

Digital development measurement and monitoring model











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.

Economic and Social Commission for Western Asia

Digital development measurement and monitoring model



© 2023 United Nations All rights reserved worldwide

Photocopies and reproductions of excerpts are allowed with proper credits.

All queries on rights and licenses, including subsidiary rights, should be addressed to the United Nations Economic and Social Commission for Western Asia (ESCWA), e-mail: <u>publications-escwa@un.org</u>.

The findings, interpretations and conclusions expressed in this publication are those of the authors and do not necessarily reflect the views of the United Nations or its officials or member States.

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Links contained in this publication are provided for the convenience of the reader and are correct at the time of issue. The United Nations takes no responsibility for the continued accuracy of that information or for the content of any external website.

References have, wherever possible, been verified.

Mention of company names and commercial products does not imply the endorsement of the United Nations.

References to dollars (\$) are to United States dollars, unless otherwise stated.

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

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

Website: www.unescwa.org.

2301147E

Preface

The United Nations Economic and Social Commission for Western Asia (ESCWA) developed the digital development measurement and monitoring model in the framework of the Advancing Digital Cooperation and Development – Arab States Action Programme (ADCD-ASAP) that was launched by ESCWA in 2020. This first edition of the digital development measurement and monitoring model is one of the main tools supporting the Arab Digital Agenda (ADA) 2023–2033, the Arab Digital Development Report, and the Collaboration and Partnership Framework to support the ADA implementation. This model aims to analyse the current state of digital development in the Arab countries, explore weaknesses and strengths in this area, and highlight regional gaps and priorities to identify short, medium and long-term targets in order to achieve the 35 goals of the ADA.

This model was developed in consultation and coordination with the Joint Technical Committee and the Core Research and Technical Cooperation Mechanism to develop and implement the Arab information and communication technology (ICT) strategy, or what is known as the ADA. The model is based on the five clusters of ESCWA Digital Development Framework: the national, regional and international strategic frameworks; policies related to infrastructure, governance and the legal environment; policies related to digital economy, employment and trade; policies related to digital transformation and social inclusion; and policies related to culture and media.

The model relied on selected international and Arab indicators, which were used in the situational analysis and the identification of ADA baseline values, goals and targets. The indicators will also be used to track progress in the ADA implementation and periodic update, as outlined in the ADA management and sustainability framework.

The model takes into account the characteristics and priorities of the Arab region in line with the Sustainable Development Goals. It was reviewed for adoption during expert meetings on the ADA and during the preparation for the second edition of the Arab International Digital Cooperation and Development Forum.

The digital development measurement and monitoring model provides background information and an identification card for each indicator, and clarifies its relation with sustainable development indicators and other international indicators. The model will be further developed and updated in cooperation with the Arab States members of ESCWA and the organizations concerned with this project through specialized working groups that will be formed in the coming period. The working groups will keep abreast of developments, add, delete or identify alternative international and Arab indicators when needed, and issue the identification cards of indicators including their metadata and measurement methods.

Contents

1. Measurement tools	5
A. Data sources	6
B. Collection of indicators	6
C. Symbols of indicators used in the Arab Digital Agenda	
3. Arab indicators used in the Arab Digital Agenda	25
3. Arab indicators used in the Arab Digital Agenda	34
Annex. The measurement and monitoring model and the structure of its five clusters	34

Measurement tools

1.

6

1. Measurement tools

The measurement and monitoring process is an essential part of the follow-up, management and sustainability mechanisms associated with the ADA. It helps determine the extent to which goals and targets have been achieved during the ADA subsequent periodic review.

The digital development measurement and monitoring model presented in this document is based on a set of indicators accompanied by a reference guide, many of which have been used during the two main phases of the ADA lifecycle:

- The analysis phase that allows monitoring and analysing the current situation, discovering weaknesses and strengths, and identifying gaps.
- The implementation phase where indicators are used to track progress in the ADA implementation and identify baseline values for indicators with a view to reaching them in the middle and final phases of the ADA lifecycle, within the management and sustainability framework.



🕒 A. Data sources

The number of indicators included in the digital development measurement and monitoring model reached 85, and they are divided into two groups:

• The first group contains 24 international indicators (28 per cent), which are measured and disseminated

by international organizations, mainly the specialized United Nations organizations.

• The second group includes 61 Arab indicators (72 per cent), which will be collected through the national digital development reviews of Arab countries.

B. Collection of indicators

The values of indicators for each country are captured through national observatories to be established during the first implementation phase of the ADA. According to the mechanisms in place in each country, these observatories collect the necessary data to calculate the value of indicators derived from national digital development reviews and relevant international indicators. All observatories issue the values of national indicators according to the National Digital Development Reviews guiding manual, in line with the indicators contained in the digital development measurement and monitoring model. This process allows issuing periodic monitoring reports to track the implementation of the ADA goals. These reports will form one of the elements of the management and sustainability framework that assesses the ADA implementation effectiveness.

🗩 C. Symbols of indicators used in the Arab Digital Agenda

Each symbol of the indicators used in the ADA consists of two parts: the prefix and a set of digits, connected with a dash (_), as follows: prefix_digits (for example, DDR_1.2.3.4).

