- Formally launching NDDRs at the national level and widely disseminating them through official websites, noting that this requires high quality in drafting reports.
- Possibly applying for technical cooperation from ESCWA to develop a national digital agenda based on NDDR, if there is a need.
- Encouraging the participation of countries wishing to feed the digital development observatory, and updating related data and information in real time, after establishing a clear and unified methodology for obtaining these data and specifying the responsibilities and necessary resources from the authorities concerned with collecting and updating data in participating countries.

B. Terms of reference for national focal points

1. Tasks

The main/alternate national focal points for the assignment, subject of these terms of reference, will be entrusted with the following tasks, among others that could be identified during the implementation of this assignment through collaborative work with the coordinator(s) assigned by ESCWA for the 2021 national digital development reviews (NDDRs) and the 2021 Arab Digital Development Report (2021 ADDR):

a. Undertake initial desk-research work and prepare the literature review for NDDR, covering various areas to be tackled in the 2021 NDDR.

b. Based on the ESCWA standard template for the 2021 NDDR, identify the national partners/institutions/experts who could contribute to the preparation and production of NDDR.

c. Strive (with support from ESCWA, if necessary) towards forming a national supervising committee (NSC) comprising key experts from various sectors/institutions to manage the NDDR process and produce a quality NDDR.

d. Coordinate and contribute to the convening (with NSC, if established) of a national workshop/expert group meeting for engaging national partners/stakeholders in the preparation and submission of NDDR.

e. Produce (in collaboration with NSC if established) the requested NDDR, including a collection of national case studies, experiences and best practices, while providing a situational analysis identifying information gaps, opportunities and challenges.

f. Set out a set of policy recommendations in NDDR, based on analysis of the national status, and aimed at enhancing the utilization of appropriate digital technologies for sustainable development.

g. The main/alternate national focal points must integrate the youth dimension and ensure that gender considerations are taken into account throughout the research, including gender analysis and collection and analysis of available sex-disaggregated data. Gender mainstreaming should be considered throughout the preparations, and NDDR should contain gender-sensitive language.[16]

h. The main/alternate national focal points should follow the ESCWA Disability Language Guidelines.[17]

2. Outputs

The main/alternate national focal points will produce the following deliverables:

a. **An inception document,** including a literature review, potential national partners/institutions/experts, the constitution of the national supervising committee (if needed), and a proposed methodology to prepare NDDR, with an envisaged timeline and due date for submission of outputs.
b. **First draft of NDDR**, based on the desk research and data gathered from national sources**, including a situation analysis with identified national information gaps**, opportunities and challenges.
c. A second semi-final draft of NDDR based on the outcome of a national workshop/expert group meeting.
d. **Compiled comments and feedback** from the ESCWA team.
e. **Final version of NDDR**, after responding to the comments/feedback provided by the ESCWA team.
f. An NDDR **dissemination plan**.

3. Follow-up and responsibilities

ESCWA will assign a coordinator for this assignment, subject of these terms of reference, and will follow-up with the main/alternate national focal points on progress towards the successful completion of the assignment. The main/alternate national focal points shall abide by the terms set and fulfil the responsibilities and tasks that are detailed in these terms of reference.

ESCWA commits to providing the main/alternate national focal points with the information needed for this assignment in a timely and transparent manner.

4. Duration and timing

The total duration required for the preparation of NDDR should preferably be within a six-month period but should not exceed nine months. A specific plan should be set with the ESCWA team for the full implementation of these activities.

Annex. ICT core indicators

Table 1. Core indicators on the ICT producing sector[a]

Core indicator		Definitions and notes	2018	2019	2020
ICT1	Proportion of total business sector workforce involved in the ICT sector (expressed as a percentage)	*ICT workforce* (or ICT employment) consists of those persons employed in businesses that are classified as belonging to the ICT sector. *Total business workforce* represents all persons engaged in domestic production in the business sector. In a national accounts' framework, employment can be measured in terms of headcounts, jobs, full-time equivalents or hours worked. The industry-based definition of the ICT sector was based on Revision 3 of the International Standard Industrial Classification (ISIC Rev. 3).[b] This definition was slightly revised in 2002 according to ISIC Rev. 3.1. In 2007, the principles underlying this definition were reviewed leading to a narrower definition. The revised definition is now based on ISIC Rev. 4. The total business sector is defined on an activity (industry) basis per ISIC Rev. 3.1 as divisions 10-67 and 71-74. It therefore excludes: agriculture, hunting, forestry and fishing; real estate activities (because a significant proportion of the value added of the latter consists of imputed rent of owner-occupied dwellings); and community, social and personal services (which consist mainly of non-market activities such as public administration, education and health services). For countries using ISIC Rev. 4, the total business sector			

