20th World Telecommunication/ICT Indicators Symposium (Geneva, 2025)

WTIS@20: The past, present and future of

digital development statistics

23rd September 2025 – Presentations

20TH WORLD TELECOMMUNICATION/ICT
INDICATORS SYMPOSIUM

ITUWTIS
GENEVA2025

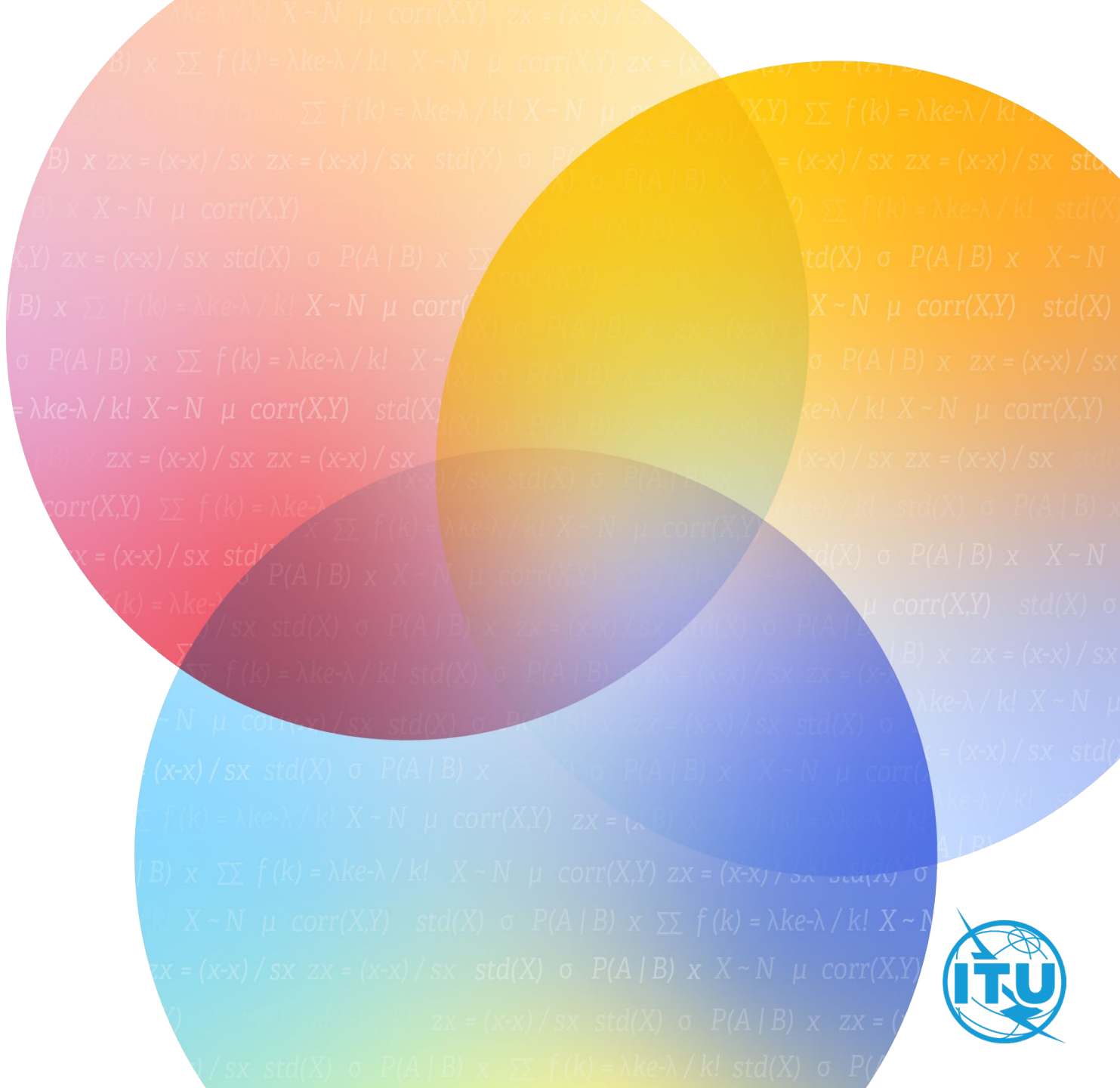
22–23 September 2025
Geneva, Switzerland

Shaping the Future of Digital Development Household Statistics

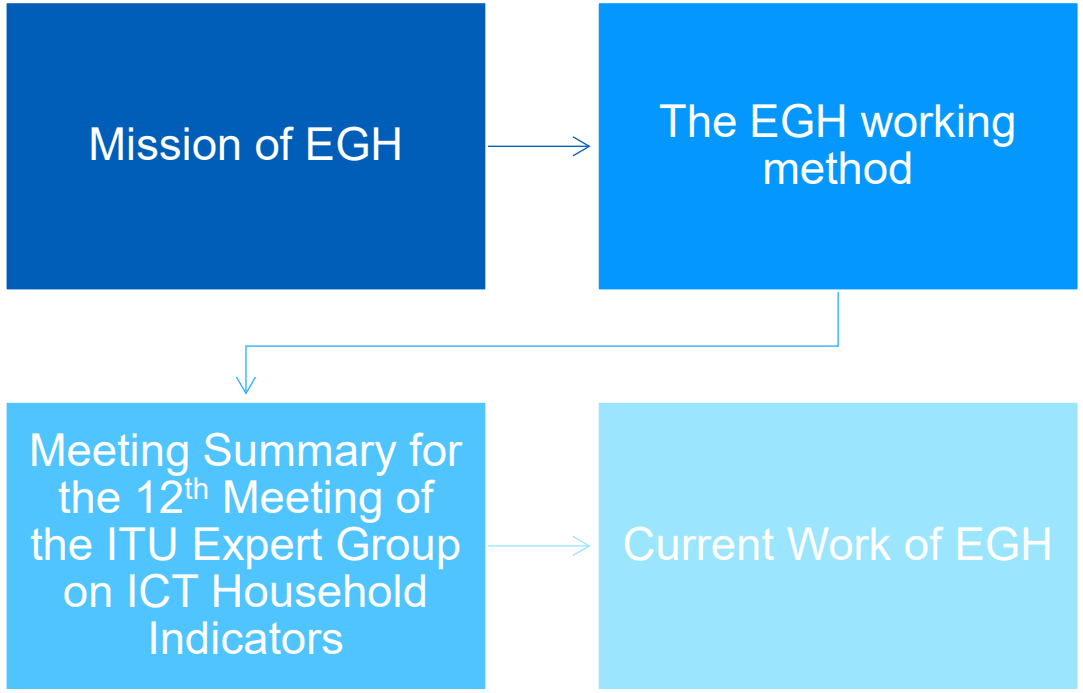
Report from ITU Expert Group on ICT Household Indicators (EGH)

Presented *by*

Linah Ngumba- EGH Chair



Agenda


Mission of EGH
The EGH working method
Meeting Summary for the 12th Meeting of the ITU Expert Group on ICT Household Indicators
Current Work of EGH

Mission of EGH

To review existing and develop new indicators on household ICT access and individual ICT use, including reviewing and developing harmonized definitions, response categories and/or classificatory variables to stay current with technological and behavioral changes.

To decide on ICT indicators from the demand side to be collected through the ITU statistical questionnaires on access and use by households and individuals.

To periodically review the *ITU Manual for Measuring ICT Access and Use by Households and Individuals*. Update the *Manual* to reflect revised ICT household indicators, experiences and lessons learnt by national statistical agencies around the world.

To work with the Expert Group on Telecommunications/ICT Indicators (EGTI) on issues related to indicators and topics that are common to both groups.

Online forum: https://www.itu.int/net4/ITU-D/forum/expertgrouponhouseholds/forum/

More information on EGH: https://www.itu.int/en/ITU-D/Statistics/Pages/expertgroups.aspx#EGH

The EGH working method

Content based on outcomes of the Annual Meeting

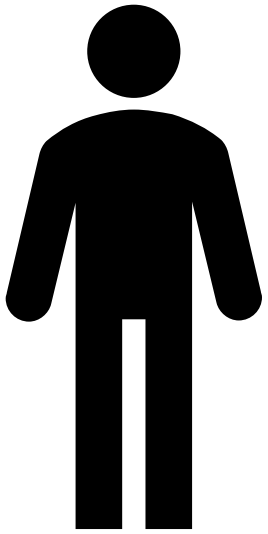
Sub groups
Forum discussion topic

Contributions, discussion, way forward and future work

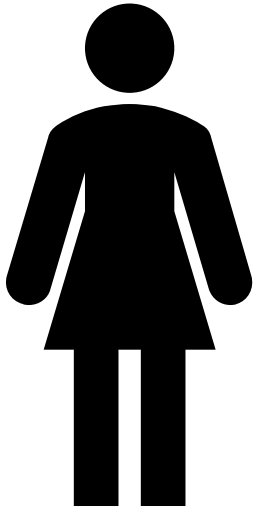
Conclusions presented at World Telecommunication/ICT Indicators Symposium

EGH Participation

263 participants
(151 in-person; 112 remote) from 85 countries;



55%



45%

2024 EGH summary

12th Meeting: September 2024

Presentations

ICT skills subgroup report

Designing ICT survey questions

Measuring AI use in household surveys

Country experiences

- Cote d'Ivoire
- Gambia

Joint EGTI/EGH subgroup on the ICT Development Index (IDI)

Subgroup decisions

Closed the EGH subgroup on measuring ICT skills through household surveys

Extended the mandate of the joint EGTI/EGH subgroup on the ICT Development Index

Opened new subgroup on measuring AI use through household surveys

New or continuing discussion topics

Measurement of ICT skills

E-waste

OTT services

Designing survey questions

Analysis of HH6: Households with Internet Access

Review of the household long questionnaire

Future of methods of work of EGH

Subgroup on measuring ICT skills using household surveys

2024 EGH activities

Summary

- EGH subgroup lead reported the subgroup's recommendations building on previous years' work including
  - Adapting wording and list of skills-related activities
  - Collection of overall skill levels
- 40 countries have already provided ICT skill levels and data available on the ITU DataHub

Conclusions

- Countries to report overall ICT skill levels for individuals
- Interested countries to test a reduced set against the full set
- **Subgroup closed -** to be revisited as skills evolve
- Keep ICT skills measurement as a **discussion topic** on the EGH Forum

Joint EGH-EGTI subgroup on the ICT Development Index (IDI)

2024 EGH activities

Summary

- Joint subgroup leads presented a candidate-indicators framework for a possible future IDI revision after the current 4-year methodology term
- Members discussed shifting indicator relevance and noted last year's work on fixed-broadband penetration
- ITU updated on improving household-numbers data via a UN Committee for the Coordination of Statistical Activities (CCSA) task force

Conclusions

- Continue to use universal and meaningful connectivity as the IDI conceptual framework
- Adopt the candidate-indicators framework
- Extend the joint subgroup's mandate to assess candidates and prepare recommendations for the next IDI update

Measuring AI use in household surveys

Summary

- At the 2024 EGH meetings, Eurostat presented common questions to capture individuals' AI use in the region, outlining the motivation and the measurement challenges in reflecting actual usage.
  - *Evolving topic and the question set is expected to be refined over time.*

Conclusion

- Many members expressed interest in the topic
- EGH agreed to open a new subgroup to develop and harmonize questions aligned with agreed question-design principles
  - To explore broader dimensions of AI use—context, frequency, and purpose—while limiting respondent burden
  - To coordinate with Eurostat and partners to share lessons and promote harmonization
  - ***More to be shared at 13th meeting of EGH***

Country experiences

Côte d'Ivoire - *Presented by Jacques N'Guessan, Telecommunications Regulatory Authority of Côte d'Ivoire (ARTCI)*

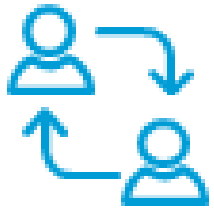
- Regular ICT household surveys demonstrate strong value for trend analysis and policy use
- Close collaboration between the telecom regulator and the national statistics office enabled the work
- Members discussed survey methodology and implementation details

The Gambia - *Presented by Lamin Dibba, Gambia Bureau of Statistics*

- ICT questions will be included in the next population census as a cost-efficient approach
- Work is ongoing to complement census results with mobile phone data
- Members discussed modalities for collaboration with the World Bank

Countries are encouraged to share their own experiences on the EGH Forum and/or at future EGH meetings!

Future work of EGH



EGH work – **2025 and beyond**

2025 work

Subgroups

Measuring use of AI through household surveys

Extend the mandate of the joint subgroup with EGTI on the ICT Development Index;

Open discussion topics

Measuring ICT skills

Improving survey questions to increase respondent comprehension

Future of methods of work of EGH

Beyond 2025

Future topics are defined by EGH members

How can engagement on the EGH forum be increased?

How can collaboration between the regulator and the NSO be enhanced in undertaking household surveys?

How can exchanges on discussion topics be fostered in the forum?

*How can we measure **digital well being** / **cybercrime** / **other topics??***

Have the correct experts from your NSO joined the forum?

ITUWTIS
GENEVA2025

Thank you

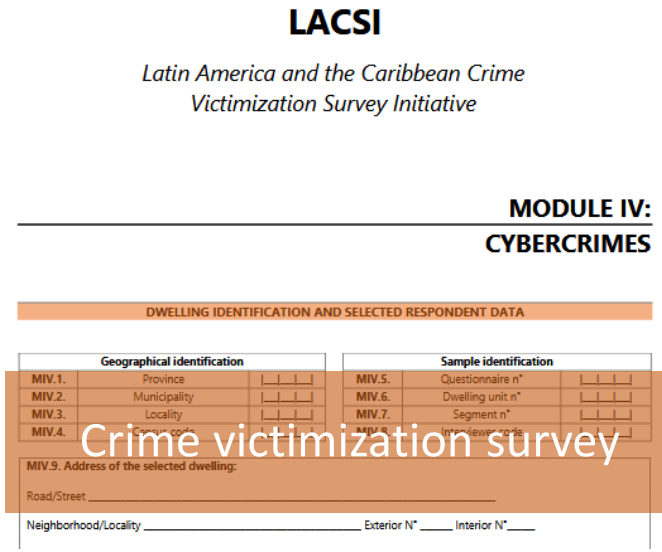
International efforts to harmonize the measurement of cybercrime

World Telecommunication/ICT Indicators Symposium (WTIS)

David Rausis, Research and Trend Analysis Branch, UN Office on Drugs and Crime

Measuring cybercrime – International harmonization

Administrative data from criminal justice system



Crime victimization survey

	Convention Article	ICCS Code	CY tag	ICCS offense	ICCS offense desc
	Article 7	09031	X	Unlawful access to a computer system	Unlawful acts involving entry into parts or t without authorization or justification
	Article 8	09033	X	Unlawful interception or access of computer data	Unlawful acts involving gaining access to c authorization or justification, including obta transmission process that is not intended t computer data (such as by copying data) w
a	Article 9	090322	X	Unlawful interference with computer data	Acts involving damage, deletion, deteriorati suppression of computer data without auth justification.
and stem	Article 10	090321	X	Unlawful interference with a computer system	Unlawful acts hindering the functioning of a system.
	Article 11	09039	X	Other acts against computer systems	Acts against computer systems not describ categories 09031 – 09033
ns ery	Article 12	0702	(Cy)	Forgery/counterfeiting	Creating, manufacturing, selling, passing or goods, or an instrument to create a false im
ns t or fraud	Article 13	0701	(Cy)	Fraud	Obtaining money or other benefit or evadin dishonest conduct.
sexual on	Article 14	030221	(Cy)	Child pornography	Procuring, arranging, facilitating or controll purposes of creating child pornography and disseminating, broadcasting, transmitting, selling child pornography
purpos against a	Article 15	030223	(Cy)	Sexual grooming of children	Sexual grooming of a child with a chi Internet and exposing them to sexually exp with a child in person to expose them to grad
of	Article 16	0719	(Cy)	Other acts against exploitation	Sexual exploitation of children, not classif 030223 - Sexual exploitation as described in 0
e	Article 17	0704	(Cy)	Acts involving the proceeds of crime	Receiving, handling or processing money or obtained, directly or indirectly, through the

Draft statistical framework for measuring cybercrime (ongoing)

Administrative data on cybercrime from the criminal justice system

Benefits

→ Part of the regular crime statistics for some offences.

→ Improve understanding of cybercrime and its impact on the population.

→ Build cases for legislative changes for investigation and penalization.

Factors affecting comparability and interpretation

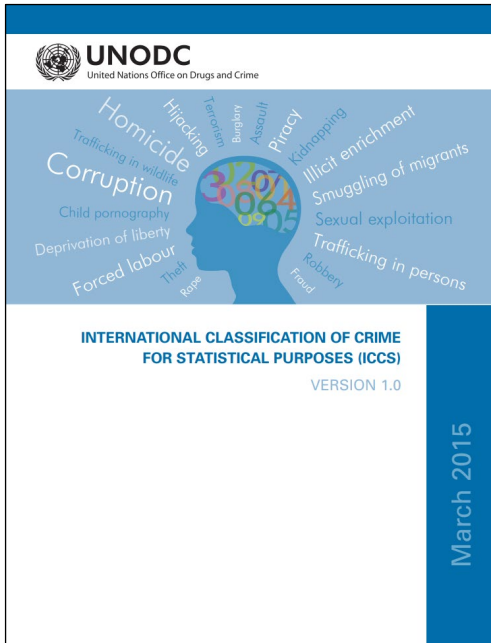
→ The number of crimes which are reported/detected

→ The way in which crime is registered and counted

→ **The way in which crime is defined and classified**

International Classification of Crime for Statistical Purposes (ICCS)

- Approved in 2015 by UN Statistical Commission and UN Commission on Crime Prevention and Criminal Justice
- International statistical standard for crime data collection
- Based on the description of behaviours and acts, not on criminal laws, which means it is equivalent for all jurisdictions.
- Available in all 6 UN languages



Cybercrime in the International Classification of Crime for Statistical Purposes

Cyber-dependent crime

0903			Acts against computer systems
	09031		Unlawful access to a computer system
	09032		Unlawful interference with a computer system or computer data
		090321	Unlawful interference with a computer system
		090322	Unlawful interference with computer data
	09033		Unlawful interception or access of computer data
	09039		Other acts against computer systems

09031 Unlawful access to a computer system

Unlawful acts involving entry into parts or the whole of a computer system without authorization or justification.[129]
- Computer systems as defined in footnote 128.