1. The prefix

- INT: This prefix shows that the indicator is derived from reports or databases belonging to an international organization (INTernational), notably the United Nations, the International Telecommunication Union (ITU), the World Bank, the United Nations Educational, Scientific and Cultural Organization (UNESCO), ESCWA and others.
- DDR: This prefix shows that the indicator is derived from Digital Development Reviews conducted periodically by the Arab countries participating in this project based on a specific definition that will be issued at a later period.

2. The digits

- The first digit refers to the cluster¹ to which this indicator belongs (DDR_1.2.3.4).
- The second digit refers to the goal assigned to the cluster indicated in the first digit (DDR_1.2.3.4).
- The third digit refers to the target of the goal indicated in the second digit (DDR_1.2.3.4).

• The fourth digit refers to the indicator that measures/ monitors the target indicated in the third digit (DDR_1.2.3.4).



7

^{1.} The ESCWA Digital Development Framework identified five clusters.

2.

International indicators used in the Arab Digital Agenda 10

2. International indicators used in the Arab Digital Agenda

This section reviews the selected international indicators that the members of the Arab Working Group on the Arab ICT Strategy agreed to use in the measurement and monitoring process. There are currently 24 indicators. This section also includes an identification card for each indicator, including the indicator name, source, the number of Arab countries measuring it in the latest edition and the overall average for the Arab region (if available). In addition to this background information for each indicator, the identification card contains information on its relation to sustainable development indicators, ITU indicators and the core list of ICT indicators of the Partnership on Measuring ICT for Development.

			- C C C C C C C C C C C C C C C C C C C		(%)	G
	Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
	INT_2.1.2.1	Digital maturity ranking according to the ICT Regulatory Tracker	ΙΤυ	22 (2020)	63.41 (Level 2)	Yes

Indicator: Digital maturity ranking according to the ICT Regulatory Tracker.

Definition: refers to the digital maturity ranking of a country according to the ICT Regulatory Tracker, which was developed by the ITU as an evidence-based tool to help decision-makers and regulators understand the rapid evolution of ICT regulation. The indicator captures changes in the ICT regulatory environment, and allows comparison and identification of trends in ICT legal and regulatory frameworks. It helps track progress and identify gaps in regulatory frameworks, catalyzing regulatory reform that will build an inclusive and vibrant ICT sector.

The ICT Regulatory Tracker consists of a scale based on 50 sub-indicators where each country can score two points (maximum value) for each sub-indicator and obtain an overall score out of 100. Each country is classified according to four levels, as follows:

O Level 1: score ≥ 0.

0-

- O Level 2: score ≥40.
- O Level 3: score ≥ 70.
- Level 4: score \geq 85 \leq 100.

Source: ITU – Third edition of the Global ICT Regulatory Outlook 2020

		(ching)			C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_2.1.2.2	Country readiness for digital transformation according to the Benchmark of fifth- generation collaborative digital regulation	ITU	22 (2021)	38.40 (Transitional level)	Yes

Indicator: Country readiness for digital transformation according to the Benchmark of fifth-generation collaborative digital regulation (G5 Benchmark).

• **Definition:** The ITU G5 Benchmark is part of the continuous technological development that keeps pace with the evolution of successive "generations", from the control approach for public monopolies to one of collaboration across institutions and stakeholders to overseeing the development of cooperative regulation for the digital economy.

This indicator measures the evolution of regulatory and policy frameworks, and helps countries map progress in the era of digital transformation to develop a competitive digital economy. It allows regulators and policymakers to develop and track key policies, as well as adopt a common language and facilitate modelling at the country level.

The indicator tracks the evolution of data from 70 indicators, grouped around 4 main pillars:

- National collaborative governance.
- O Policy design principles.
- O Digital development toolbox.
- Digital economic policy agenda.

The indicator provides regulators and policymakers with a snapshot of each country's status in terms of digital transformation. Accordingly, each country is ranked according to four levels of readiness for digital transformation, as follows:

- O Limited level (scores under 30).
- Transitional level (scores between 30 and 60).
- Advanced level (scores between 60 and 80).
- Leading level (scores between 80 and 100).

Source: ITU - Benchmark of fifth-generation collaborative digital regulation 2021.



		<u> </u>			C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_2.3.1.1	Percentage of individuals using the Internet	ITU	21 Different years (2017–2021)	70.3 (2022)	Yes

O- Indicator: Percentage of individuals using the Internet.

• **Definition:** The indicator related to the percentage of individuals using the Internet can be calculated based on estimates and/or data from national surveys of households and individuals. This percentage should be calculated based on the total number of the country's population or at least individuals aged 5 years and over. If this number is not available (i.e. the target population represents a more limited age group), the full population should be estimated. If this is not possible at this stage, reference must be made to the age group used to calculate the population (e.g., population over 10 years of age; or population aged between 15 and 74 years). In the absence of data from household and individual surveys, it is recommended to adopt a population estimate with a detailed definition of the computational methodology.

- O Relation to sustainable development indicators: 17.8.1.
- O Relation to core ICT indicators: HH7.
- Relation to ITU indicators: (i99H).

Source: ITU - World Telecommunication/ICT Indicators Database 2022 (26th edition - December 2022).



		Ê		(The second seco	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator at the end of the year	Overall average (percentage)	ls the indicator updated?
INT_2.3.2.1	Fixed broadband Internet subscriptions per 100 inhabitants, broken down by speed	ITU	22 Different years (2020-2021)	Not applicable	Yes

O- Indicator: Fixed broadband Internet subscriptions per 100 inhabitants, broken down by speed.