Core indicator		Definitions and notes	2018	2019	2020
		is not so easily defined. It will most likely include the equivalent divisions 05-36, 41-66, 69-82 and 95 (ISIC Rev. 4, Part II, chap II, pp. 45-61). Discussions are ongoing on whether the total business sector should include some industries that were not included in the ISIC Rev. 3.1 definition of the total business sector (divisions 37-39, 90-93 and 96).			
ICT2	ICT sector share of gross value added (expressed as a percentage of total business sector gross value added)	*Gross value added* for an industry represents its contribution to national GDP. It is sometimes referred to as GDP by industry and is not directly measured (but is estimated in a national accounts' framework). In general, it is calculated as the difference between production (gross output) and intermediate inputs (the energy, materials and services required to produce final output). Definitions of the ICT sector and the total business sector are those mentioned in ICT1.			

a. The core indicators on the ICT producing sector (ICT 1 and ICT 2) presented in table 1 are based on the UNCTAD Manual for the Production of Statistics on Digital Economy, 2020 Revised Edition, table 7.

b. ISIC: International Standard Industrial Classification of All Economic Activities was developed by the United Nations Department of Economic and Social Affairs/Statistics Division to provide a set of activity categories that can be utilized for the collection and reporting of statistics according to such activities. It was first published in 1948, then reissued in several consecutive revisions, the latest of which was ISIC Revision 4 in 2009. Previous versions include: ISIC Revision 2 (1968); ISIC Revision 3 (1990); and ISIC Revision 3.1 (2002).

Table 2. Core indicators on international trade in ICT goods and services[a]

Core indicator		Definitions and notes	2018	2019	2020
ICT3	ICT goods imports as a percentage of total imports	ICT3 is calculated as the quotient of the value of imports of ICT goods divided by the total value of all imports (expressed as a percentage). ICT goods are defined per the OECD's 2003 "A Proposed Classification of ICT Goods", based on the 1996 and 2002 Harmonized System classification (more information can be found on the UNCTAD Classifications). Other concepts are per the UN Comtrade Database, e.g. re-exports and re-imports are not netted out, and data are presented in United States dollars (US$) (converted from country currencies).			
ICT4	ICT goods exports as a percentage of total exports	ICT4 is calculated as the quotient of the value of exports of ICT goods divided by the total value of all exports (expressed as a percentage). ICT goods are defined per the OECD's 2003 "A Proposed Classification of ICT Goods", based on the 1996 and 2002 Harmonized System classification (more information can be found on the UNCTAD Classifications). Other concepts are per the UN Comtrade Database, e.g. re-exports and re-imports are not netted out, and data are presented in US$ (converted from country currencies).			
ICT5	ICT services imports as a percentage of total imports of services	ICT5 is calculated as the quotient of the value of imports of ICT services divided by the total value of imports of all services (expressed as a percentage). *ICT services* are defined by UNCTAD[b] and include telecommunications services, computer services/computer software, computer services/other computer services, licenses to reproduce and/or distribute computer software.			
ICT6	ICT services exports as a percentage of total exports of services	ICT6 is calculated as the quotient of the value of exports of all ICT services divided by the total value of exports of all services (expressed as a percentage).			

a The core indicators on international trade in ICT goods and services (ICT 3, ICT 4, ICT 5 and ICT 6) presented are based on the UNCTAD Manual for the Production of Statistics on Digital Economy, 2020 Revised Edition, tables 9 and 11.

b UNCTAD Manual for the Production of Statistics on Digital Economy, 2020 Revised Edition, p. 62.

Table 3. Core indicators on ICT in education[a]

Core indicator		Definitions and notes	2018	2019	2020
ED1	Proportion of schools with a radio used for educational purposes (by ISCED levels 1 to 3)	Schools offering radio-based education as a percentage of the total number of schools in the country for each ISCED level (1-3).			
ED2	Proportion of schools with a television used for educational purposes (by ISCED levels 1 to 3)	Schools offering television-based education as a percentage of the total number of schools in the country for each ISCED level (1-3).			
ED3	Proportion of schools with a telephone communication facility (by ISCED levels 1 to 3)	Schools with telephone communication facilities as a percentage of the total number of schools in the country for each ISCED level (1-3). Note that the facility should be directly associated with the school. For instance, a mobile phone which is owned by an individual working at the school would not constitute a school telephone communication facility.			
ED4	Student-to-computer ratio (by ISCED levels 1 to 3)	Average number of students per computer in schools that offer computer-assisted instruction by each ISCED level (1-3).			
ED5	Proportion of schools with Internet access, by type (by ISCED levels 1 to 3)	Schools with access to the Internet as a percentage of the total number of schools in the country for each ISCED level (1-3).			
ED6	Proportion of students who have access to the Internet in school (by ISCED levels 1 to 3)	Total number of students with access to the Internet in schools as a percentage of the total number of students in schools offering Internet-assisted instruction in the country by each ISCED level (1-3).			