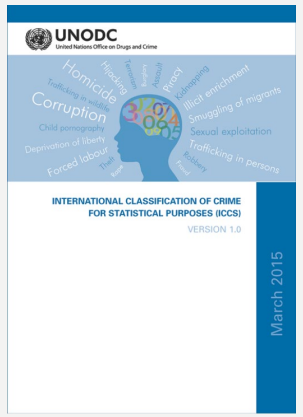
\+ **Inclusions:** Access to a computer system without right; hacking

\- **Exclusions:** Unlawful access to private computer files that amounts to intrusions upon one's privacy (02011); apply all exclusions listed in 0903

- Offences that target a computer or a computer system per se.
- Can only be committed through an ICT infrastructure
- Examples:
  - Hacking, denial of service attacks, dissemination of malware, …
- Should be classified under specific categories (e.g., unlawful access to a computer system).

Cybercrime in the International Classification of Crime for Statistical Purposes

Cyber-enabled crime



ICCS

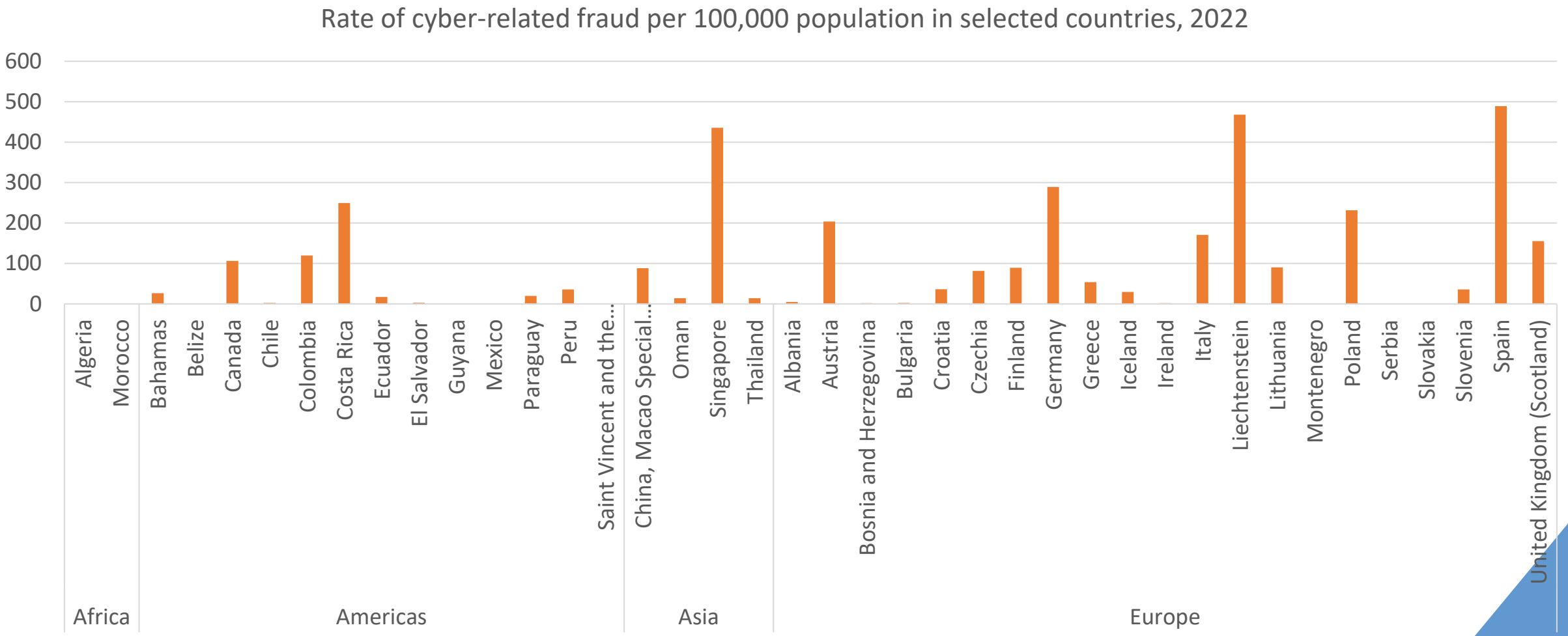
EVENT DISAGGREGATIONS
At – Attempted/Completed
We – Type of weapon used
SiC – Situational context
Geo – Geographic location
DaT – Date and time
Lo – Type of location
Mot – Motive
Cy – Cybercrime related
Rep – Reported by

Disaggregating variables

Cy - Cybercrime related

- Offences where computers are used to commit traditional crimes such as theft, harassment or fraud.
- To be classified under respective crime with a tag to identify if the crime was committed with the use of a computer (e.g., harassment with a tag to show it was committed through text messages or social media).

Example of global data on cybercrime



Crime victimization survey

- To collect information on the perception of security and victimization experience.
- Criminal acts are described instead of using criminal code.
- Provides information on hidden figure of crime and experience in reporting the crime.
- Includes information on characteristics of the victim, the offender and the event.
- Measure economic and social consequences of the crime.

United Nations
Office on Drugs and Crime

UNODC-INEGI CENTER OF EXCELLENCE
in Statistical Information on Government,
Crime, Victimization and Justice

Latin America and the Caribbean Crime Victimization Survey Initiative (LACSI)

Survey questionnaire available in English, Spanish, Portuguese and French at this page.

Victimization survey module: Cybercrimes

- Could you tell me what type of situation (cybercrime) did you suffer?
  1. Cyberbullying
  2. Email hacking
  3. Social media hacking
  4. Identity theft/impersonation
  5. Malware
  6. Ransomware

Social media hacking: Someone gained access to your online social account(s) without your permission such as Facebook, Twitter, Instagram, LinkedIn, blogs, etc. and resulted in any messages or posts being made from your social media account(s) that you did not send.

- Specific questions for each cybercrime
- Questions for all cybercrimes
  - Date, financial loss, effects on physical and mental health, other negative effects, reporting to authorities

Countries of Latin American and Caribbean that have collected data on cybercrime or digital security incidents based on the LACSI initiative

With data:

Bolivia 2023
Chile 2023
Colombia 2023
Dominican Republic 2022
Saint Lucia 2020

In data collection

-Uruguay, 2025

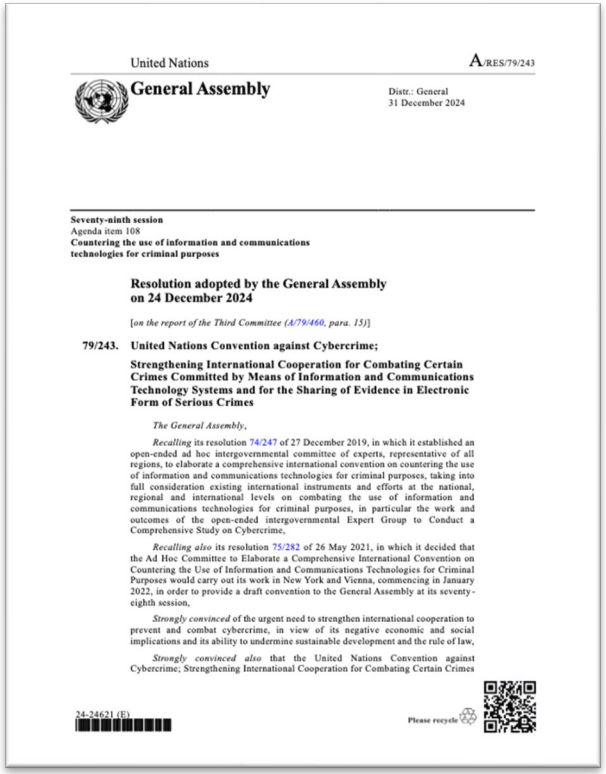
Countries that have their own measurements:

Peru, 2024
Mexico, 2024

Crime victimization survey: Challenges

Lack of legal definition of cyber-dependent, cyber-enabled or technology-facilitated offences.	• Reluctance to measure events that are not explicitly codified in national law.
"Hacking" can occur through channels beyond those typically listed (social media and e-mail) in the survey.	• Scope and classification issues linked to the limits of victimization surveys.
Module covers individuals aged 18 years and over.	• Offences that disproportionately affect children and adolescents (e.g., online grooming) are therefore likely to be under-represented.
Fraud and scams (including those perpetrated through electronic means) covered in another module.	• Not measured as part of cybercrime.
Lists of platforms/examples (devices) rapidly obsolete in the face of new environments (crypto-wallets, deepfakes, work/educational accounts).	• Need for regular updates.
Module captures reporting and satisfaction with competent authority and reasons for not reporting, but many cases are resolved with platforms or involve cross-border actors.	• Lack granularity for international cooperation and non-criminal avenues.

United Nations Convention against Cybercrime



United Nations A/RES/79/243

General Assembly Distr.: General
31 December 2024

Seventy-ninth session
Agenda item 108
Countering the use of information and communications technologies for criminal purposes

Resolution adopted by the General Assembly on 24 December 2024

[*on the report of the Third Committee (A/79/460, para. 15)*]

79/243. United Nations Convention against Cybercrime; Strengthening International Cooperation for Combating Certain Crimes Committed by Means of Information and Communications Technology Systems and for the Sharing of Evidence in Electronic Form of Serious Crimes

The General Assembly,

Recalling its resolution 74/247 of 27 December 2019, in which it established an open-ended ad hoc intergovernmental committee of experts, representative of all regions, to elaborate a comprehensive international convention on countering the use of information and communications technologies for criminal purposes, taking into full consideration existing international instruments and efforts at the national, regional and international levels on combating the use of information and communications technologies for criminal purposes, in particular the work and outcomes of the open-ended intergovernmental Expert Group to Conduct a Comprehensive Study on Cybercrime,

Recalling also its resolution 75/282 of 26 May 2021, in which it decided that the Ad Hoc Committee to Elaborate a Comprehensive International Convention on Countering the Use of Information and Communications Technologies for Criminal Purposes would carry out its work in New York and Vienna, commencing in January 2022, in order to provide a draft convention to the General Assembly at its seventy-eighth session,

Strongly convinced of the urgent need to strengthen international cooperation to prevent and combat cybercrime, in view of its negative economic and social implications and its ability to undermine sustainable development and the rule of law,

Strongly convinced also that the United Nations Convention against Cybercrime; Strengthening International Cooperation for Combating Certain Crimes

24-24621 (E)

Please recycle

United Nations Convention against Cybercrime;
Strengthening International Cooperation for Combating Certain Crimes Committed by Means of Information and Communications Technology Systems and for the Sharing of Evidence in Electronic Form of Serious Crimes

- 24 December 2024: Adoption of the UN Convention by the General Assembly (Resolution 79/243)
- 25-26 October 2025: Signing ceremony
- 2025 onward: Ratification by States and entry into force
- Held periodically: Conference of the States parties

UN Convention against Cybercrime - Criminalization

Article	Chapter II. Criminalization
7	Illegal access
8	Illegal interception
9	Interference with electronic data
10	Interference with an information and communications technology system
11	Misuse of devices
12	Information and communications technology system-related forgery
13	Information and communications technology system-related theft or fraud
14	Offences related to online child sexual abuse or child sexual exploitation material
15	Solicitation or grooming for the purpose of committing a sexual offence against a child
16	Non-consensual dissemination of intimate images
17	Laundering of proceeds of crime

Cyber-dependent crimes

Cyber-enabled crimes

Statistical Framework to Measure Cybercrime

Issues brought forward during first consultation

- Adaptation of existing crime classification.
- Definition of cybercrime for statistical purpose.
- Inclusion of privately held data.
- Inclusion of financial loss as an indicator.
- Inclusion of indicators related to cybercrime prevention policies.
- Addressing the intertwined nature of cybercrime types, such as personal data breaches leading to fraud and the spread of illegal digital content.

Possible indicators framework (based on corruption measurement framework)

<table>
<tr><td rowspan="4">Criminal offence</td><td colspan="2">Direct measures: Prevalence of cybercrime</td></tr>
<tr><td rowspan="3">Indirect measures</td><td>Perception: How much cybercrime is perceived</td></tr>
<tr><td>Risk: How high are the risks of cybercrime</td></tr>
<tr><td>Response: What is the scale of government response</td></tr>
</table>

Thank you very much for your attention!

- We welcome suggestions for the development of a draft cybercrime measurement framework.

- Contact: rausis@un.org

International Telecommunication Union (ITU)

20th World Telecommunication/ICT Indicators Symposium (WTIS)

National Survey on the Availability and Use of Information Technologies in Households and Module on Cyberbullying

ENDUTIH – MOCIBA 2024[1]

Araceli Martínez Gama

National Institute of Statistics and Geography of Mexico (INEGI[1])

September 23, 2025

inegi.org.mx

[1] as its acronym in Spanish

Background

Since 2015, the **National Survey on the Availability and Use of Information Technologies in Households (ENDUTIH[1])** has collected information on household ICT equipment, access limitations, and usage, including internet, computers, mobile phones, e-commerce and online banking, as well as radio and broadcast television, among others.

In 2024, INEGI, in collaboration with the Federal Telecommunications Institute (IFT), conducted the tenth edition of the survey.

The survey includes the **Module on Cyberbullying (MOCIBA[1])**, which provides insight into cyberbullying, defined as an intentional act carried out by an individual or group to harm or harass a person through the use of ICT, specifically on internet.

[1] as its acronym in Spanish

Background

The **National Survey on the Availability and Use of Information Technologies in Households (ENDUTIH)** covers various information needs in the field of ICT, and is prepared in accordance with the international recommendations of the following organizations:

International Telecommunication Union (ITU)

Organization for Economic Co-operation and Development (OECD)

Methodological aspects

Sample Size	Approximately 65,000 households (65,067 dwellings)
Collection period	June 10 to August 9, 2024
Target population	People 6 aged and older
Questionnaire	115 questions
Geographical coverage	At the national level by state

Statistical Design

Sampling Scheme	Probabilistic
National Housing Framework	**Stratified** into clusters of dwellings with distinct characteristics, depending on the **setting** (urban or rural) and **socioeconomic stratum** to which they belong. Primary Sampling Units (UPM).
Three-stage	1 Selection of the UPM 2 Selection of household 3 Selection of household resident 6 years and older

Criteria for the module on cyberbullying application

At the end of the interview application
(115 questions)

120.6 millions
of individuals aged 6 and older

1. If the individual is an **internet user** — **83.1 %**
2. If the individual falls within the age group of **12 years and above**

Module is applied
(15 questions) — **74.8 %**

INEGI

Cyberbullying module

The cyberbullying module provides information on the number of cyberbullying incidents and their characteristics, as well as the identity, sex, and age range of the bully and the victim.

It was conducted annually from 2015 to 2017 as an experimental statistic and from 2019 to 2024 as an official statistic.

Reference period

Information from the previous 12 months is requested.

In this edition: from July 2023 to August 2024.

Thematic coverage

Cyberbullying

Situations

1. Offensive messages
2. Offensive calls
3. Criticism based on appearance or social class
4. Identity theft
5. Contact through false identities
6. Account or website tracking
7. Provocations to react negatively
8. Sexual insinuations or proposals
9. Receiving sexual content
10. Posting or selling sexual content images or videos
11. Posting and/or sending personal information, photos, or videos
12. Threatening to publish personal information, audios or videos to extort money
13. Another situation

Thematic coverage

Characterization of the situation

- Identity, age and gender of the bully
- Frequency of cyberbullying
- Effects on the victim
- Digital media
- Measures taken

Thematic coverage

Safety

Security measures

- Create or set passwords (keys, fingerprint, pattern)
- Install or update antivirus, firewall, or antispyware programs
- Block browser pop-ups
- Regularly change passwords
- Do not enter unsafe or unknown websites
- Do not open or save files sent by unknown people
- Do not publish your email or phone number on social networks

Importance and perception of data protection on the internet

Receiving spam or virus

inegi.org.mx

Main results
Module on Cyberbullying 2024

INEGI

Individuals who experienced some form of cyberbullying, by sex

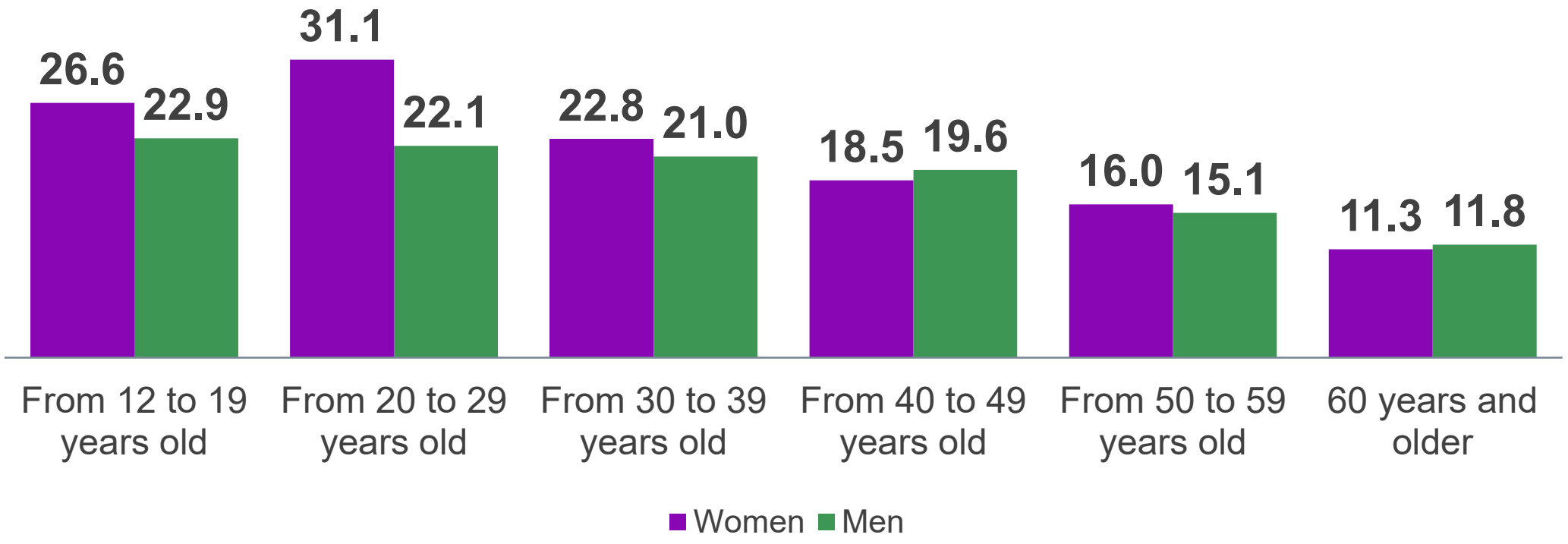
2024
(percentage)

21.0 % of individuals aged 12 and older who used the internet in 2024 were victims of cyberbullying

Note: Percentages are calculated with respect to the total reference population.