O- **Definition:** refers to the number of fixed broadband subscriptions to the public Internet (i4213tfbb) with download speeds equal to or greater than 256 kbit/s, split by advertised download speed. This includes cable modem, digital subscription line, fibre-to-the-home/building, other fixed broadband subscriptions, satellite broadband and terrestrial fixed wireless broadband. The indicator can be broken down as follows:

- O Subscriptions from 256 kbit/s to less than 2 Mbit/s.
- Subscriptions from 2 Mbit/s to less than 10 Mbit/s.
- O Subscriptions equal to or greater than 10 Mbit/s.
- Relation to sustainable development indicators: 17.6.1.
- <u>Relation to core ICT indicators: A3</u>.
- O Relation to ITU indicators: (i4213tfbb), (i4213_256to2), (i4213_2to10), (i4213_G10).

Source: ITU – <u>Handbook for the collection of administrative data on telecommunications/ICTs</u> – 2020 edition, p. 83.

		Ê		75	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_2.3.3.1	Percentage of the population covered by at least a 4G mobile network	ITU	19 Different years (2020–2021)	76.3 (2022)	Yes

O- Indicator: Percentage of the population covered by at least a 4G mobile network.

O- Definition: refers to the percentage of inhabitants living within range of a mobile-cellular signal (4G/LTE), irrespective of whether or not they are subscribers.

The indicator is calculated by dividing the number of inhabitants covered by at least a mobile-cellular signal (4G/LTE) by the total population and multiplying by 100.

- Relation to sustainable development indicators: 9.c.1.
- Relation to core ICT indicators: A5.
- Relation to ITU indicators: (i271GA).

Source: ITU - Handbook for the collection of administrative data on telecommunications/ICTs - 2020 edition, p. 59.

		Ê		(%)	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (kbit/s)	ls the indicator updated?
INT_2.4.1.1	International bandwidth per Internet user (bits/sec/person)	ITU	21 Different years (2017–2021)	168.3 (2022)	Yes

O- Indicator: International bandwidth per Internet user (bits/sec/person).

O- Definition: The average use of all international links, including fibre-optic cables, radio links and traffic processed by satellite ground stations and teleports to orbital satellites (expressed in Mbit/s). The average should be calculated over twelve months of the reference year. If the traffic is asymmetric (i.e. different incoming and outgoing traffic), then the highest value out of the two should be provided.

All international links used by all types of operators, namely fixed, mobile and satellite operators, should be taken into account. The combined average usage of all international links can be reported as the sum of the average usage of each individual link.

The international bandwidth per Internet user is computed by dividing the amount of bandwidth (in bits/s) by the total population.

- Relation to core ICT indicators: A5.
- Relation to ITU indicators: (i4214u).

Source: ITU - Handbook for the collection of administrative data on telecommunications/ICTs - 2020 edition, p. 83.

		Ê		(%)	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	Is the indicator updated?
INT_2.7.1.3	Number of Arab countries classified as at least "adequate" by the European Union or any other entity in data protection	European Union	Not available	Not applicable	Yes

O- Indicator: Number of Arab countries classified as at least "adequate" by the European Union or any other entity in data protection.

O- **Definition:** used as an alternative indicator for tracking purposes only, and classifies the adequacy of the level of data protection according to the European Union standards.

To ensure a level of data protection similar to that of the European Union, any non-European Union country seeking to transfer data from the European Union should be classified as at least "adequate" according to the European Union standards.

The adequacy of the level of data protection is one of the tools available under the General Data Protection Regulation (GDPR) for the transfer of data from the European Union to third countries, ensuring a level of data protection similar to that of the European Union.

Source: The European Union, International dimension of data protection - Adequacy decisions.

		<u>e</u>		(%)	C	
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?	
INT_2.8.4.1	Global Cybersecurity Index	ITU	22 (2020)	53 (2020)	Yes	
Indicator: Global Cybersecurity Index						

O-

Definition: The Global Cybersecurity Index aims to foster a global culture of cybersecurity and its integration at the core of ICTs. It is a composite index of indicators that monitors the level of cybersecurity commitment in the five pillars of the Global Cybersecurity Agenda: legal measures, technical measures, organizational measures, capacity development measures, and cooperation measures.

Source: ITU - Global Cybersecurity Index 2020.

				%	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_3.3.1.1	Research and development expenditure (as a proportion of GDP)	UNESCO Institute for Statistics	16 Different years (2020)	0.64 (2020)	Yes

O- Indicator: Research and development expenditure (as a proportion of GDP).

O- Definition: This indicator refers to gross domestic expenditure on research and development as a percentage of the gross domestic product (GDP). It measures total domestic expenditure on research and development conducted in the national territory during a specified reference period expressed as a percentage of the national territory's GDP.

Source: UNESCO Institute for Statistics - <u>Statistics of the UNESCO Institute for Statistics</u>.



		<u>e</u>		(%)	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_3.3.2.1	Patent filings (as a percentage of the global total)	World Intellectual Property Organization (WIPO)	17 Different years (2021)	0.27 (2021)	Yes

O- Indicator: Patent filings (as a percentage of the global total).