Core indicator		Definitions and notes	2018	2019	2020
ED7	Proportion of students enrolled by gender at the tertiary level in ICT-related fields[b] (for ISCED levels 5 and 6)	Number of students currently admitted at the tertiary level in ICT-related fields by gender as a percentage of all students enrolled in educational institutions in the country for ISCED levels 5 and 6 (combined).			
ED8	Proportion of ICT-qualified teachers in primary and secondary schools	Number of primary and secondary teachers who have received ICT training, expressed as a percentage of the total number of teachers at those levels of education.			
Reference indicator					
EDR1	Proportion of schools with electricity (by ISCED levels 1 to 3)[c]	Schools with electricity as a percentage of the total number of schools in the country for each ISCED level (1-3).			

a The main classificatory variables used for the core indicators on ICT in education are those set up by the UNESCO Institute for Statistics, in "International Standard Classification of Education, ISCED 1997" (pp. 22-39), which recognizes the following levels of education:
- ISCED 1 – Primary education or first stage of basic education.
- ISCED 2 – Lower secondary or second stage of basic education.
- ISCED 3 – Upper secondary education.
- ISCED 4 – Post-secondary non tertiary education (programmes that lie between the upper-secondary and tertiary levels of education).
- ISCED 5 – First stage of tertiary education (not leading directly to an advanced research qualification).
- ISCED 6 – Second stage of tertiary education (leading to an advanced research qualification).

b ICT-related fields include computer science, computer engineering, information and communication technology, information systems, multimedia systems, ICT management, system support and software development, informatics, etc. Those are represented in the UNESCO International Standard Classification of Education-ISCED 1997 (ISCED was revised and published in 2011: http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf). According to the ISCED fields of education code list, the ICT-related fields come under code 48-Computing, code 21-Arts (audio-visual, media production and design) and code 52-Engineering and engineering trades (electronics and automation). Those fields involve substantial work in understanding the technical aspects of ICT rather than a more generic or basic use of ICT.

c Since electricity is not specifically an ICT commodity, but an important prerequisite for using many ICTs, it is not included in the core list, but added as a reference indicator. International studies reviewed by the UNESCO Institute for Statistics (UIS) revealed that the lack of electricity is such a significant barrier in many developing economies that monitoring trends of its provision is as relevant as monitoring ICT supply and use.

Table 4. Core indicators on ICT in government

Core indicator		Definitions and notes	2018	2019	2020
EG1	Proportion of persons employed in central government organizations routinely using computers	The proportion of persons employed in central government organizations routinely using computers is calculated by dividing the number of persons employed in central government organizations, who routinely use computers, by the total number of persons employed in central government organizations. The result is then multiplied by 100 to be expressed as a percentage. An optional indicator may be calculated separately for males and females (or other individual characteristics).			
EG2	Proportion of persons employed in central government organizations routinely using the Internet	The proportion of persons employed in central government organizations routinely using the Internet is calculated by dividing the number of persons employed by central government organizations, who routinely use the Internet, by the number of persons employed by central government organizations. The result is then multiplied by 100 to be expressed as a percentage. An optional indicator may be calculated separately for males and females (or other individual characteristics).			
EG3	Proportion of central government organizations with a local area network (LAN)	The proportion of central government organizations with a LAN is calculated by dividing the number of central government organizations with a LAN by the number of central government organizations. The result is then multiplied by 100 to be expressed as a percentage.			
EG4	Proportion of central government organizations with an intranet	The proportion of central government organizations with an intranet is calculated by dividing the number of central government organizations with an intranet by the number of central government organizations. The result is then multiplied by 100 to be expressed as a percentage.			
EG5	Proportion of central government organizations with Internet access, by type of access	The proportion of government organizations with Internet access, by type of access, is calculated by dividing the total number of central government organizations with Internet access (by each type of access and 'any' access) by the total number of central government organizations. The result is then multiplied by 100 to be expressed as a percentage. Note that the sum of percentages of all types of access is likely to exceed 100, as many central government organizations will have more than one type of access service.			