Individuals who were victims of cyberbullying, by age group and sex

2024
(percentage)



Note: Percentages are calculated with respect to the total reference population.

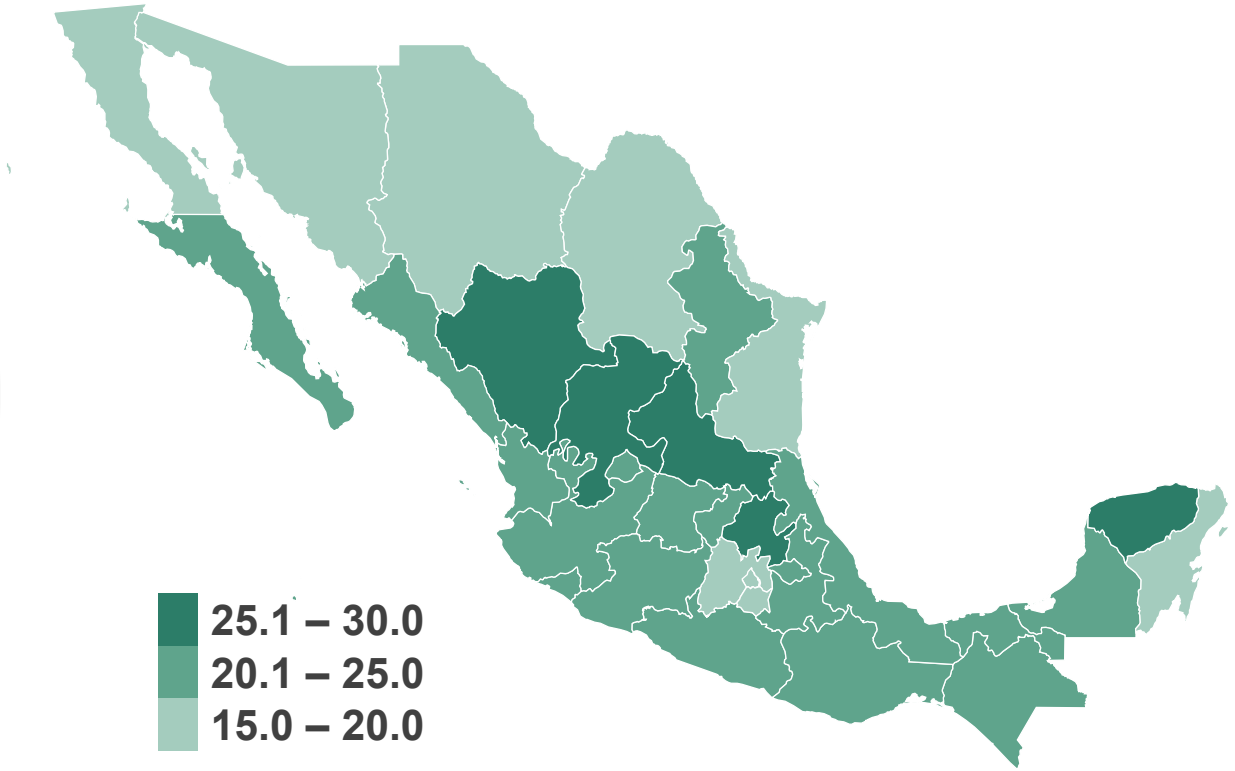
Individuals who were victims of cyberbullying, by state

2024
(percentage)

States with the highest percentage of victims

	Internet users[1/]	Victims
Yucatán	85.7	29.7
San Luis Potosí	79.2	26.9
Hidalgo	83.5	26.2
Durango	83.2	26.0
Zacatecas	84.8	25.9

1/ Individuals aged 12 and older.
Source: ENDUTIH 2024.

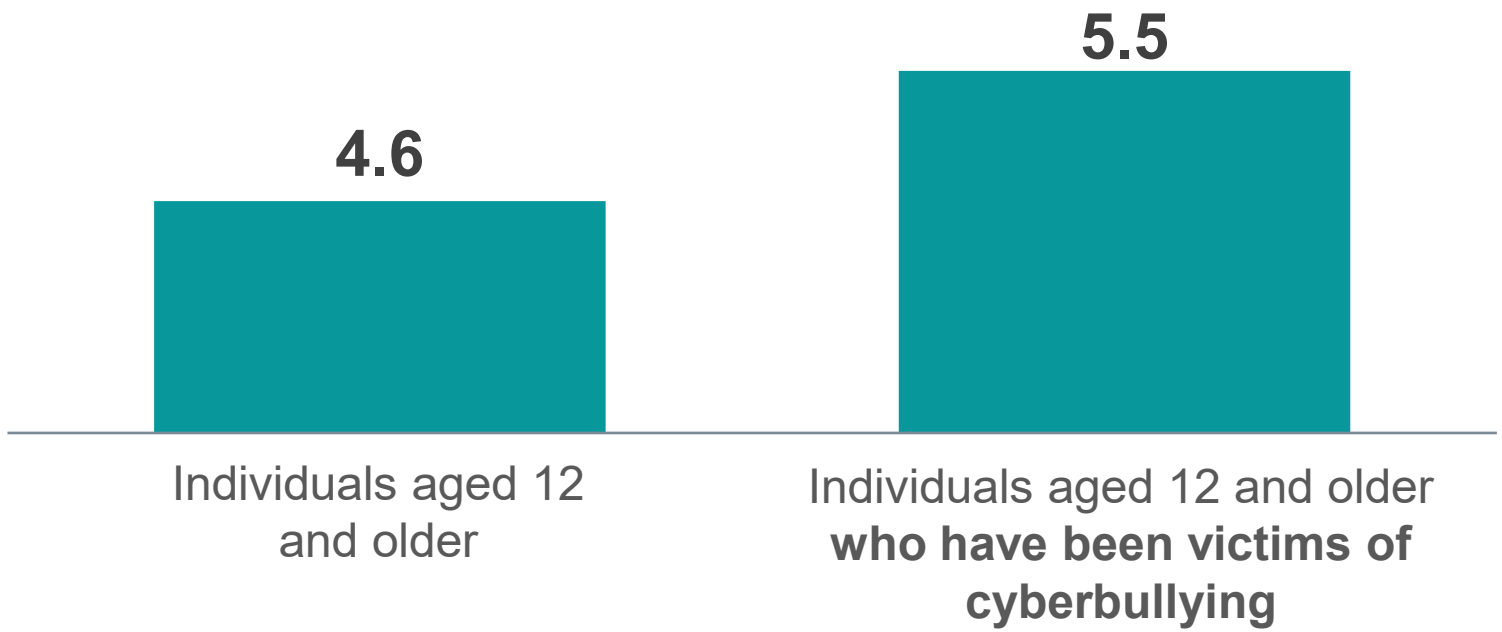


INEGI

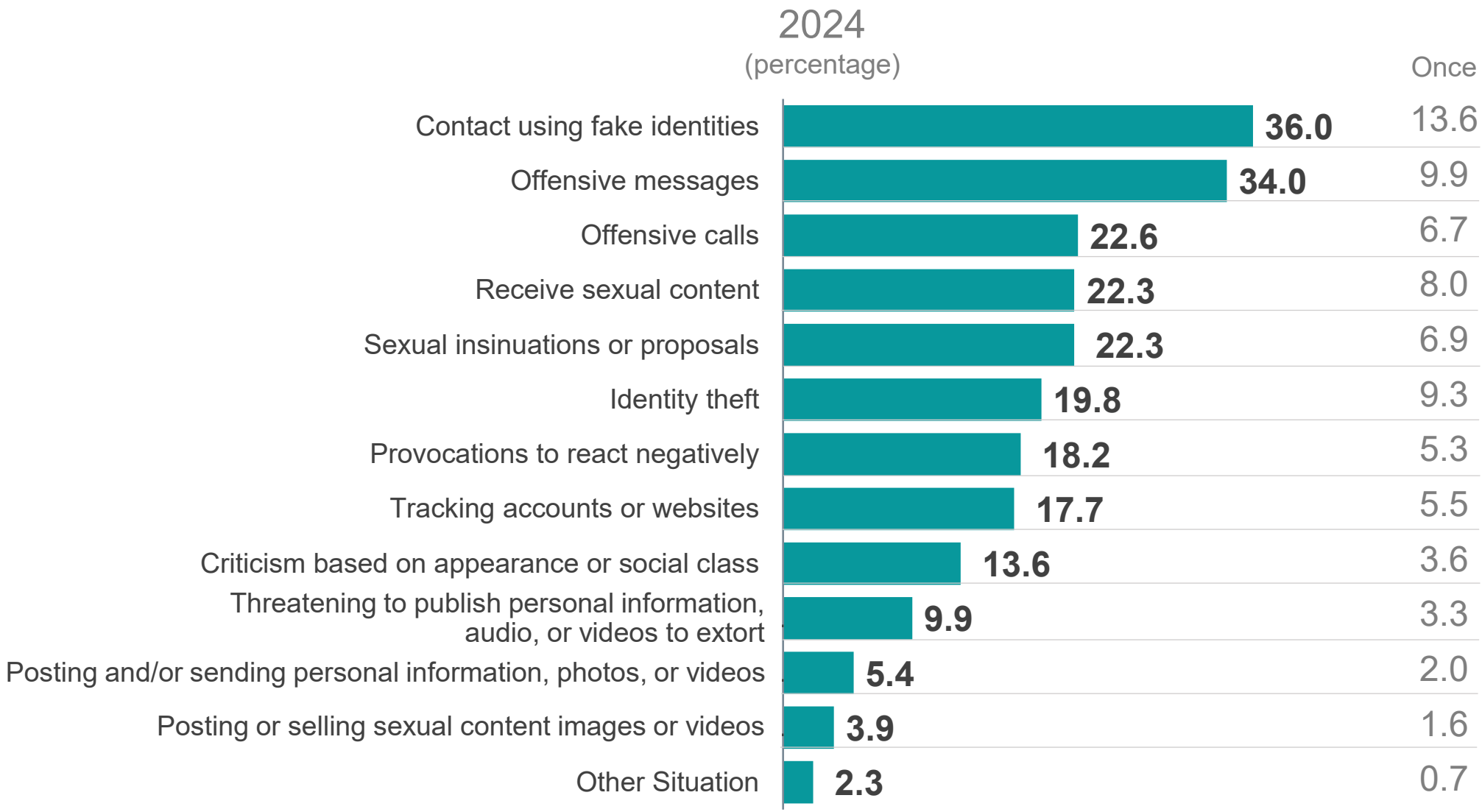
Average hours of daily internet use

2024
(percentage)

Individuals who have been victims of cyberbullying spend approximately **one hour more on average** on the internet

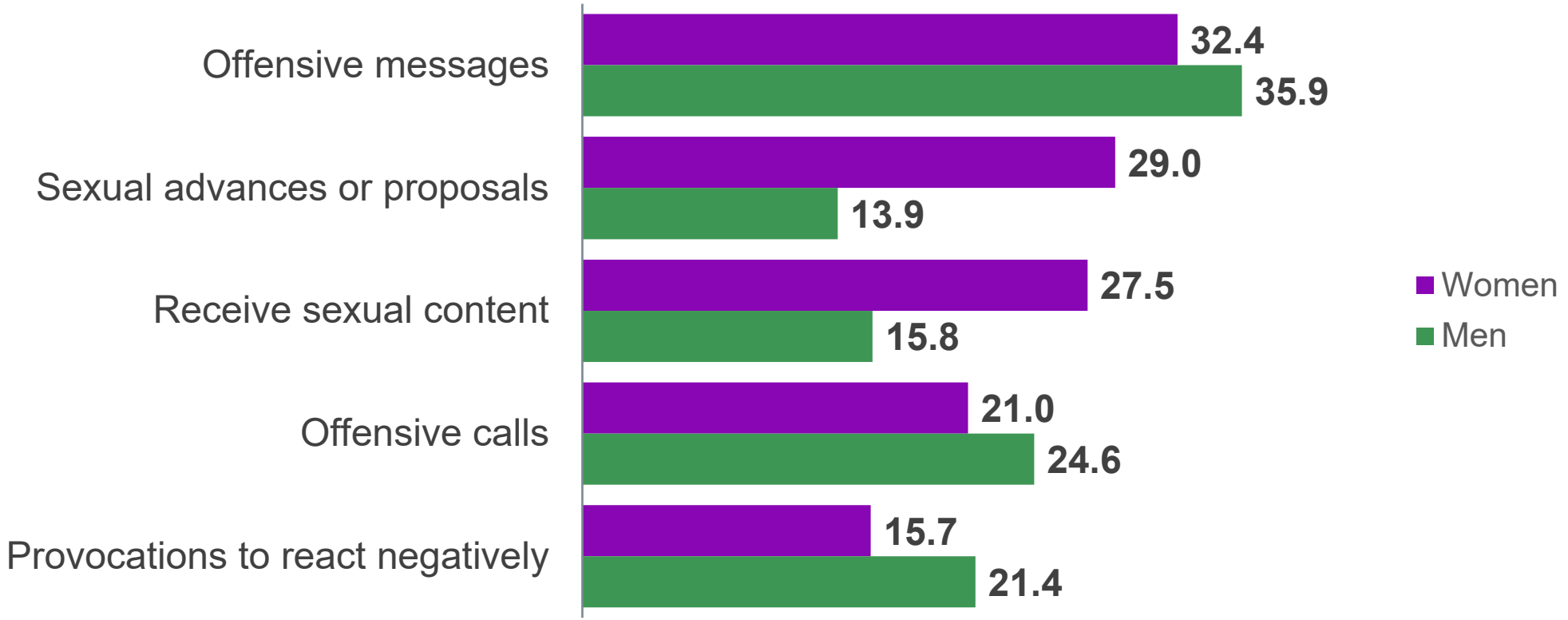


Cyberbullying situations experienced by victims and frequency



Cyberbullying situations experienced by men and women with the largest gender gap

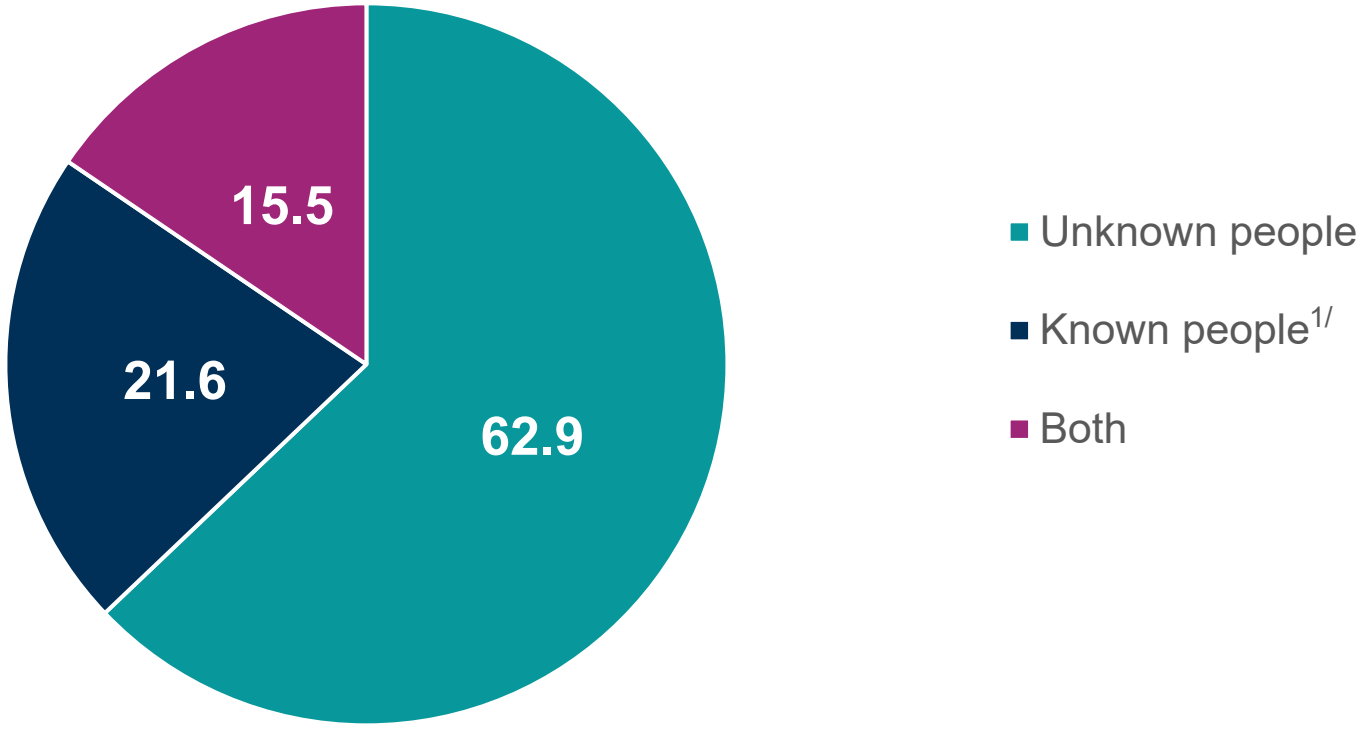
2024
(percentage)



Note: Percentages are calculated with respect to the total reference population.