O- Definition: refers to the percentage of patent filings in the country out of the total patent filings in the world. Patent filings include those submitted by nationals of a country, whether resident in the country or abroad.

5) Number of Arab countries Overall average Is the indicator Symbol Indicator name Source measuring the indicator in (percentage) updated? the latest edition INT_3.3.3.1 WIPO **Global Innovation Index** 14 (2022) 25.3 (2022) Yes

Source: WIPO - Intellectual Property Statistics.

O- Indicator: Global Innovation Index.

O- Definition: The Global Innovation Index was developed to monitor the latest global innovation trends. It ranks the performance of the innovation ecosystem in 132 countries around the world, highlighting the strengths and weaknesses of innovation as well as identifying gaps in innovation metrics.

The Global Innovation Index is based on two sub-indices: the innovation input sub-index (five inputs that capture elements of the national economy that enable innovative activities) and the innovation output sub-index (which represents the results of innovative activities within the economy). The weighting of output and input sub-indices was adopted equally in calculating the overall index scores.

This composite index was developed using a rich dataset of 81 indicators from international, public and private sources. Source: WIPO – <u>Global Innovation Index 2022</u>.



					C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	Is the indicator updated?
INT_3.7.1.1	ICT goods exports (as a percentage of total goods exports)	The World Bank	7 Different years (2021)	4.1	Yes

O- Indicator: ICT goods exports (as a percentage of total goods exports).

O-Definition: refers to the value of exports of all ICT goods as a percentage of the total value of exports.

ICT goods have been identified according to the Organisation for Economic Cooperation and Development classification, which is based on the 2017 World Customs Organization Harmonized System classification, as follows:

- Computers and peripheral equipment.
- Communication equipment.
- Consumer electronic equipment.
- Electronic components.
- Miscellaneous.

Software is excluded from this classification.

Source: World Bank, World Bank Open Database.

				(The second seco	6
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_3.10.1.1	Proportion of youth and adults with ICT skills, by type of skill	ITU	14 Different years (2014-2021)	Not applicable	Yes

O- Indicator: Proportion of youth and adults with ICT skills, by type of skill.

O- Definition: refers to individuals who have carried out certain ICT activities using computers in the last three months. The indicator is expressed as a percentage.

• Relation to sustainable development indicators: 4.4.1.

• Relation to core ICT indicators: HH15.

Source: ITU - Manual for measuring ICT access and use by households and individuals - 2020 Edition, p. 101.

		<u>e</u>			C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	Is the indicator updated?
INT_4.1.1.1	Cost of mobile broadband Internet access as a percentage of monthly GNI per capita	ITU	20 (2021)	1.2	Yes

O- Indicator: Cost of fixed broadband Internet access as a percentage of monthly GNI per capita.

- O Definition: This cost refers to the price of a monthly subscription to an entry-level fixed-broadband plan. The indicator is calculated as a percentage of a country's average monthly GNI per capita and is expressed in dollars according to purchasing power parity. For comparability reasons, the fixed-broadband basket is based on a monthly data usage of a minimum of 5 GB. For plans that limit the monthly amount of data transferred by including data volume caps below 5 GB, the cost of the additional bytes is added to the basket. The minimum speed of a fixed broadband connection is 256 kbit/s.
 - Relation to ITU indicators: (i4213_5GB).
 - Relation to core ICT indicators: A7.

Source: ITU - Measuring digital development: ICT price trends 2020, p. 59.



				(%)	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	Is the indicator updated?
INT_4.1.1.2	Cost of fixed broadband Internet access as a percentage of monthly GNI per capita	ITU	18 (2021)	3.3	Yes

O- Indicator: Cost of fixed broadband Internet access as a percentage of monthly GNI per capita.

O- Definition: This cost refers to the price of a monthly subscription to an entry-level fixed-broadband plan. The indicator is calculated as a percentage of a country's average monthly GNI per capita and is expressed in dollars according to purchasing power parity. For comparability reasons, the fixed-broadband basket is based on a monthly data usage of a minimum of 5 GB. For plans that limit the monthly amount of data transferred by including data volume caps below 5 GB, the cost of the additional bytes is added to the basket. The minimum speed of a fixed broadband connection is 256 kbit/s.

• Relation to ITU indicators: (i4213_5GB).

O Relation to core ICT indicators: A7.

Source: ITU - Measuring digital development: ICT price trends 2020, p. 59.

		<u>F</u>			0
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_4.2.1.1	Gender parity score in Internet use	ITU	14 Different years (2017–2021)	87 (2022)	Yes

O- Indicator: Gender parity score in Internet use.

O- Definition: This score is calculated as the proportion of women who use the Internet divided by the proportion of men. A score less than one indicates that men use the Internet more than women, while a score greater than one indicates the opposite. A score between 0.98 and 1.02 indicates gender parity.

Source: ITU - Measuring digital development: Facts and Figures 2022; https://www.itu.int/en/ITU-D/Statistics/Documents/statistics/2022/July/ IndividualsUsingInternetByGender.xlsx.

		- Contraction of the contraction		(%)	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_4.2.2.1	Percentage of Internet users in urban areas compared to those in rural areas	ITU	7 (2021)	1.42 (2022)	Yes

O- Indicator: Percentage of Internet users in urban areas compared to those in rural areas.