Core indicator		Definitions and notes	2018	2019	2020
EG6	Proportion of central government organizations with a web presence	The proportion of central government organizations with a web presence is calculated by dividing the number of central government organizations with a web presence by the number of central government organizations. The result is then multiplied by 100 to be expressed as a percentage.			
EG7	Selected Internet-based services available to citizens, by level of sophistication of service	Unlike indicators EG1 to EG6, this indicator refers to both central and state/provincial levels of government. This is necessary to ensure international comparability as the services selected may be offered by different levels of government across countries. Because the approach taken to measuring Internet-based services is relatively untested and because responses may be somewhat subjective, the indicator is initially considered to be 'experimental'. The indicator is weighted by population in order to show the significance of government Internet-based services at the national level. The indicator is expressed in terms of the percentage of a country's population that is theoretically able to access each Internet-based service. Note that this does not refer to whether a citizen has the equipment or knowledge necessary to access those services, whether s/he needs to access those services or whether s/he directly benefits from them (for example, most of the services are not relevant to children). The ability to access each service will usually be linked to the relevant jurisdiction, for example, a citizen residing in a particular state will theoretically be able to access Internet-based services offered by that state government, though may not need to, wish to, or be technically capable of doing so.			

Source: United Nations Department of Economic and Social Affairs, *United Nations e-Government Survey, 2018*.

Endnotes

1 C1 refers to one of the 11 WSIS action lines.

2 Some sections in the present chapter (including related tables in the annex) may require coordination with the Ministry of Economy and/or economic development agencies.

3 The WSIS Geneva Plan of Action (2003), which consisted of 11 Action Lines (C1 to C11), did not include specific Action Lines for the ICT sector, as it was considered a well-established sector in the developed countries and there was no need to follow up on its progress. Regarding the ESCWA/Arab region, and while growing at a healthy pace during the last decade, the ICT sector as a stand-alone economic sector remains underdeveloped. Both the public and private sectors are acting as consumers of technologies rather than producers and innovators. In this context, and in order to depict the progress made by different actors in building the ICT sector and to measure its contribution to national economies, ESCWA added action lines C12 and C12++ related to the ICT sector.

4 Information on all aspects of digital economy is provided in the Digital Economy Report 2019: Value Creation and Capture-Implications for Developing Countries.

5 Organisation for Economic Co-operation and Development, World Trade Organization and International Monetary Fund, Handbook on Measuring Digital Trade, Version 1, 2020.

6 UNCTAD presents data and figures on trade in ICT goods and services at the national, regional and international levels, available at https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=15850.

7 Organisation for Economic Co-operation and Development, World Trade Organization and International Monetary Fund, Handbook on Measuring Digital Trade, Version 1, 2020.

8 Some sections in the present chapter may require coordination with the Ministry of Social Affairs and/or social development agencies.

9 Governments can issue regulations that make access free or cheaper for specific population groups.

10 The present section (including related tables in the annex) requires coordination with the Ministry of Education and Higher Education.

11 ESCWA continues to assess progress in implementing the Academy of Information and Communications Technology Essentials for Government Leaders in the ESCWA Region (AIGLE), and other initiatives aiming at building the capacity of civil servants.

12 The present section (including related tables in the annex) requires coordination with the authority in charge of the e-government project and with the Presidency of the Council of Ministers.

13 The present section requires coordination with the Ministry of Health.

14 The present section may require coordination with the Ministry of Culture.

15 The present section may require coordination with the Ministry of Information.

16 www.unescwa.org/sites/default/files/services/doc/guidelines_gender-sensitive_language_e-a.pdf.

17 https://archive.unescwa.org/sites/www.unescwa.org/files/page_attachments/guidelines-_disability_language_english_version_0.pdf.

The guiding manual on national digital development reviews comprises technical and organizational guidelines. The technical guidelines include the ESCWA conceptual framework for digital development, and the 2021 national digital development reviews standard template. The regulatory guidelines include the 2021 national digital development reviews process, and terms of reference for national focal points.

It is based on a comprehensive conceptual framework for digital development consisting of five clusters, which was developed by ESCWA in 2018 to include all aspects of digital policies related to strategic frameworks, the State, the economy, society, culture and the media, so as to facilitate follow-up on the action lines of the World Summit on the Information Society and the Sustainable Development Goals.

21-00755