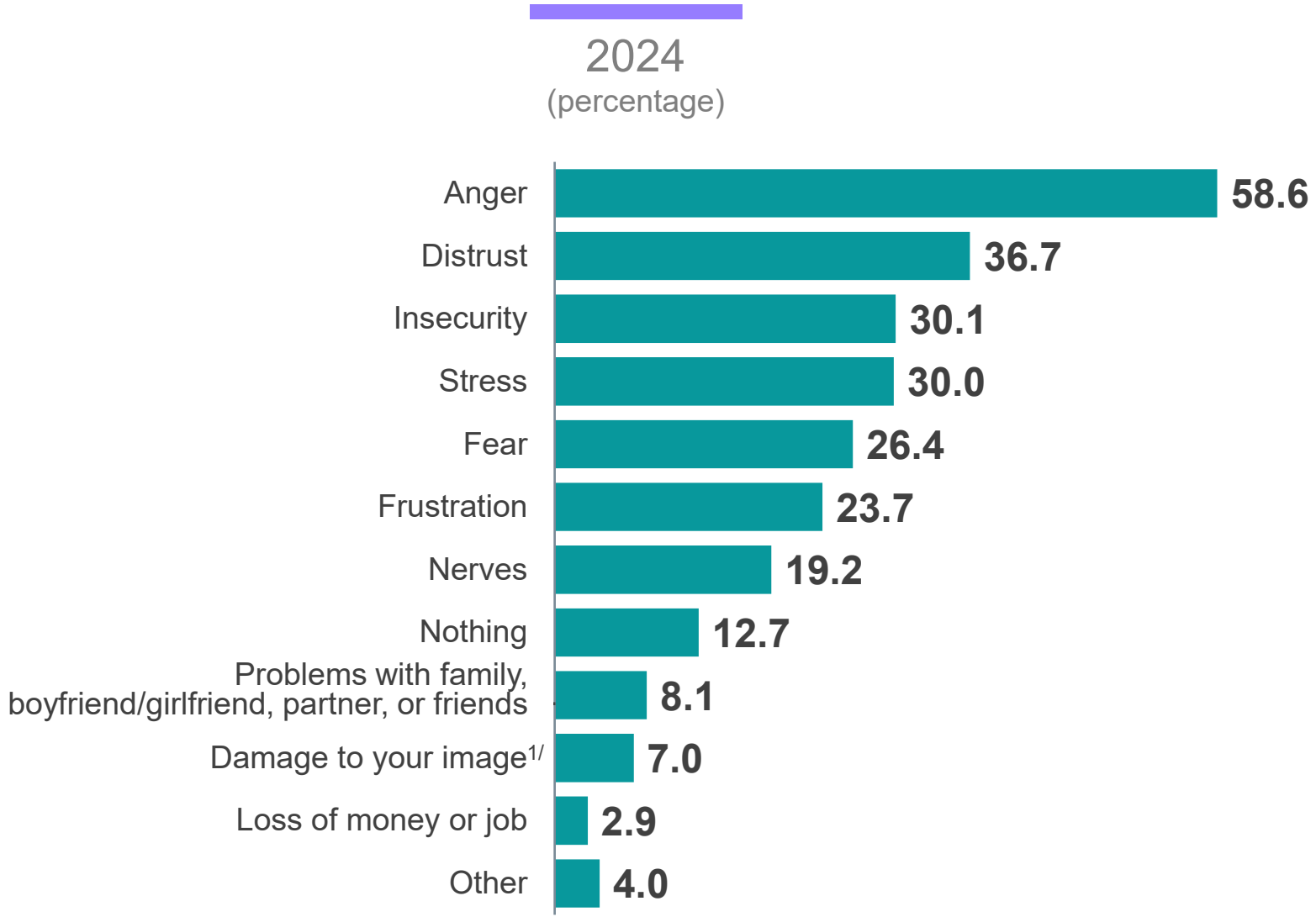
Individuals who experienced cyberbullying, according to their relationship with the aggressor or aggressors

2024
(percentage)



1/ It includes the answer options "Current girlfriend / partner", "Ex-girlfriend / ex-partner", "Relative", "Friend", "Classmate/work partner", "Acquaintance with little contact" and "Acquaintance only by sight".

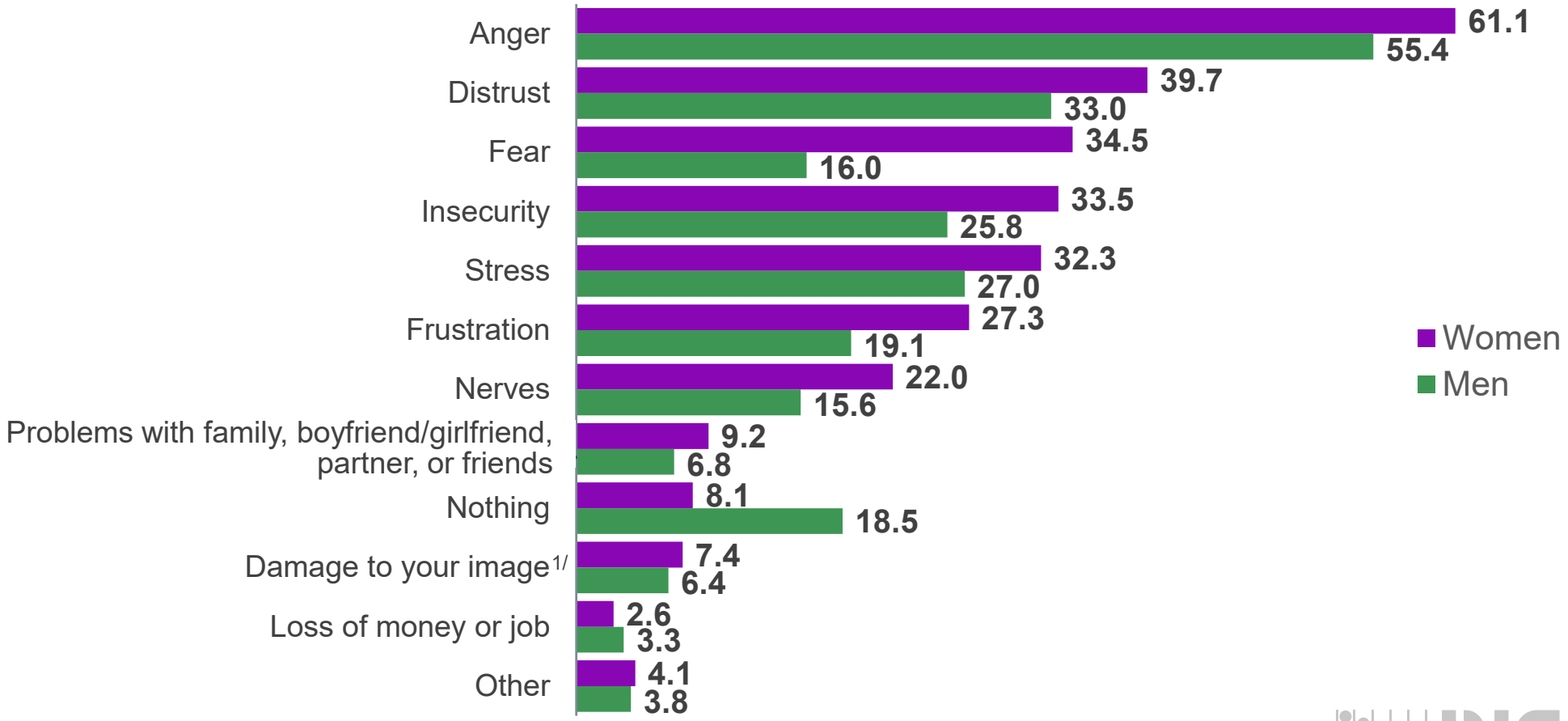
Effects on individuals who experienced cyberbullying



1/ It includes the response options “Damage to your personal image”, “Damage to your professional/work image” and “Damage to your school image (bullying)”.

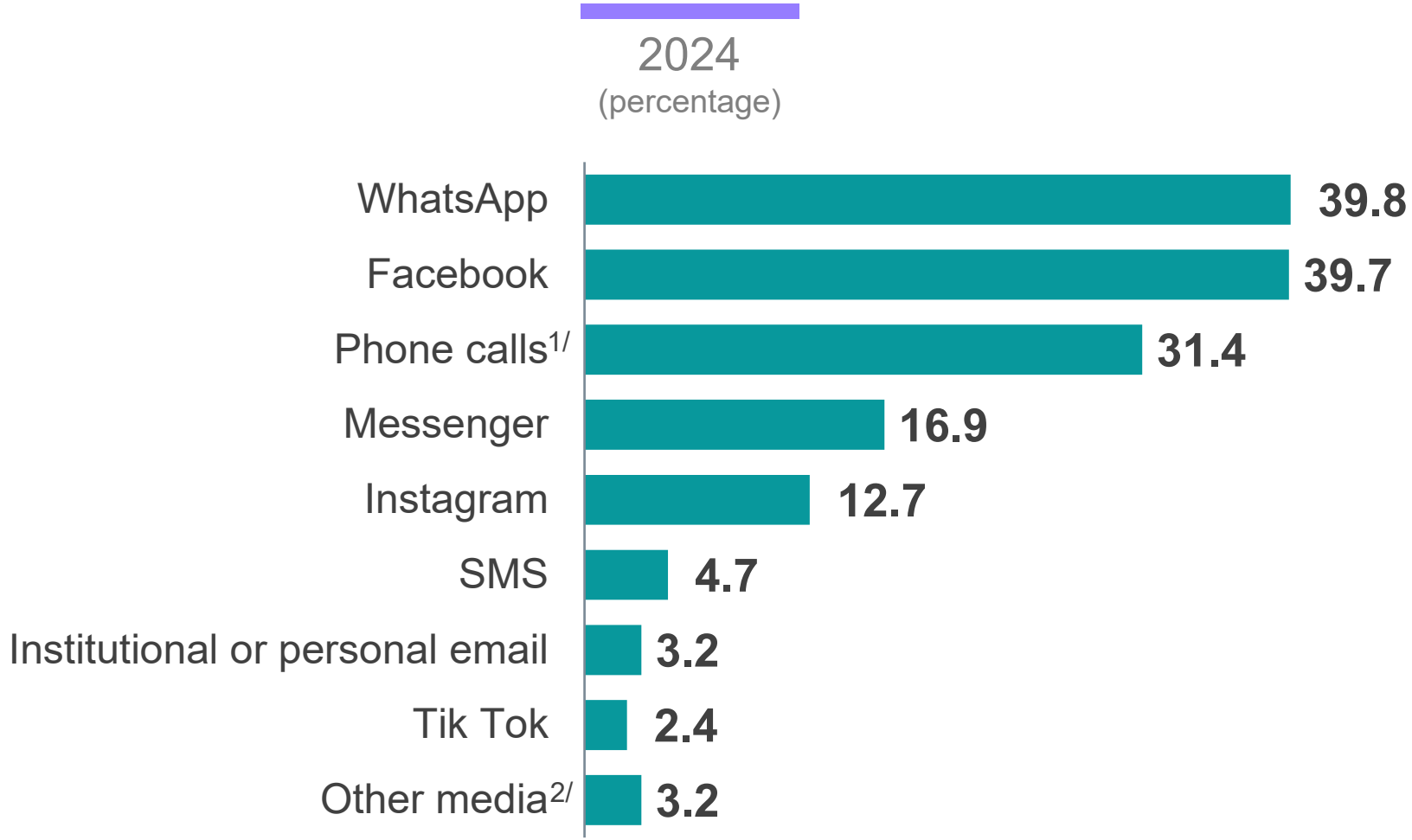
Effects on individuals who experienced cyberbullying, by sex

2024
(percentage)



1/ It includes the response options "Damage to your personal image", "Damage to your professional/work image" and "Damage to your school image (bullying)".

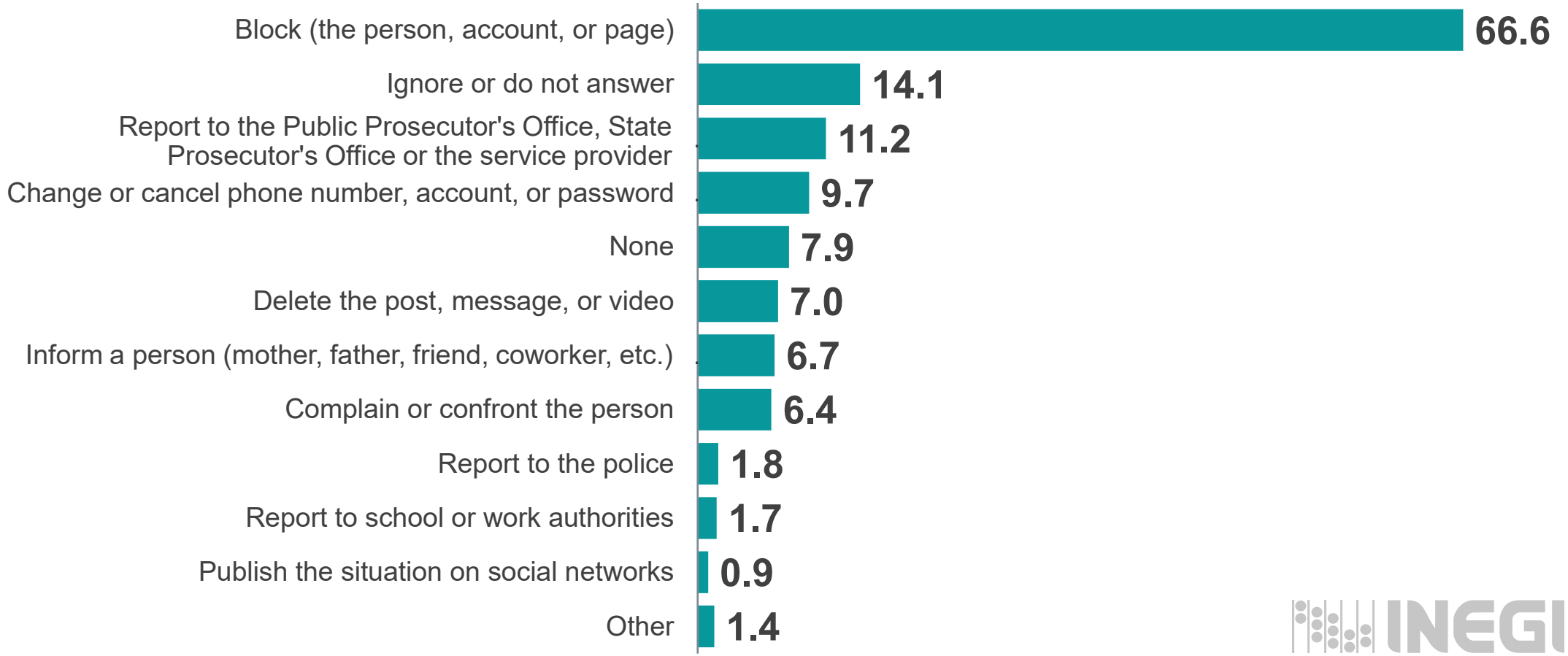
Individuals who experienced cyberbullying, according to digital media used



1/ It includes the response options "Cell Phone Calls" and "Landline Calls".
2/ It includes the response options "X (formerly Twitter)", "Telegram", "YouTube" and "Other media".

Measures taken by individuals who experienced cyberbullying

2024
(percentage)



Statistical offer

INEGI: https://www.inegi.org.mx/
MOCIBA Module: https://www.inegi.org.mx/programas/mociba/2024/
ENDUTIH Survey: https://www.inegi.org.mx/programas/endutih/2024/

THANK YOU!

Araceli Martínez Gama

Deputy Director General of Economic Surveys

Economic Statistics Unit

araceli.gama@inegi.org.mx

CONOCIENDO MÉXICO

800 111 46 34
www.inegi.org.mx
atencion.usuarios@inegi.org.mx

INEGIINFORMA

NEW DATA FOR MEASURING THE IMPACT OF NEW TECHNOLOGIES ON PEOPLE'S WELL-BEING

ZIGA ZARNIC, HEAD OF DIGITAL WELLBEING AND SUSTAINABILITY ANALYTICS

OECD, WISE CENTRE

ITU, WORLD TELECOMMUNICATIONS INDICATORS SYMPOSIUM

22-23 SEPTEMBER 2025

OECD

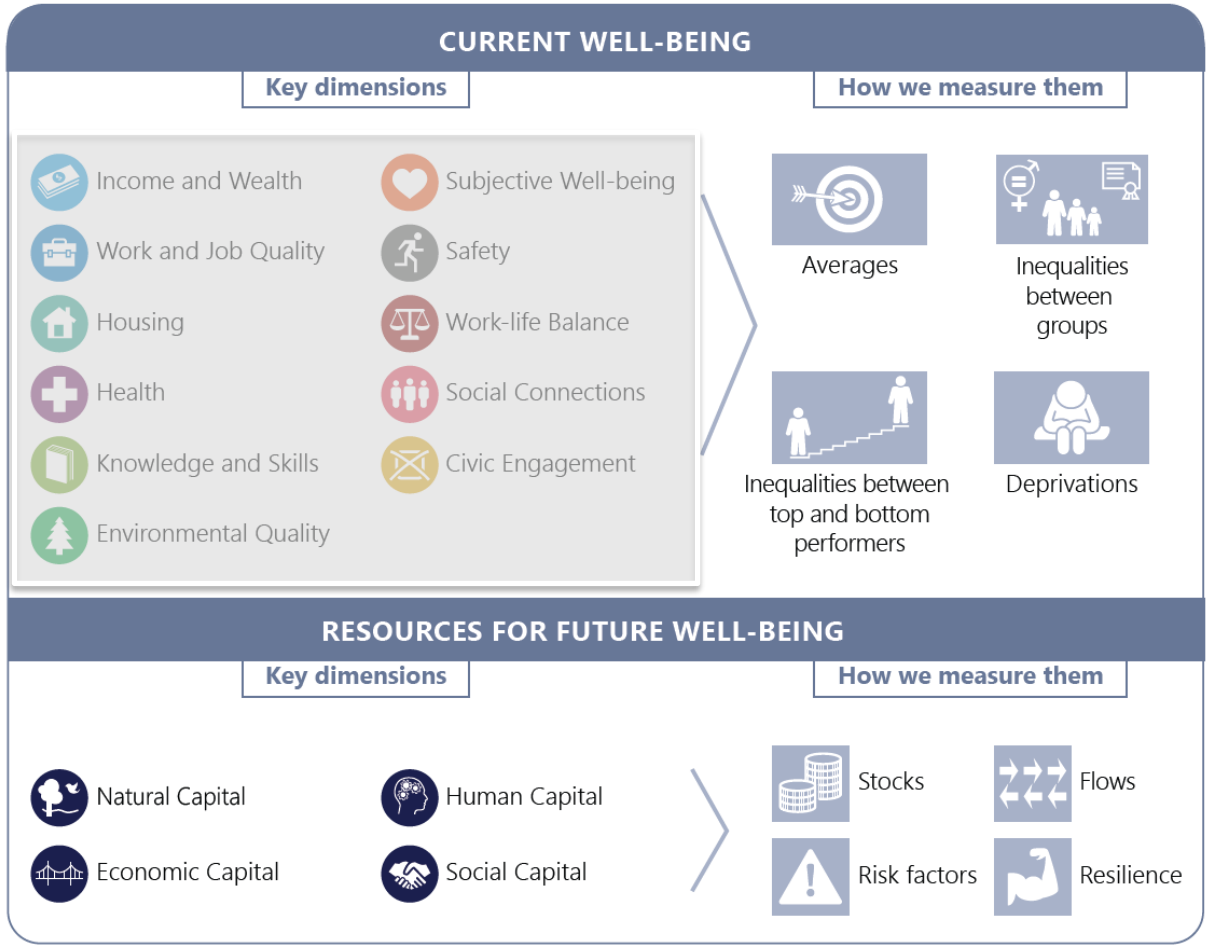
BETTER POLICIES FOR BETTER LIVES

The OECD Digital Well-being Hub with Cisco

The Hub is **part-crowdsourcing platform and part-research tool**, grounded in the **OECD WELL-BEING FRAMEWORK**

- Building a solid **evidence base** to explore **the impacts of digital technologies on people's #wellbeing** across 9 key dimensions:

- 🛠️ Knowledge and skills
- 💼 Work and job quality
- ⚖️ Work-life balance
- 💊 Health
- 👫 Social connections
- 🗳️ Civic engagement and trust
- 🌱 Environmental quality
- 🔒 Personal safety
- 📡 Digital infrastructure



Key Elements of the Digital Well-being Hub

1. TELL US ABOUT YOUR DIGITAL LIFE

- A **crowdsourcing tool** that gives everyone the opportunity to share their experiences of how new technologies affected their wellbeing.