O- Definition: This percentage is calculated by dividing urban Internet users by rural Internet users. A percentage close to 1 indicates an equal number of urban and rural Internet users, while a percentage above 1 indicates that urban Internet users outnumber rural Internet users.

Source: ITU - Measuring digital development: Facts and Figures 2022.

		- AP		(%)	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_4.3.2.1	Digital Accessibility Rights Evaluation (DARE) Index	Global Initiative for Inclusive ICTs (G3ict)	15 (2020)	38.67 (2020)	Yes

O- Indicator: Digital Accessibility Rights Evaluation (DARE) Index.

• **Definition:** It is a benchmarking tool, developed by G3ict, for disability advocates, Governments, civil society, international organizations and policymakers to trace country progress in making ICT accessible for all, in compliance with Article 9 of the Convention on the Rights of Persons with Disabilities.

This indicator measures three categories of variables in each country: State obligations (laws, regulations, policies and programmes), State capacity to implement (organization, operations and resources), and actual digital accessibility outcomes for persons with disabilities in 10 areas of products and services.

Source: Global Initiative for Inclusive ICTs (G3ict), Digital Accessibility Rights Evaluation Index 2020.

		(C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_4.5.1.1	Proportion of schools with Internet access	UNESCO Institute for Statistics	14 (2020)	Not applicable	Yes

O- Indicator: Proportion of schools with Internet access.

O- **Definition:** The proportion of schools with Internet access as a percentage of the total number of schools in the country, for levels 1–3 of the International Standard Classification of Education. This indicator aims to measure the availability of Internet access in schools.

Internet access patterns:

- Fixed broadband.
- Fixed narrowband.
- Both fixed narrowband and broadband.
- O Relation to sustainable development indicators: 4.a.1.
- Relation to core ICT indicators: ED5.

Source: UNESCO Institute for Statistics – <u>Statistics of the UNESCO Institute for Statistics; Guide to measuring</u> Information and Communication Technologies (ICT) in education.

		- Contraction of the contraction		(%)	G
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_4.7.1.1	E-Government Development Index	United Nations Department of Economic and Social Affairs	21 (2022)	0.61 (2022)	Yes

O- Indicator: E-Government Development Index.

O- Definition: This indicator is used to measure the readiness and capacity of national institutions to use ICTs to deliver public services. It is a composite index calculated on the basis of the weighted average of three normalized indices where one-third is derived from the Telecommunications Infrastructure Index, one-third from the Human Capital Index and one-third from the Online Service Index.

Source: United Nations, e-Government Survey, 2022.

21

		<u>e</u>			C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_4.7.3.1	Government Electronic and Mobile Services Index (GEMS)	ESCWA	13 (2021)	46.28 (2021)	Yes

O- Indicator: Government Electronic and Mobile Services Index (GEMS).

O Definition: GEMS aims to measure the maturity of government services provided through electronic portals and mobile applications in the Arab States. It seeks to bridge the gap in most of the international indicators, related to service maturity, service usage and user satisfaction. To this end, 84 government services have been identified, and it is necessary for each country to deliver them electronically for individuals and businesses. The principle of life cycle has been adopted in service selection, meaning that any individual needs these services at different stages of his life, and any company requires them since its establishment until it is closed down.

Source: United Nations - ESCWA, Government Electronic and Mobile Services (GEMS-2021) Maturity Index, 2022.

		<u></u>		(%)	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_5.1.1.1	Percentage of digital Arabic content on the Internet	To be determined	-	-	-

O- Indicator: Percentage of digital Arabic content on the Internet.

O Definition: This indicator represents the percentage of digital content in Arabic on the Internet out of the total digital content in all other languages. Digital Arabic content is defined as any content that is digitally available in Arabic on the Internet. It includes websites, portals and e-services as well as audio and video content. It also includes open source software, databases and products that promote Arabic language functions and tools, such as Arabic interfaces including word processing software, trading software in Arabic, speech and character recognition software, search and translation engines, etc.

Source: Not yet determined. This indicator will be developed in collaboration with partners and stakeholders involved in the ADA development and implementation.

					C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
INT_5.1.2.1	Percentage of websites that provide content in the Arabic language	W3Techs, a division of Q-Success	Not applicable	0.9	Yes

O- Indicator: Percentage of websites that provide content in the Arabic language.

O Definition: This indicator shows the percentages of websites that provide content in different languages. W3Techs, a division of Q-Success for web-based services, conducts technical surveys of the world's websites to extract the percentage of websites in the majority of world languages. As part of the survey, a website is relevant if it includes some meaningful content or functionality. The survey excludes websites that do not contain useful content, such as those that only display the default web server page. It also excludes websites that are primarily duplicates of other sites. It includes websites, not individual web pages. Subdomains are not considered separate sites. For example, sub1.example.com and sub2.example.com are the same because the two sites belong to the same root site, which is example.com.

		<u>e</u>			C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	Is the indicator updated?
INT_5.2.1.1	Number of Arab countries that have a country code top-level domain registered in Arabic	Internet Assigned Numbers Authority (IANA)	15 (2022)	Not applicable	Yes

O- Indicator: Number of Arab countries that have a country code top-level domain registered in Arabic.

O- Definition: The country code top-level domains (ccTLDs) in Arabic refer to top-level domains that are used or written in Arabic script, such as السعودية (.saudi arabia).