2. A DIGITAL WELL-BEING DASHBOARD

- Key **statistics** across 9 key dimensions of well-being by individuals in the context of new technology use.

3. RESEARCH

- How digital technologies affect well-being: Literature survey
- How people experience new technologies and genAI?
- How screen time affects subjective well-being?

The Digital Well-being Hub Poll's Dataset

REPRESENTATIVE SAMPLE

- The total of 14,570 respondents in 14 OECD & non-OECD countries, with about 1,000 respondents per country

REAL-TIME DATA

- The poll provides **timely and high-frequency data**, tracking very short-term movements in people's experiences of technology.

HIGH-RESOLUTION DATA

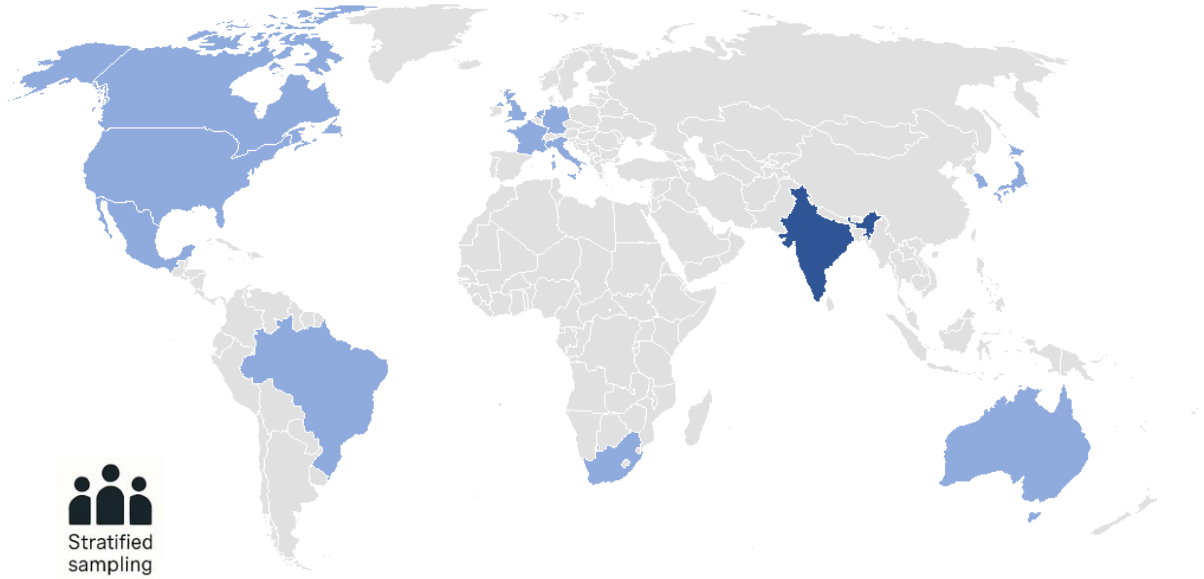
- Experience of technology varies **across groups** (e.g., with respect to gender, age, income, location and others).

CAPTURING COMPLEX IMPACTS

- The survey focuses on **the least well understood impacts of technology on people's well-being** (e.g., social connectedness, mental health, civic space, perceived security), gathering knowledge on their lived experiences.

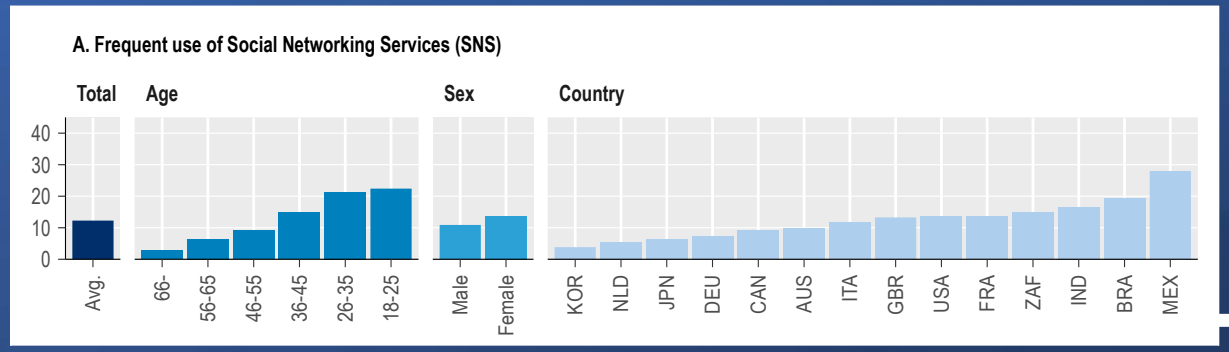
A GLOBAL INSTRUMENT WITH COMPARABLE DATA

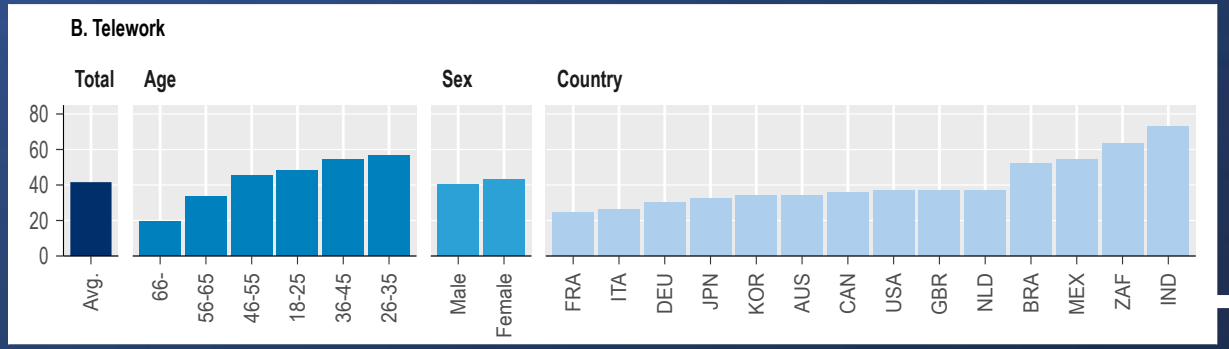
- The poll is built as **a standardized tool** that can be used in all countries, geographies, contexts, etc.
- The methodology is based on OECD Guidelines on Measuring Subjective Well-being.

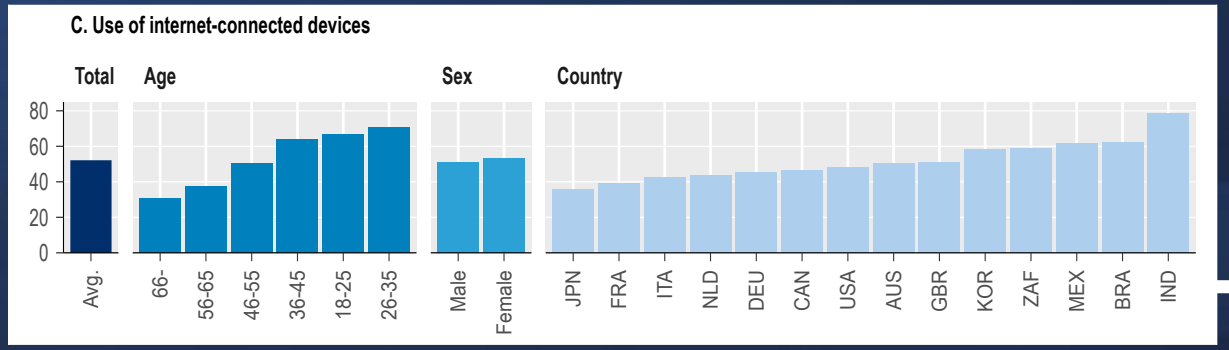


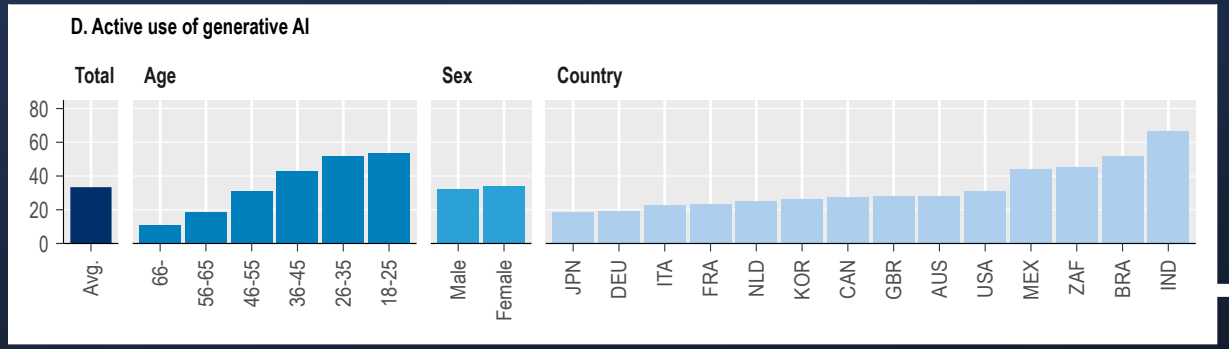
- Americas: Canada, the US; Brazil, Mexico
- Asia and Oceania: Australia, India, Japan, Korea
- Africa: South Africa
- Europe: France, Germany, Italy, the Netherlands, the UK

What is new tech used for?







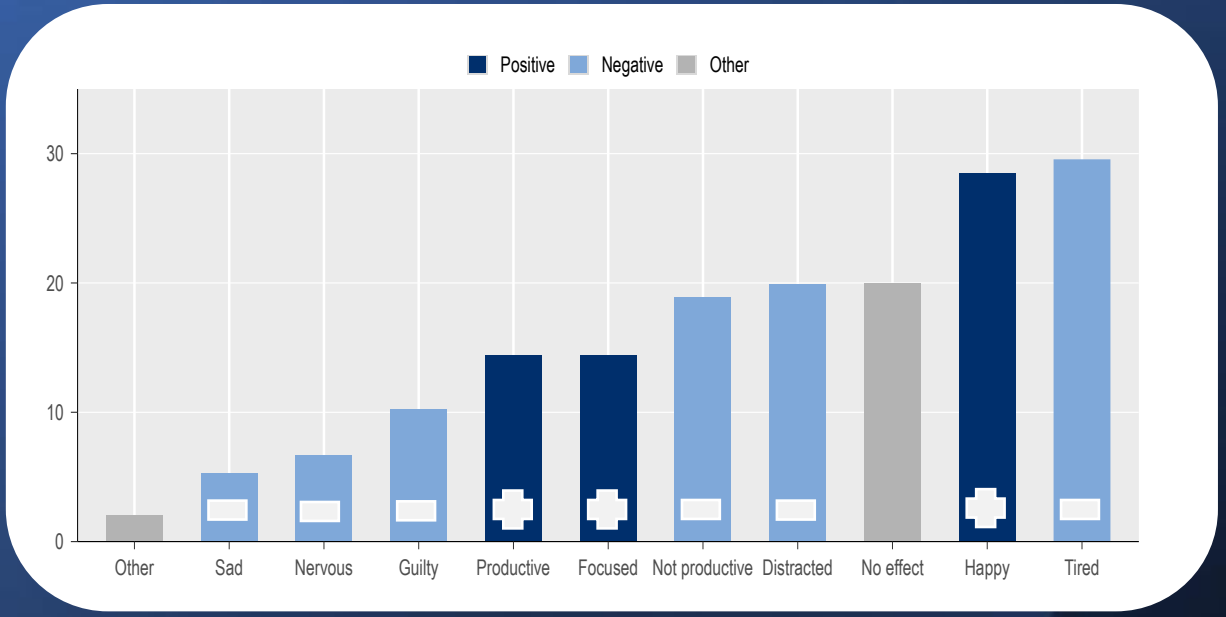


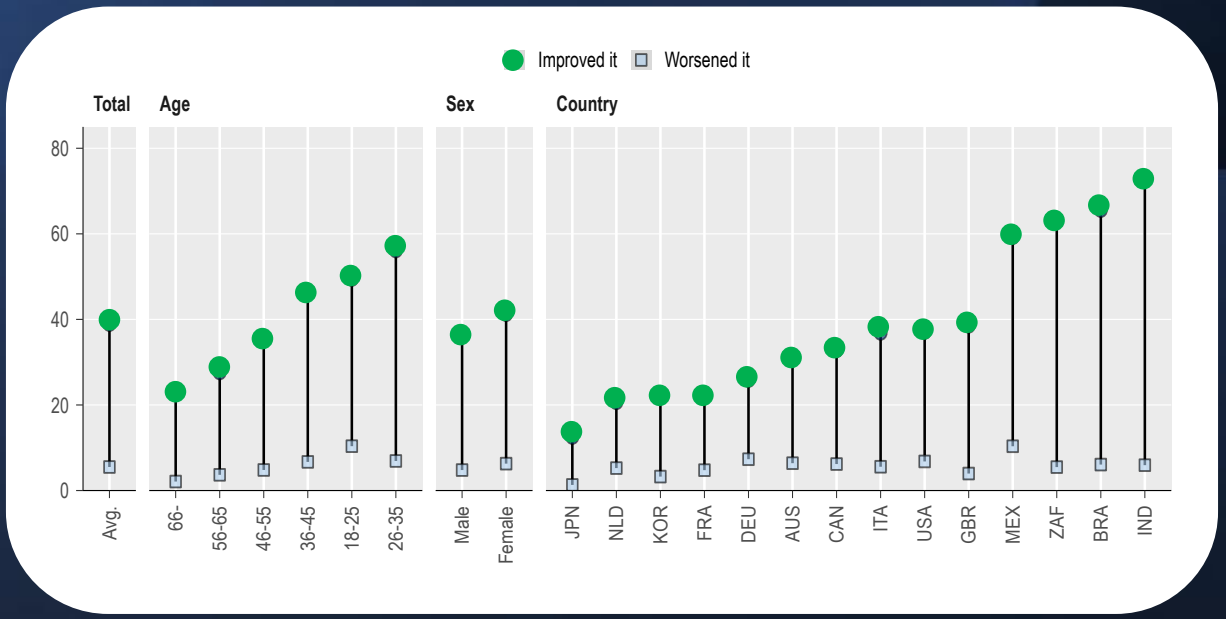
- **Social networking engagement** peaks among young, but declines with age.
- Women are more active than men.
- Particularly high in emerging economies.

- **Remote working** is most common among young adults, in their prime working and parenting years.

- **Use of internet-connected devices** is highest among young adults, only marginally higher among women.
- Particularly strong in emerging economies.

- **The use of generative AI** is high among young adults, but declines steeply with age.
- Particularly high in emerging economies.



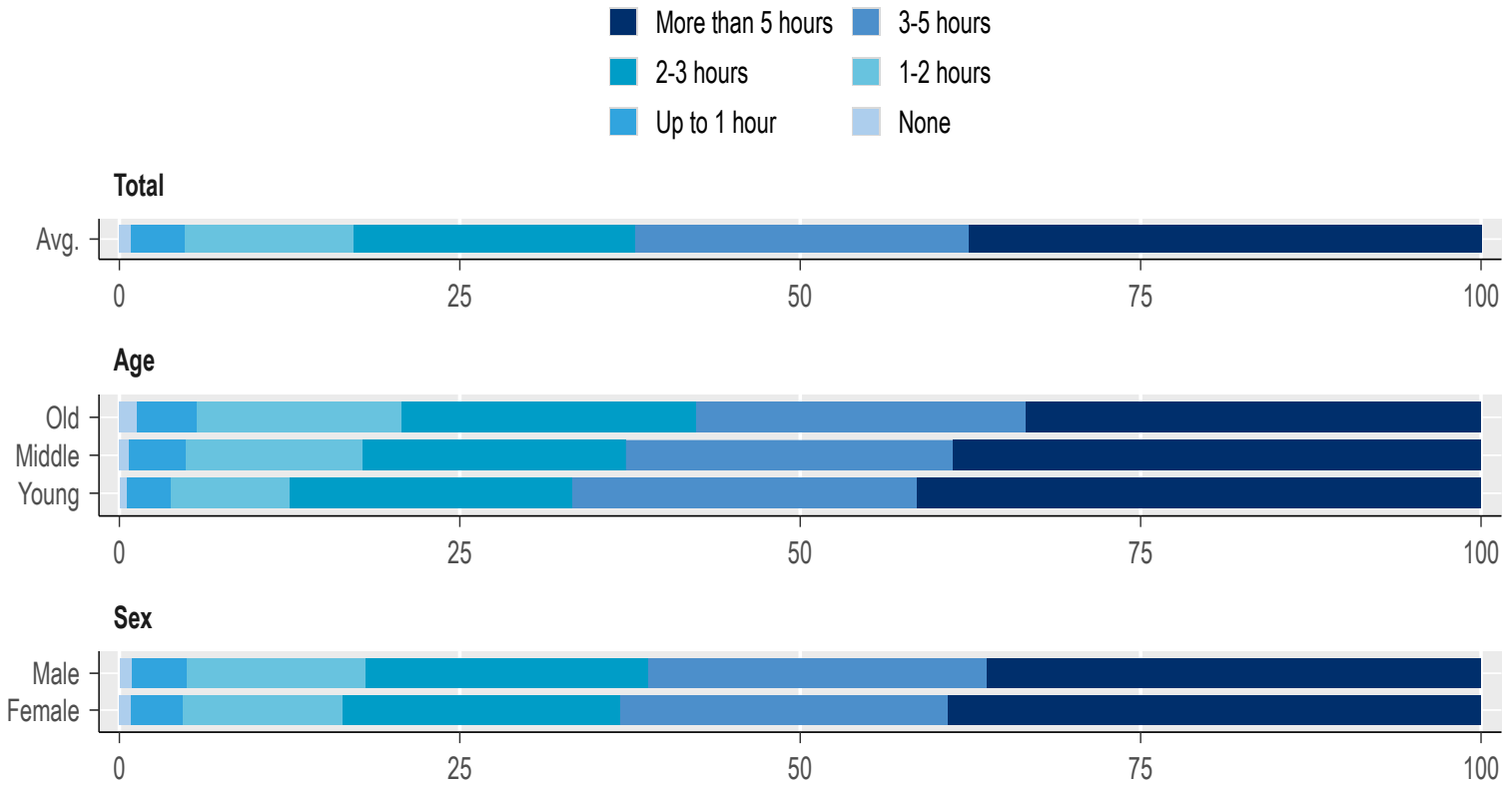


How do people consider new tech affects their lives?