Source: <u>https://w3techs.com/technologies/overview/content_language</u>.

6

 \odot

>

•

Arab indicators used in the Arab Digital Agenda



3.

26

3. Arab indicators used in the Arab Digital Agenda

The following paragraph reviews the list of Arab indicators used in the ADA, which currently number 61 indicators measured directly through national digital development reviews in the Arab countries and the ADA follow-up, management and sustainability mechanisms.

These indicators will be further developed in cooperation with the Arab States members of ESCWA and the

organizations concerned with this project through specialized working groups that will be formed in the coming period. The working groups will identify these indicators (or possible alternative international indicators) and issue their identification cards including their metadata and measurement methods.

Indicator symbol	Indicator name
DDR_1.1.1.1	Number of Arab countries that have comprehensive national digital strategies or digital development agendas
DDR_1.1.2.1	Number of Arab countries that have an ICT sector strategy
DDR_1.1.3.1	Number of Arab countries that have a sectoral policy/plan for digital learning
DDR_1.1.3.2	Number of Arab countries that have a sectoral policy/plan for the digital economy
DDR_1.1.3.3	Number of Arab countries that have a sectoral policy/plan for digital health
DDR_1.1.3.4	Number of Arab countries that have a sectoral policy/plan for smart agriculture
DDR_1.1.3.5	Number of Arab countries that have a sectoral policy/plan for smart transport
DDR_1.1.4.1	Number of Arab countries that have a national policy/plan for cloud computing
DDR_1.1.4.2	Number of Arab countries that have a national policy/plan for fintech
DDR_1.1.4.3	Number of Arab countries that have a national policy/plan for cybersecurity
DDR_1.1.4.4	Number of Arab countries that have a national policy/plan for the Internet of Things
DDR_1.1.4.5	Number of Arab countries that have a national policy/plan for artificial intelligence
DDR_1.1.4.6	Number of Arab countries that have a national policy/plan for the metaverse and virtual reality
DDR_1.1.5.1	Number of Arab countries that periodically monitor and review the status of digital development at the national level
DDR_2.1.1.1	Number of Arab countries that have special controls to encourage competition and control exclusivity
DDR_2.2.1.1	Number of telecommunication or other digital services available regionally
DDR_2.2.1.2	Number of Arab countries that have regulatory agreements for telecommunications or other digital services exchanged with other Arab countries

Indicator symbol	Indicator name
DDR_2.5.1.1	Number of Arab countries that have at least one national Internet exchange point
DDR_2.5.2.1	Number of regional IXPs
DDR_2.5.2.2	Number of global content providers connected to regional IXPs
DDR_2.5.3.1	Number of Arab countries connected to a regional IXP
DDR_2.5.4.1	Percentage of intraregional data transferred without the need for international networks
DDR_2.6.1.1	Number of Arab countries that have an effective national digital signature and certification authority
DDR_2.6.2.1	Number of Arab countries that have mutual recognition agreements for digital signature services with other Arab countries
DDR_2.7.1.1	Number of Arab countries that have updated laws for personal data protection
DDR_2.7.1.2	Number of Arab countries that have personal data protection authorities
DDR_2.8.1.1	Number of Arab countries that have updated laws to combat cybercrime and cybersecurity
DDR_2.8.2.1	Number of Arab countries that have implemented the Arab Convention on Combating Information Technology Offences
DDR_2.8.3.1	Number of Arab countries that have a national cybersecurity strategy
DDR_2.8.5.1	Number of Arab countries that have national computer emergency response centres
DDR_2.8.6.1	Number of Arab countries that have cooperation agreements with other Arab countries for coordination between national computer emergency centres
DDR_3.1.1.1	Number of Arab countries that have adopted a unified international classification of the registers of companies operating in the fields of ICT
DDR_3.1.2.1	Number of Arab countries that have adopted an Arab framework to facilitate access to statistical data on companies working in the ICT field
DDR_3.2.1.1	Value of the tangible and intangible assets of companies operating in the ICT sector
DDR_3.2.2.1	The contribution of venture capital investments in ICT sector companies
DDR_3.4.1.1	Number of Arab countries conducting periodic national measurements of the contribution of the ICT sector to the national economy
DDR_3.5.1.1	Number of companies specialized in emerging technologies (in ICT fields) in each country
DDR_3.5.2.1	Percentage of foreign direct investment in ICT companies
DDR_3.5.3.1	Share of the ICT sector's contribution to GDP
DDR_3.6.1.1	Number of Arab countries that have approved plans to introduce ICT in manufacturing, agriculture, trade and other productive sectors
DDR_3.8.1.1	Transactions using e-commerce mechanisms as a proportion of GDP in each country

27

Indicator symbol	Indicator name
DDR_3.8.1.2	Value of business-to-business (B2B) e-commerce transactions as a proportion of all e-commerce transactions
DDR_3.8.1.3	Number of Arab countries that have laws and/or regulatory frameworks related to e-commerce and e-payment
DDR_3.9.1.1	Number of Arab countries that have regulations for digital currencies
DDR_3.11.1.1	Remote work opportunities as a percentage of all work opportunities in each country
DDR_3.12.1.1	Percentage of companies that have ICT training programmes in each country
DDR_4.3.1.1	Number of Arab countries that have a national digital accessibility policy for persons with disabilities
DDR_4.4.1.1	Number of Arab countries with programmes to empower and protect youth in their meaningful use of the Internet
DDR_4.5.1.2	Percentage of health centres with Internet access
DDR_4.6.1.1	Percentage of those enrolled in e-learning and virtual learning in the country compared to total educational enrolment
DDR_4.7.2.1	Existence/development of a national interoperability framework in Arab countries
DDR_4.7.4.1	Number of Arab countries that have initiatives in the field of open data
DDR_4.8.1.1	Number of Arab countries that have national data centres with cloud environments to provide e-government services
DDR_4.8.2.1	Number of regional data centres
DDR_4.9.1.1	Number of Arab countries using ICT in any e-health field
DDR_5.2.2.1	Percentage of domain names registered in Arabic in each country
DDR_5.3.1.1	Number of Arab countries that have strategies to achieve convergence between ICT and the media
DDR_5.3.2.1	Number of Arab countries that have platforms specialized in providing access to media content
DDR_5.3.3.1	Number of Arab countries that have laws dealing with issues of publishing on the Internet
DDR_5.3.4.1	Number of Arab countries that have a licensing system that covers issues of access to media content through telecommunications networks
DDR_5.4.1.1	Number of websites specialized in detecting fake news on the Internet

					C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
DDR_1.1.1.1	Number of Arab countries that have comprehensive national digital strategies or digital development agendas	National Digital Development Assessments	12 (2022)	55 (2022)	Yes

O- Indicator: Number of Arab countries that have comprehensive national digital strategies or digital development agendas.

O Definition: refers to the number of Arab countries that have issued comprehensive national digital strategies or digital development agendas, meaning every comprehensive national strategy based on ICTs. The indicator should specify the date of issuance or adoption of the strategy and its current status, and describe progress and achievements towards its implementation.

Source: ESCWA - National Digital Development Reviews 2022.

		<u>e</u>			C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	Is the indicator updated?
DDR_1.1.2.1	Number of Arab countries that have an ICT sector strategy	National digital development reviews	13 (2022)	59 (2022)	Yes

O- Indicator: Number of Arab countries that have an ICT sector strategy.

O- **Definition:** refers to the number of Arab countries that have an ICT sector strategy, meaning every strategy for the development of the ICT sector as a stand-alone economic sector that produces a range of ICT goods and services. The indicator should specify the date of issuance or adoption of the strategy and its current status, and describe progress and achievements towards its implementation.

Source: ESCWA, National Digital Development Reviews 2022.

30

		Ê		%	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
DDR_1.1.5.1	Number of Arab countries that periodically monitor and review the status of digital development at the national level	National digital development reviews	12 (2022)	55 (2022)	Yes

O- Indicator: Number of Arab countries that periodically monitor and review the status of digital development at the national level.

O- Definition: refers to the number of Arab countries that periodically monitor and review the status of digital development at the national level. This means Arab countries that have successfully completed their national digital development review reports in cooperation with ESCWA within the framework of the Digital Development Project, which is periodically implemented.

Source: ESCWA, Digital Development Project 2022.

			Ê		%	C
Sy	/mbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
D	DR_2.5.1.1	Number of Arab countries that have at least one national Internet exchange point	National digital development reviews	15 (2022)	68 (2022)	Yes

O- Indicator: Number of Arab countries that have at least one national Internet exchange point.

O- Definition: refers to the number of Arab countries that have at least one national Internet exchange point, i.e. a physical place in the national Internet infrastructure where different Internet service providers meet to exchange traffic between them.

		Ê		(75)	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
DDR_2.7.1.1	Number of Arab countries that have updated laws for personal data protection	National digital development reviews	10 (2022)	45 (2022)	Yes

Source: ESCWA, National Digital Development Reviews 2022, as well as desk research.

O- Indicator: Number of Arab countries that have updated laws for personal data protection.

O- Definition: refers to the number of Arab countries that have updated laws for personal data protection. This means Arab countries that provide a supportive and transparent legal and regulatory framework that ensures security, privacy, protection of personal data and confidentiality of information.

		(A)			C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
DDR_2.8.1.1	Number of Arab countries that have updated laws to combat cybercrime and cybersecurity	National digital development reviews	12 (2022)	55 (2022)	Yes

O- Indicator: Number of Arab countries that have updated laws to combat cybercrime and cybersecurity.

O- Definition: refers to the number of Arab countries that have updated laws to combat cybercrime and cybersecurity by developing a list of laws on cybercrime (law number, year of adoption and URL) and identifying national measures to prevent, detect and prosecute cybercrime, and prevent the misuse of ICTs. The indicator also describes efforts to combat spam at the national and international levels. "Updated" means that laws should not be more than 10 years old.

Source: ESCWA, National Digital Development Reviews 2022, as well as desk research.

					C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
DDR_2.8.2.1	Number of Arab countries that have implemented the Arab Convention on Combating Information Technology Offences	National digital development reviews	7 (2022)	32 (2022)	Yes

O- Indicator: Number of Arab countries that have implemented the Arab Convention on Combating Information Technology Offences.