- Overall, 39% say technology has **strengthened relationships** with those closest to them.
- **Young adults** widely perceive digital tools as **enhancing their social ties → but also report more negative experiences** compared to older adults.
- Particularly strong positive perceptions in **emerging economies**.
- **Prolonged screen time for personal use** evokes mixed feelings among people:
  - 29% feel “happy” with their digital engagement, but a similar fraction feels “tired”.
  - Similar bi-polarism observed for feeling “productive-focused” vs “Not-productive-distracted”.
  - 20% experience no emotional shift at all.

How much time do people spend online?

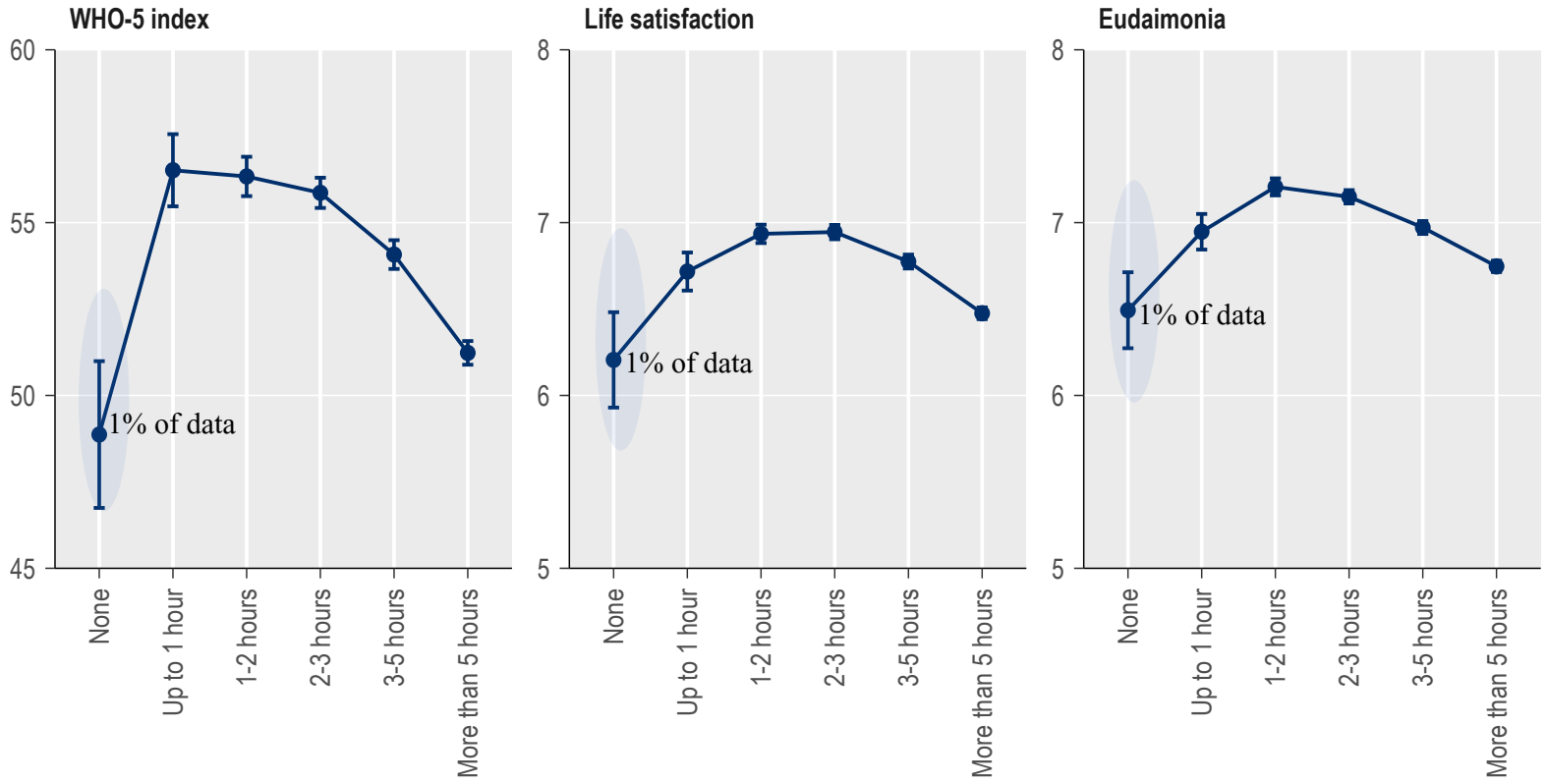
- Overall, 38% of respondents report **more than five hours of daily recreational screen time**, **highest (41%) among young adults.**
- Gender differences are modest, but **women report higher screen time** than men – possibly to some extent due to higher engagement with social networking platforms.



Does more screen time mean greater well-being?

At what point can opportunities become risks?

- Technology can be a force for **good**, but it can also pose **risks to well-being** through unintended consequences on mental health, life satisfaction, etc.
- **Inverted U-shape pattern:**
  - **Prolonged screen time** (> 5 hours/day) is associated with higher risk of low mental well-being, low life satisfaction, and low eudaimonia (i.e. life purpose).
- Negative associations are **amplified among unemployed and students**.



COMING UP, early December: OECD-Cisco launch of new research

- How do people experience new technologies and perceive GenAI?
- Screen time and subjective wellbeing: insights from a few countries worldwide.

Contact us:
wellbeing@oecd.org

Learn more about the Centre:
www.oecd.org/wise

Subscribe to our newsletter:
oe.cd/wellbeingnews

Follow-us:
@OECD_Stat

Social media usage and adolescents' mental health in the EU

ITU WTIS Conference
Beyond access: Measuring digital well-being for all
22-23 September, 2025

Romina Cachia, Clara Centeno
Joint Research Centre, European Commission
Unit T.1 – Digital Economy

European Commission

Joint Research Centre

Science at the service of EU policies

ANTICIPATON

INTEGRATION

IMPACT

Our purpose

The JRC provides evidence-based knowledge and science, supporting European Union policies to have a positive impact on society

European Commission

Well-being of young people is a high priority in the EU agenda

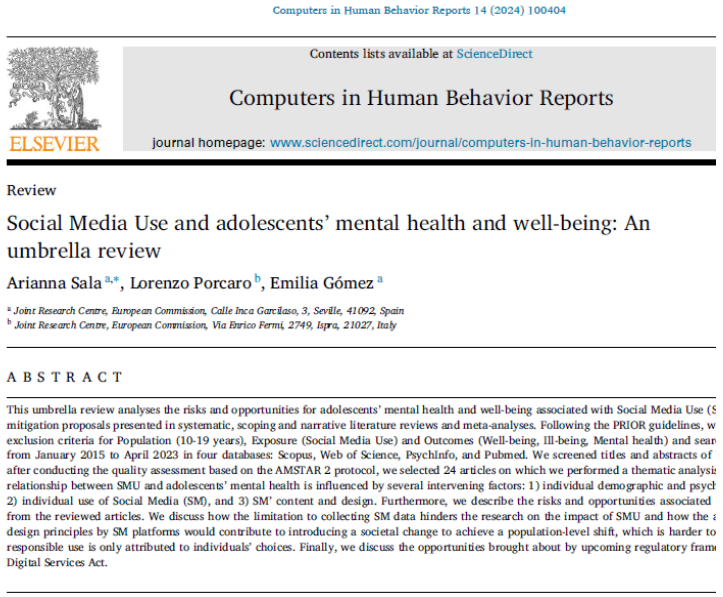
- 2018 General Protection Data Regulation (GDPR)
- 2022 Digital Services Act (DSA)
- 2022 Council of the European Union's Conclusions on supporting well-being in digital education
- 2023 EC COM on a comprehensive approach to mental health
- 2023 Council conclusions on a comprehensive approach to the mental health of young people
- **EU priorities (2024-2029) include activities *in preparation:***
    1. *EU-wide inquiry on the broader impacts of social media on well-being*
    2. *Action Plan against Cyber-bullying*
    3. *At SOTEU 10 Sep 2025, EC President - options for social media age restrictions*

Complex relationship between social media use and mental health

National Academies of Sciences, Engineering, and Medicine, 2024; Borst et al., 2025

- **Time spent** on social media plays a key role in mental health outcomes and well-being (Sala et al., 2024; Blasko & Castelli, 2022)
- **Other factors** also play a role: nature of online activities, quality of interactions, individual differences in vulnerability and resilience (Orben et al., 2024; Mansfield et al., 2025)
- **Moderate social media use** (≤2 hours/day): linked to greater well-being, social support, social relationships and participation in social and political life (Alcott et al., 2020; Bottaro & Faraci, 2022)
- **High social media use** (>2 hours/day): associated with increased risk of depression and low self-esteem, poor sleep, poor body image and distraction (Webster et al., 2021; Bozzola et al., 2022)

JRC recent and current work on well-being



Computers in Human Behavior Reports 14 (2024) 100404

Contents lists available at ScienceDirect

Computers in Human Behavior Reports

journal homepage: www.sciencedirect.com/journal/computers-in-human-behavior-reports

Review

Social Media Use and adolescents' mental health and well-being: An umbrella review

Arianna Sala [a,*], Lorenzo Porcaro [b], Emilia Gómez [a]

[a] Joint Research Centre, European Commission, Calle Inca Garcilaso, 3, Seville, 41092, Spain
[b] Joint Research Centre, European Commission, Via Enrico Fermi, 2749, Ispra, 21027, Italy

ABSTRACT

This umbrella review analyses the risks and opportunities for adolescents' mental health and well-being associated with Social Media Use (S mitigation proposals presented in systematic, scoping and narrative literature reviews and meta-analyses. Following the PRIOR guidelines, w exclusion criteria for Population (10-19 years), Exposure (Social Media Use) and Outcomes (Well-being, Ill-being, Mental health) and sear from January 2015 to April 2023 in four databases: Scopus, Web of Science, PsycInfo, and Pubmed. We screened titles and abstracts of after conducting the quality assessment based on the AMSTAR 2 protocol, we selected 24 articles on which we performed a thematic analysis relationship between SMU and adolescents' mental health is influenced by several intervening factors: 1) individual demographic and psych 2) individual use of Social Media (SM), and 3) SM' content and design. Furthermore, we describe the risks and opportunities associated from the reviewed articles. We discuss how the limitation to collecting SM data hinders the research on the impact of SMU and how the a design principles by SM platforms would contribute to introducing a societal change to achieve a population-level shift, which is harder to responsible use is only attributed to individuals' choices. Finally, we discuss the opportunities brought about by upcoming regulatory frame Digital Services Act.

European Commission

SCIENCE FOR POLICY BRIEF

Fairness policy brief 2/2024

Loneliness and social media use in the European Union

HIGHLIGHTS

- Approximately 34.5% and 26.1% of respondents aged 16-30 use social networking sites and instant messaging tools for over 2 hours per day, respectively. The corresponding figures for respondents 31 or older are 13.1% and 8.8%.
- Over one third of young respondents exhibit patterns of social media addiction. Approximatively 12% of respondents aged 31 or older fall into this category.
- Spending more than 2 hours per day on social network sites is associated with a substantial increase in the prevalence of loneliness. Intense passive use of social media is also linked with increased loneliness.
- There is not a significant association between intensive use of instant messaging tools or active use of social media and loneliness.
- The relationship between social media use and loneliness does not vary by age group.
- These findings are consistent with previous research and suggest that how social media is used matters more than how often social media is used.

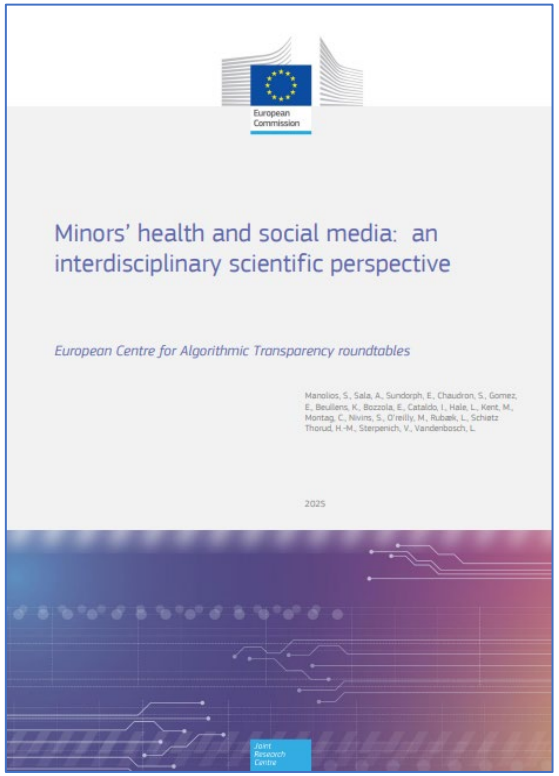
Background

The increasing use of social media worldwide has resulted in a level of interpersonal connectivity never been seen before. This phenomenon has prompted numerous inquiries regarding the impact of social media on society.

Social media enables communication, collaboration, and the exchange of thoughts, images, and ideas between an unlimited number of people worldwide. It can help form new relationships and communities regardless of physical distance. A variety of social media tools enable us to communicate with friends and family members at any time of day and receive immediate feedback from them.

The scientific community has questioned a possible cause and-effect relationship between the increasing use of social media and feelings of loneliness, especially among younger people. Social media users may become increasingly lonely because they replace face-to face relationships with online connections, which lack the intimacy and quality of face-to-face relationships. This concept is known as the displacement hypothesis. The stimulation hypothesis, on the other hand, asserts that using social media can reduce loneliness by boosting existing relationships and making new ones. Recent research suggests that the motivations underlying social media use (e.g. replacing vs enriching existing relationships) and the type of social media can influence the correlation between loneliness and social media use.

Joint Research Centre



European Commission

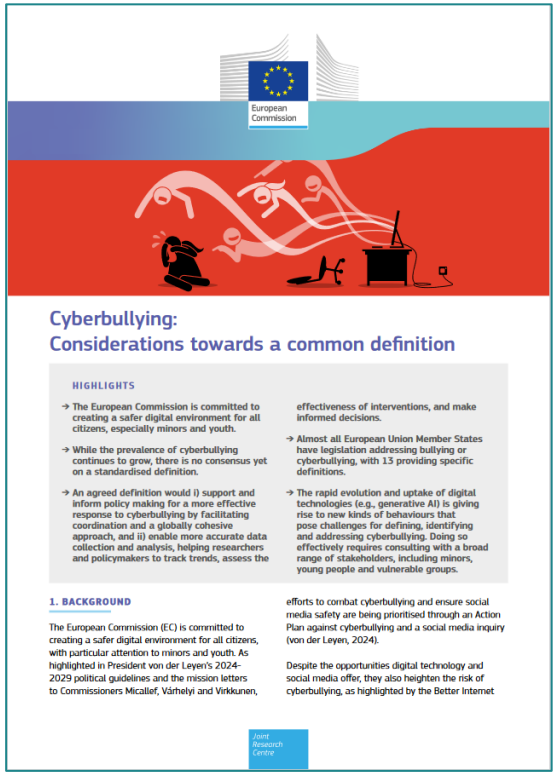
Minors' health and social media: an interdisciplinary scientific perspective

European Centre for Algorithmic Transparency roundtables

Manolios, S., Sala, A., Sundorph, E., Chaudron, S., Gomez, E., Beullens, K., Bozzola, E., Cataldo, I., Hale, L., Kent, M., Montag, C., Nivins, S., O'reilly, M., Rubaek, L., Schiatz Thorud, H.-M., Sterpenich, V., Vandenbosch, L.

2025

Joint Research Centre



European Commission

Cyberbullying: Considerations towards a common definition

HIGHLIGHTS

- The European Commission is committed to creating a safer digital environment for all citizens, especially minors and youth.
- While the prevalence of cyberbullying continues to grow, there is no consensus yet on a standardised definition.
- An agreed definition would i) support and inform policy making for a more effective response to cyberbullying by facilitating coordination and a globally cohesive approach, and ii) enable more accurate data collection and analysis, helping researchers and policymakers to track trends, assess the effectiveness of interventions, and make informed decisions.
- Almost all European Union Member States have legislation addressing bullying or cyberbullying, with 13 providing specific definitions.
- The rapid evolution and uptake of digital technologies (e.g., generative AI) is giving rise to new kinds of behaviours that pose challenges for defining, identifying and addressing cyberbullying. Doing so effectively requires consulting with a broad range of stakeholders, including minors, young people and vulnerable groups.

1. BACKGROUND

The European Commission (EC) is committed to creating a safer digital environment for all citizens, with particular attention to minors and youth. As highlighted in President von der Leyen's 2024-2029 political guidelines and the mission letters to Commissioners Micallef, Várhelyi and Virkkunen, efforts to combat cyberbullying and ensure social media safety are being prioritised through an Action Plan against cyberbullying and a social media inquiry (von der Leyen, 2024).