O- Definition: refers to the number of Arab countries that have implemented the Arab Convention on Combating Information Technology Offences. This means Arab countries that have ratified the convention and put it into effect. This convention was adopted in 2010 at the initiative of the League of Arab States and in cooperation with the Arab Technical Committee for Combating Information Technology Crimes. This regional convention aims to enhance cooperation between Arab countries in the field of combating information technology crimes and protecting electronic systems and data.

		e geo		73	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
DDR_2.8.3.1	Number of Arab countries that have a national cybersecurity strategy	National digital development reviews	11 (2022)	50 (2022)	Yes

O- Indicator: Number of Arab countries that have a national cybersecurity strategy.

O- Definition: refers to the number of Arab countries that have a national cybersecurity strategy. The indicator should include information about the approved strategy, an overview of its mission and vision, the year of its adoption, its latest update, an assessment of its current status, the pace of its implementation and the government entity responsible for implementing it.

Source: ESCWA, National Digital Development Reviews 2022, as well as desk research.

				(%)	C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
DDR_2.8.5.1	Number of Arab countries that have national computer emergency response centres	National digital development reviews	17 (2022)	77 (2022)	Yes

O- Indicator: Number of Arab countries that have national computer emergency response centres.

O- **Definition:** refers to the number of Arab countries that have a national computer emergency response centre. The indicator should include information about the national centre, its tasks, the number of incidents recorded in it, and the plans or initiatives implemented to raise awareness of emergencies related to Internet and information security. It outlines the cybersecurity measures taken to ensure the security of online transactions.

The national computer emergency response centre is an institution or ad hoc authority that responds to incidents and emergencies related to the security and integrity of information systems and information technology infrastructure. This centre aims to coordinate and manage the response of the Government or State to cyber threats, hacking and attacks on critical government infrastructure and resources.

		e construction of the cons			C
Symbol	Indicator name	Source	Number of Arab countries measuring the indicator in the latest edition	Overall average (percentage)	ls the indicator updated?
DDR_2.8.6.1	Number of Arab countries that have cooperation agreements with other Arab countries for coordination between national computer emergency centres	National digital development reviews	12 (2022)	55 (2022)	Yes

O- Indicator: Number of Arab countries that have cooperation agreements with other Arab countries for coordination between national computer emergency centres.

O-Definition: refers to the number of Arab countries that have cooperation agreements with other Arab countries for coordination between national computer emergency centres. The indicator should include information on cooperation agreements, the date they were signed or concluded, the country or countries covered by the agreement, and the coordination mechanisms adopted between national computer emergency centres.

The national computer emergency response centre is an institution or ad hoc authority that responds to incidents and emergencies related to the security and integrity of information systems and information technology infrastructure. This centre aims to coordinate and manage the response of the Government or State to cyber threats, hacking and attacks on critical government infrastructure and resources.



Arab indicators used in the Arab Digital Agenda

3.

Annex. The measurement and monitoring model and the structure of its five clusters



Total number of indicators of cluster 1: 14

Number of defined international indicators	Number of undefined international indicators	Number of defined Arab indicators	Number of undefined Arab indicators
0	0	3	11

35



Total number of indicators of cluster 2: 25

Number of defined international Number of undefined international international international indicators		Number of defined Arab indicators	Number of undefined Arab indicators
8	0	8	9

Goal Goal Goal 2.6 2.7 2.8 Target 2.5.4 2.6.1 2.6.2 2.7.1 2.8.1 2.8.2 2.8.3 2.8.4 2.8.5 2.8.6 DDR_2.5.4.1 DDR_2.6.1.1 DDR_2.6.2.1 DDR_2.7.1.1 DDR_2.8.1.1 DDR_2.8.2.1 DDR_2.8.3.1 INT_2.8.4.1 DDR_2.8.5.1 DDR_2.8.6.1 DDR_2.7.1.2 INT_2.7.1.3





Total number of indicators of cluster 3: 20

Number of defined international Number of undefined international international international indicato		Number of defined Arab indicators	Number of undefined Arab indicators
5	0	0	15

Goal Goal Goal Goal Goal Goal Goal 3.7 3.6 3.8 3.9 3.10 3.11 3.12 Target Target Target Target Target Target Target Target 3.5.3 3.6.1 3.7.1 3.8.1 3.9.1 3.10.1 3.11.1 3.12.1 INT_3.7.1.1 DDR_3.5.3.1 DDR_3.6.1.1 DDR_3.8.1.1 DDR_3.9.1.1 INT_3.10.1.1 DDR_3.11.1.1 DDR_3.12.1.1 DDR_3.8.1.2

DDR_3.8.1.3





Total number of indicators of cluster 4: 17

Number of defined international indicators	Number of undefined international indicators	Number of defined Arab indicators	Number of undefined Arab indicators
8	0	0	9



Goal Goal Goal Goal 4.6 4.7 4.9 4.8 Target Target Target Target Target Target Target Target 4.9.1 4.6.1 4.7.2 4.7.1 4.7.3 4.7.4 4.8.1 4.8.2 DDR_4.8.2.1 INT_4.7.1.1 INT_4.7.3.1 DDR_4.8.1.1 DDR_4.6.1.1 DDR_4.7.2.1 DDR_4.7.4.1 DDR_4.9.1.1





Total number of indicators of cluster 5:9

Number of defined international indicators	Number of undefined international indicators	Number of defined Arab indicators	Number of undefined Arab indicators
3	0	0	6