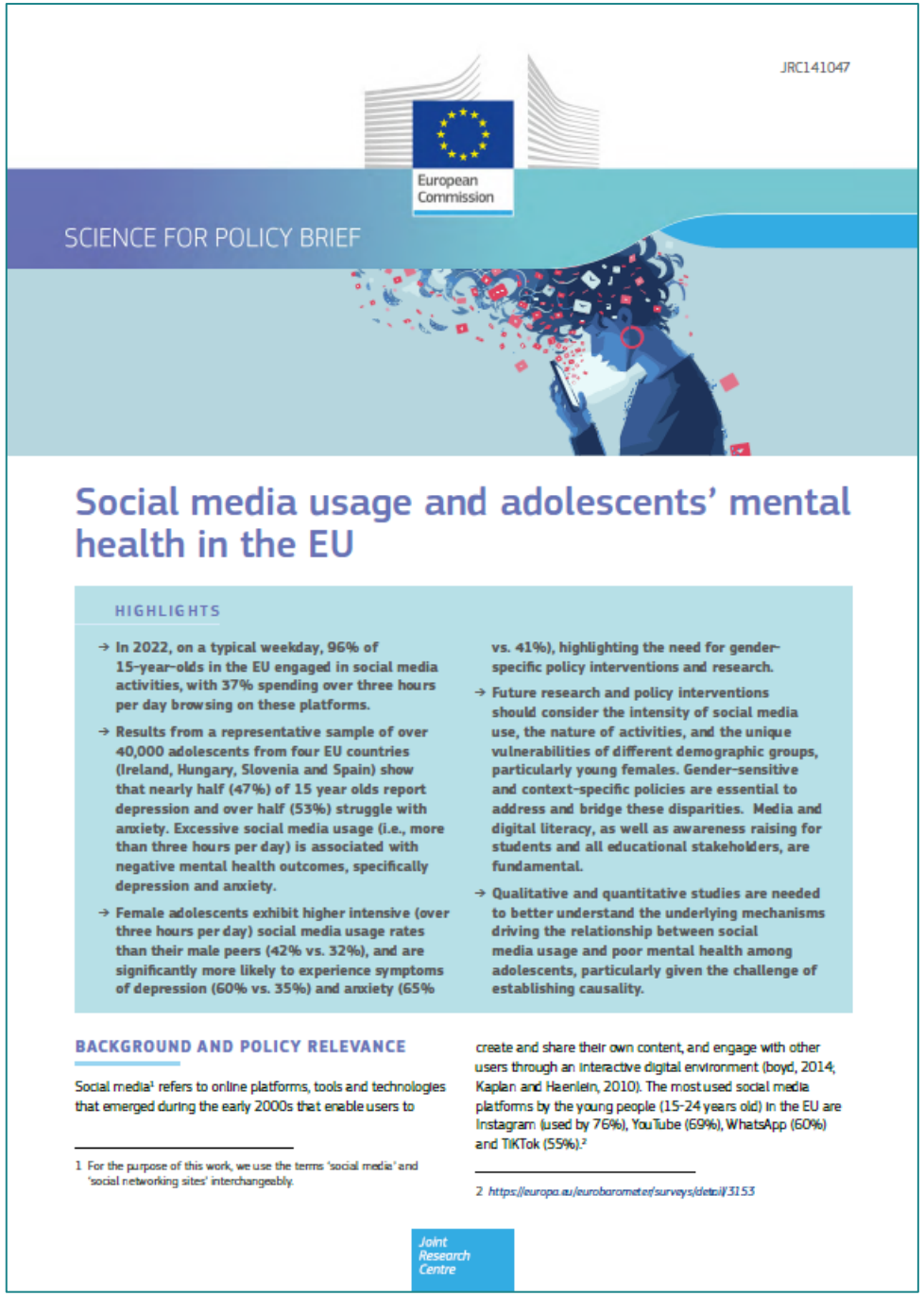
Despite the opportunities digital technology and social media offer, they also heighten the risk of cyberbullying, as highlighted by the Better Internet

Joint Research Centre

Upcoming!

- Well-being in digital education
- Cyberbullying: Definitions, insights from academic literature and overview of legislation across the European Economic Area

European Commission



https://publications.jrc.ec.europa.eu/repository/handle/JRC141047

European Commission

Research Questions

- Is there a relationship between social media usage and adolescents' mental health?
- Is this relationship affected by the intensity of social media usage?
- Are there differences across genders?

Data, Methodolgy and Results

Data

2022 OECD Programme for International Student Assessment (PISA) data

- 15-year-olds in school grade 7 or higher
  - ICT survey on digital behaviour: 22 EU MS (all EU countries except Cyprus, France, Luxembourg, Netherlands and Portugal)
  - Well-being survey including mental health, among others: 5 EU MS (Hungary, Ireland, Netherlands, Slovenia, Spain)

Sample of analysis:

- ICT + Well-being surveys
- 4 EU MS: Hungary, Ireland, Slovenia and Spain
- A representative sample of **40,102 adolescents** in 1743 schools

Methodology

1. Descriptive analysis of ICT use in 22 MS
2. Descriptive analysis of mental health in 4 MS
3. Probabilistic (Logit) model of the relationship between ICT use and mental health
    - Dependent variable: 0 for no reported anxiety or depression; 1 for reported anxiety or depression (combining different levels of intensity).
    - Covariates: gender; year of birth; Index of economic, social and cultural status; reading outcomes; family support; sense of belonging at school; experience with bullying; and country.

Results:

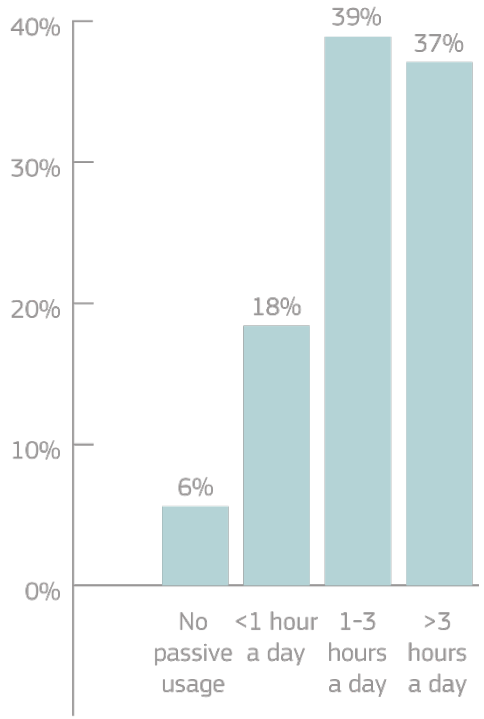
EU adolescents’ social media usage patterns

During a typical weekday in 2022, 96% of 15-year-old engage in social media activities

European Commission

37% of 15-year-old in the EU engage in social media activities >3 hours per day

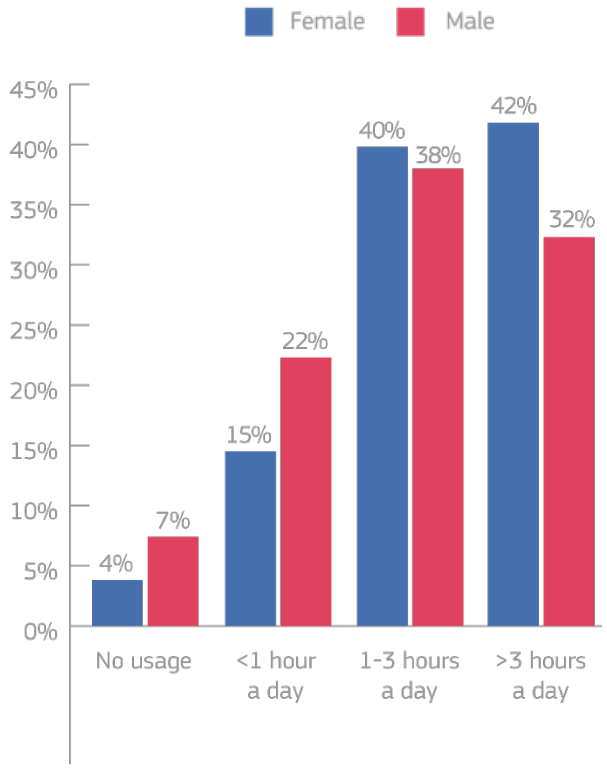
Percentage of 15-year-old by time of social media usage



Source: PISA 2022

Female users are more likely than males to spend over 3 hours a day on social media

Percentage of 15-year-old by gender and time of social media usage



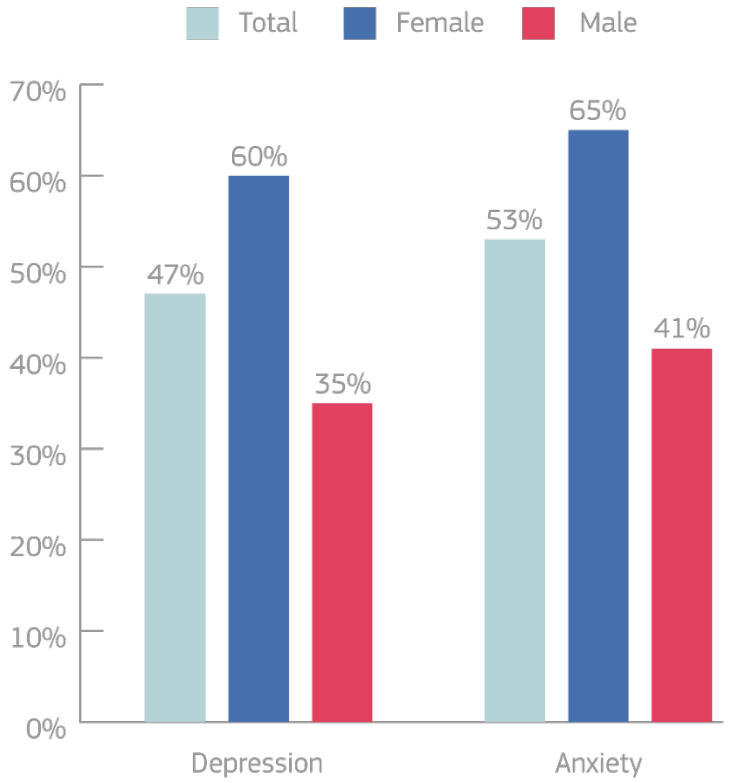
Source: PISA 2022

Results:

Adolescents declared mental health in 4 countries

High levels of poor adolescent declared mental health in the 4 countries (HU, IE, SI, ES) with wide gender differences

Share of 15-year-old experiencing poor mental health by gender



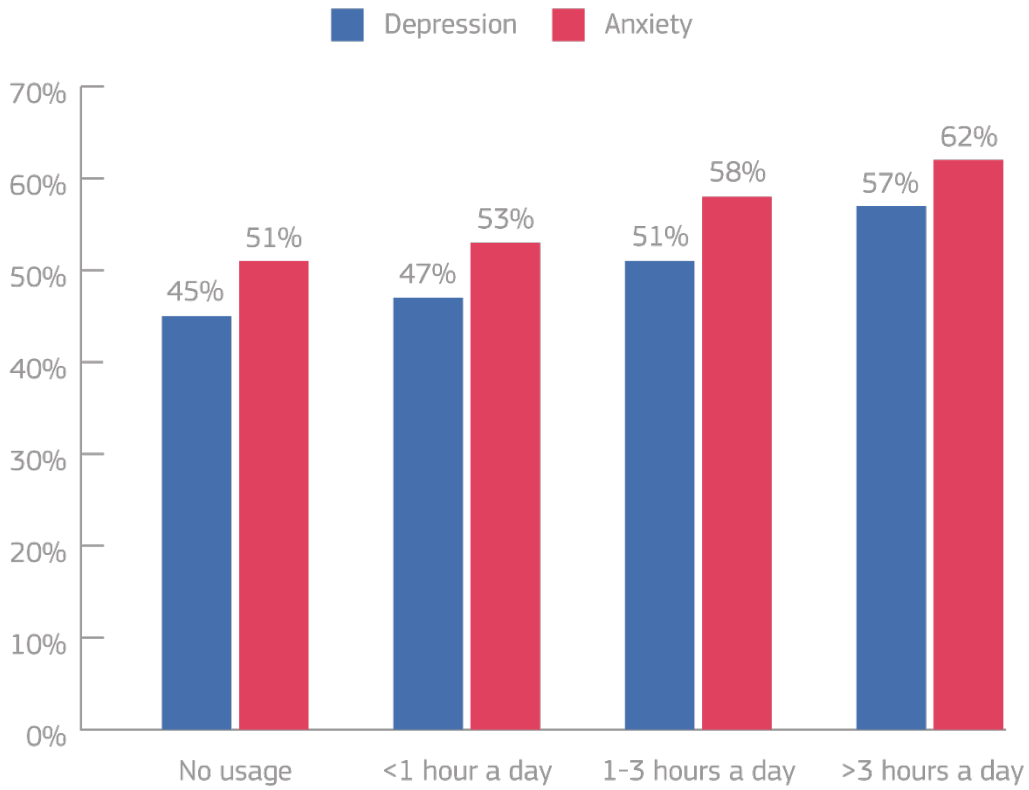
Source: PISA 2022

Results:

Correlation between adolescents' ICT use and mental health

Positive correlation between high social media usage and self-reported poor mental health

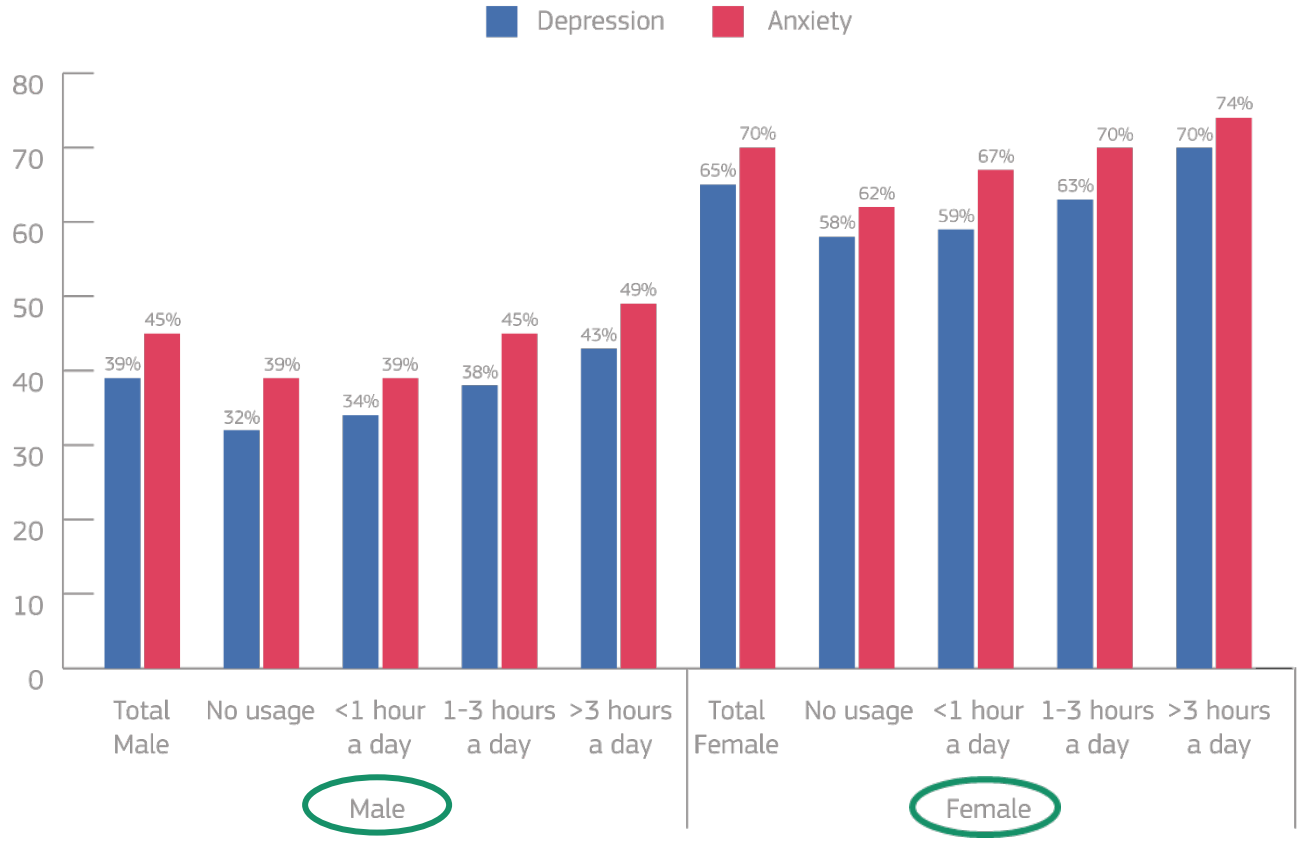
Estimated probabilities of 15-year-old experiencing poor mental health by time spent on social media



Note: Marginal probabilities from the logit regression analysis accounting for socio-economic differences. PISA 2022.

Time spent on social media has a similar effect on mental health across genders

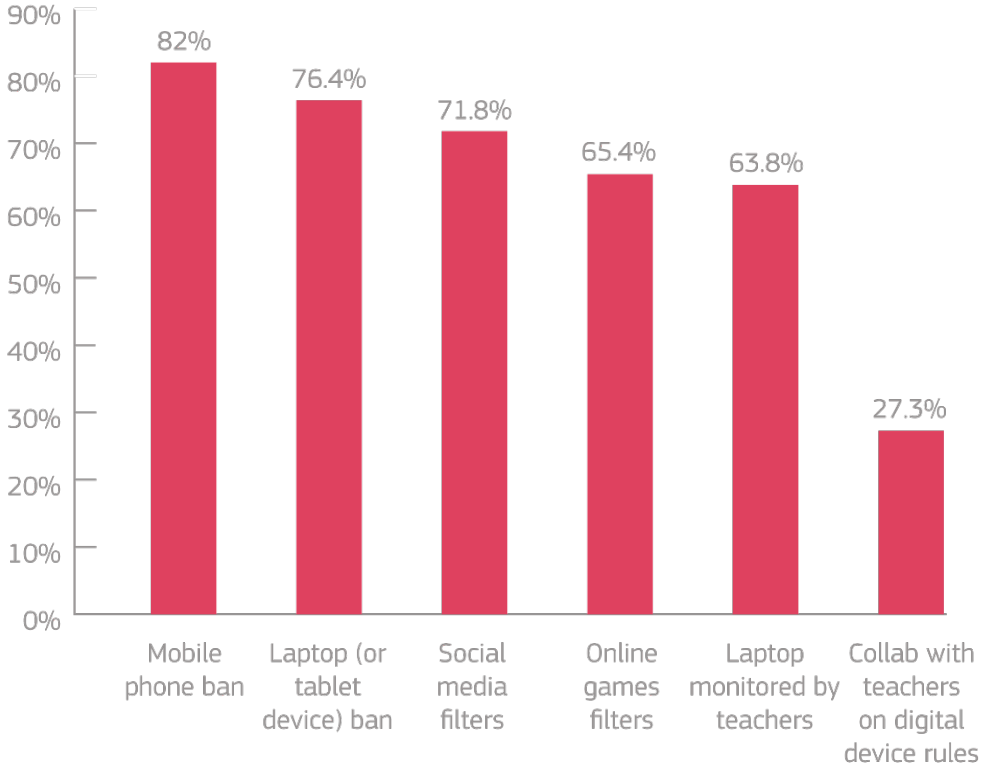
Estimated probabilities of 15-year-old experiencing poor mental health by gender and time spent on social media



Note: Marginal probabilities from the logit regression analysis accounting for socio-economic differences. PISA 2022.

Adolescents oppose blanket tech bans but support collaborative rule-making in schools

Percentage of 15-year-old disagreeing with ICT use regulations



Source: PISA 2022.

Conclusions

Policy implications

- **Need for multi-dimensional interventions**:
  - Reducing social media's addictive features: DSA (Arts. 34 & 35-addictive design)
  - Promoting digital literacy and awareness: healthy social media use & self-regulation
  - Training educational stakeholders, including parents: opportunities and risks
- **Gender-sensitive policies**
- **Context-specific approaches**
- **Youth involvement in the dialogue**

Future research

- **Understanding the link between social media use and poor mental health** is essential for developing targeted and effective measures to mitigate the potential negative effects

1. **Need for systematic data collection on well being and ICT use**, if possible with **longitudinal data** to monitor social media usage across the EU.

2. **Complement** self-reported data **with actual usage data** on social media activities for deeper insights on factors influencing poor mental health**.**

3. **Complementary qualitative research with participatory methods,** to capture adolescents' perspectives and needs on social media usage and its impact

Thank you

European Commission

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Search Menu

Digital Futures for Children | About us | Our work | Your rights online | Events | Contact us

Digital Futures for Children centre (DFC)

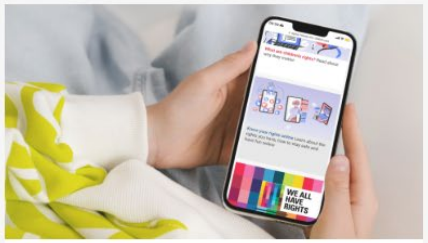
One in three internet users globally is a child: What do we know about them?

Digital Futures for Children centre (DFC)

As a joint LSE and 5Rights centre, we support an evidence base for advocacy, facilitate multidisciplinary dialogues and amplify children's voices.

Sonia Livingstone

Our work Access all our publications and learn about our ongoing research projects



Your rights online Learn about your rights with our resource for children and young people

Global research database access robust research about children and the digital environment from around the world

Events Join our upcoming events and catch up on what you have missed

Contact us Keep up with our research and find out how to contribute

Newsletters Read our latest updates and sign up

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

5RIGHTS FOUNDATION

Digital Futures For Children

United Nations | UNITED NATIONS HUMAN RIGHTS OFFICE OF THE HIGH COMMISSIONER

What are human rights? ▾ | Topics ▾ | Countries ▾ | Instruments & mechanisms ▾ | Latest ▾

Convention on the Rights of the Child

United Nations CRC/C/GC/25

Convention on the Rights of the Child

Distr.: General
2 March 2021

Original: English

Committee on the Rights of the Child

General comment No. 25 (2021) on children's rights in relation to the digital environment

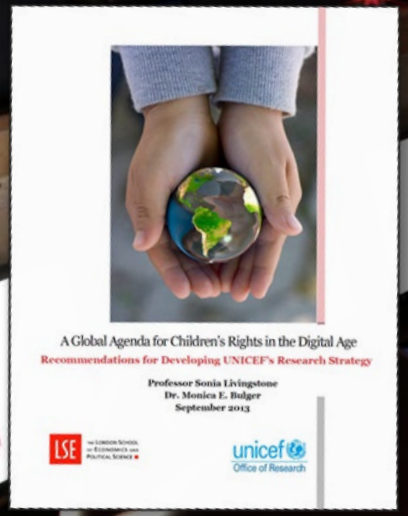
E. Data collection and research

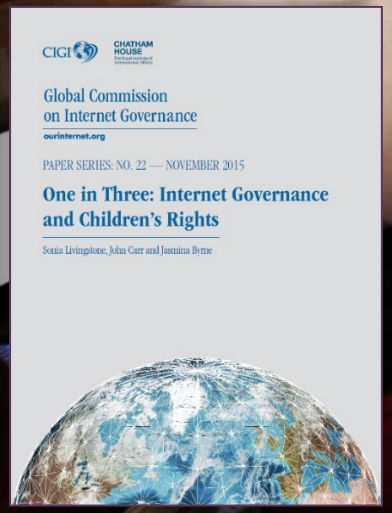
30. Regularly updated data and research are crucial to understanding the implications of the digital environment for children's lives, evaluating its impact on their rights and assessing the effectiveness of State interventions. States parties should ensure the collection of robust, comprehensive data that is adequately resourced and that data are disaggregated by age, sex, disability, geographical location, ethnic and national origin and socioeconomic background. Such data and research, including research conducted with and by children, should inform legislation, policy and practice and should be available in the public domain. Data collection and research relating to children's digital lives must respect their privacy and meet the highest ethical standards.

2000 100 million online in developing world

2015 2 billion online in developing world

1in3 internet users is under 18





globalkidsonline.net

2025, a decade later, we know some more . . .

GLOBAL KIDS ONLINE

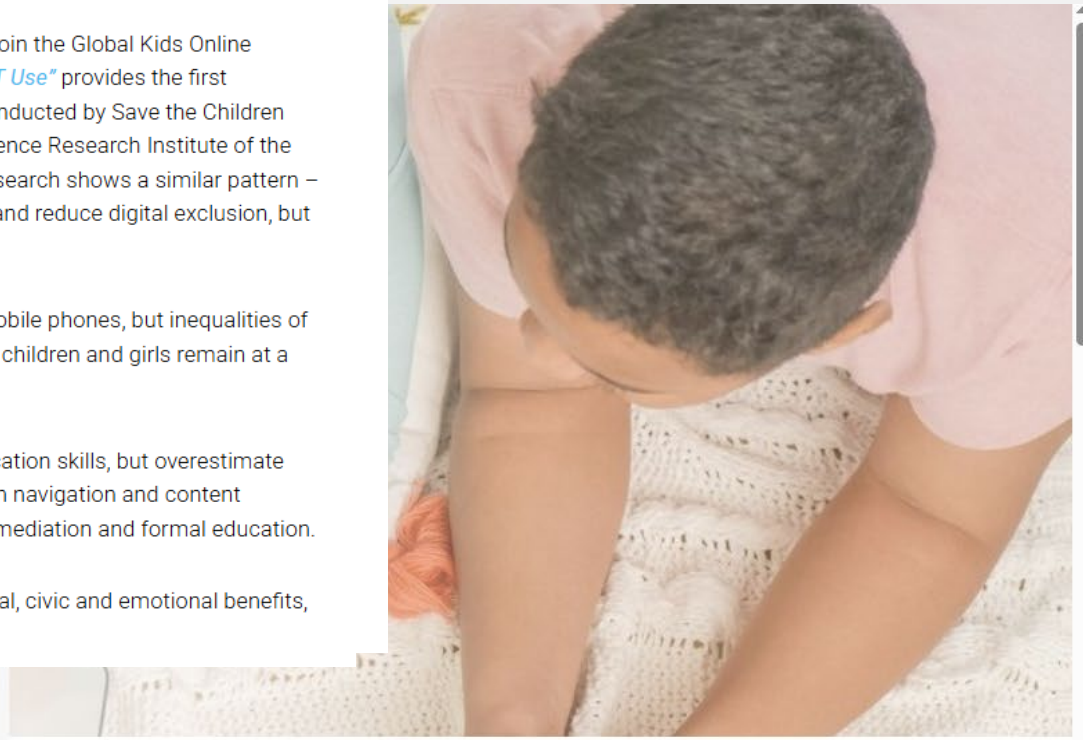
Tools for researchers

Research results

Research updates
About the project
Participating countries
Contact

Finally, in **Bolivia**, one of the newest countries to join the Global Kids Online network, the study *"Risks and Opportunities of ICT Use"* provides the first nationwide evidence on children's digital lives. Conducted by Save the Children Bolivia, ChildFund Bolivia and the Behavioural Science Research Institute of the Universidad Católica Boliviana "San Pablo," the research shows a similar pattern – greater internet access can create opportunities and reduce digital exclusion, but also increases children's exposure to online risks:

- Most children access the internet mainly via mobile phones, but inequalities of geography, income and gender mean that rural children and girls remain at a disadvantage.
- Children report strong technical and communication skills, but overestimate their abilities overall; gaps remain in information navigation and content creation, highlighting the importance of active mediation and formal education.
- Digital participation offers important educational, civic and emotional benefits, but recreational uses still dominate.

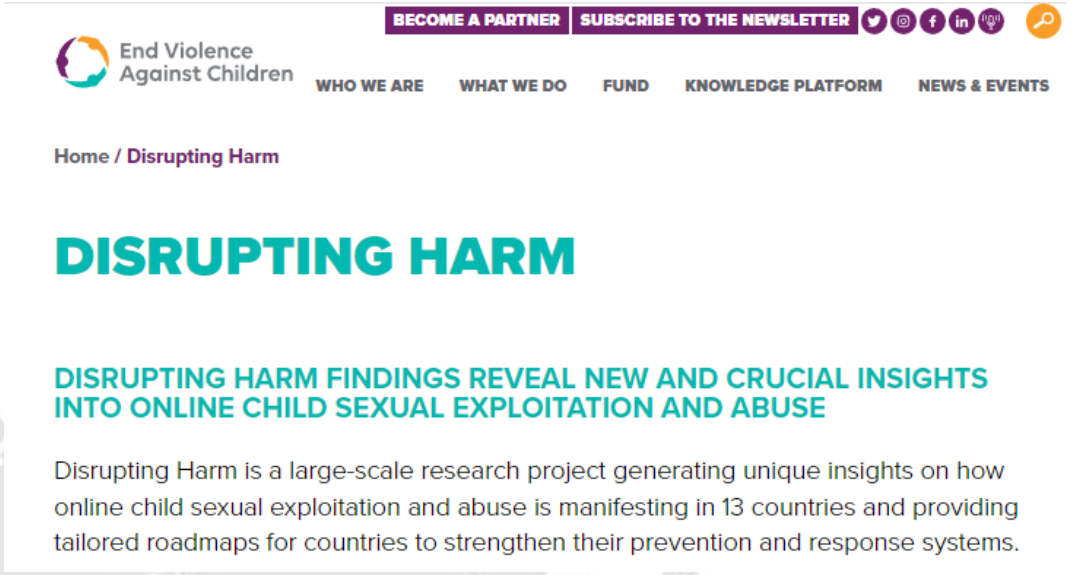


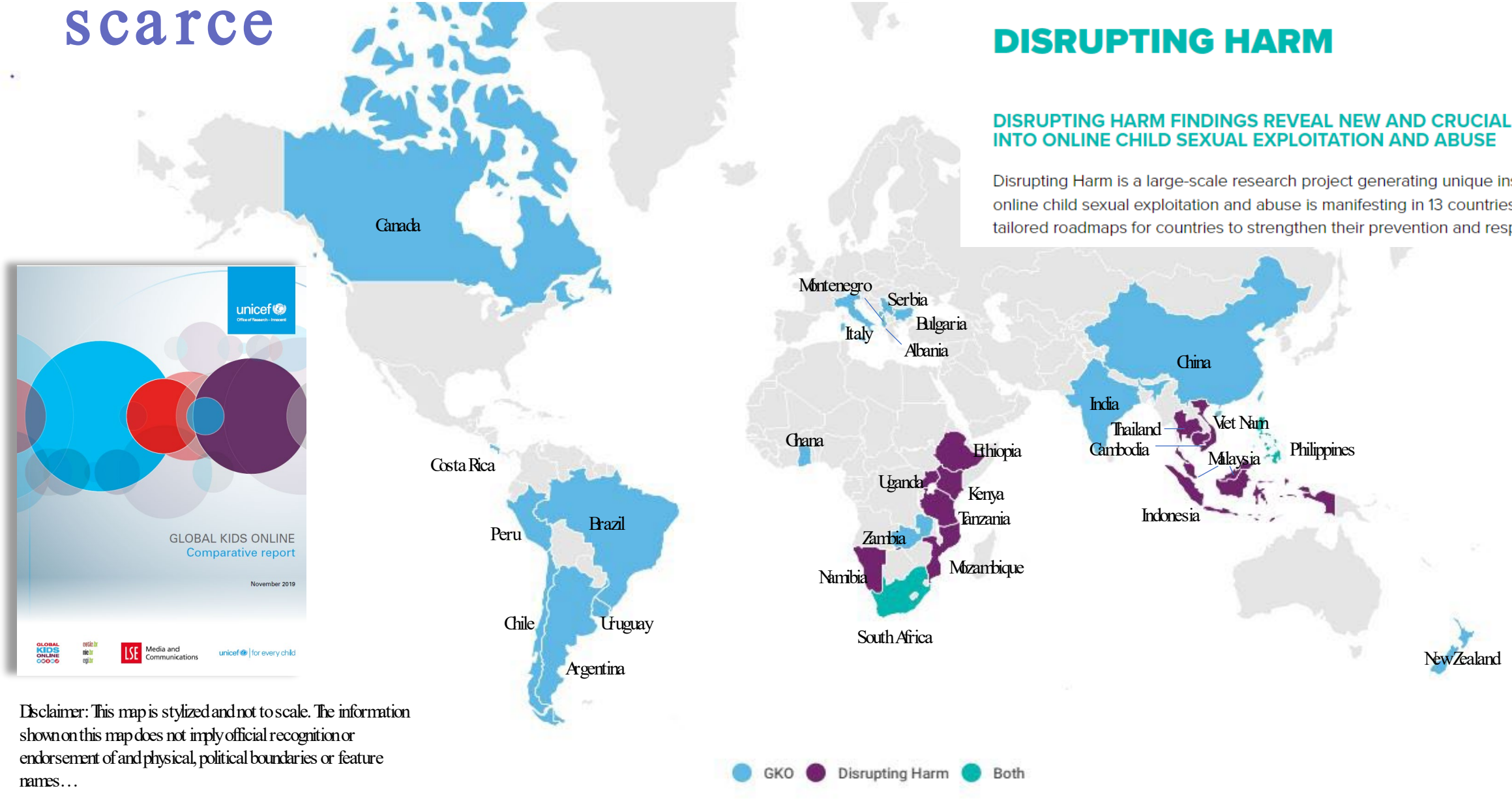
Three new Global Kids Online reports have just been launched by the LATAM network – in Argentina, Brazil, and Bolivia. The findings highlight today's public policy dilemma: the more children gain internet access, the more societies can overcome forms of digital exclusion and inequality, but at the same time, the more children become exposed to online risks of harm.

So, risks to well-being without or with access

Digital Futures For Children
Research at LSE and 5Rights Foundation

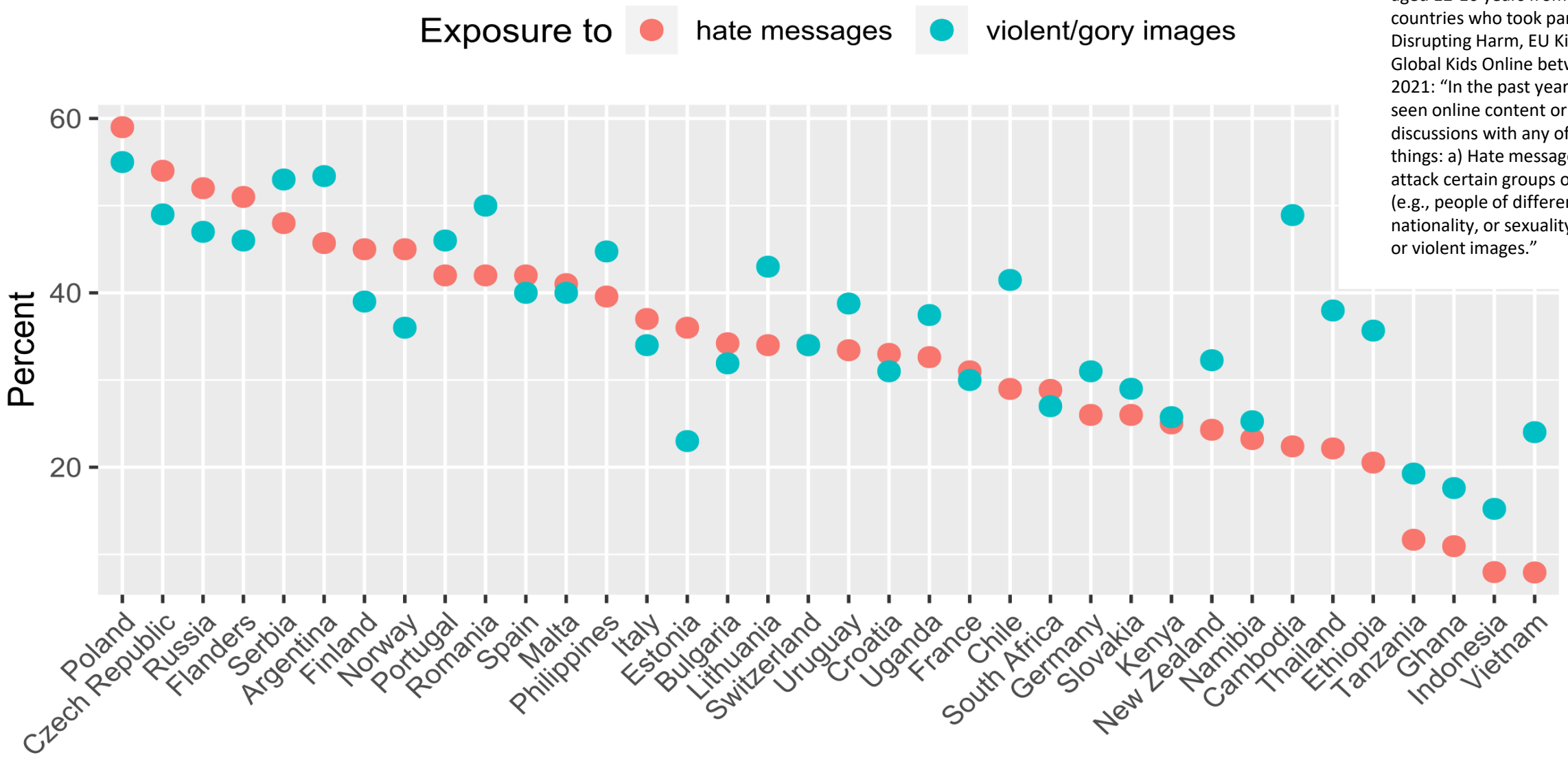
Comparative research is scarce





Disclaimer: This map is stylized and not to scale. The information shown on this map does not imply official recognition or endorsement of and physical, political boundaries or feature names…

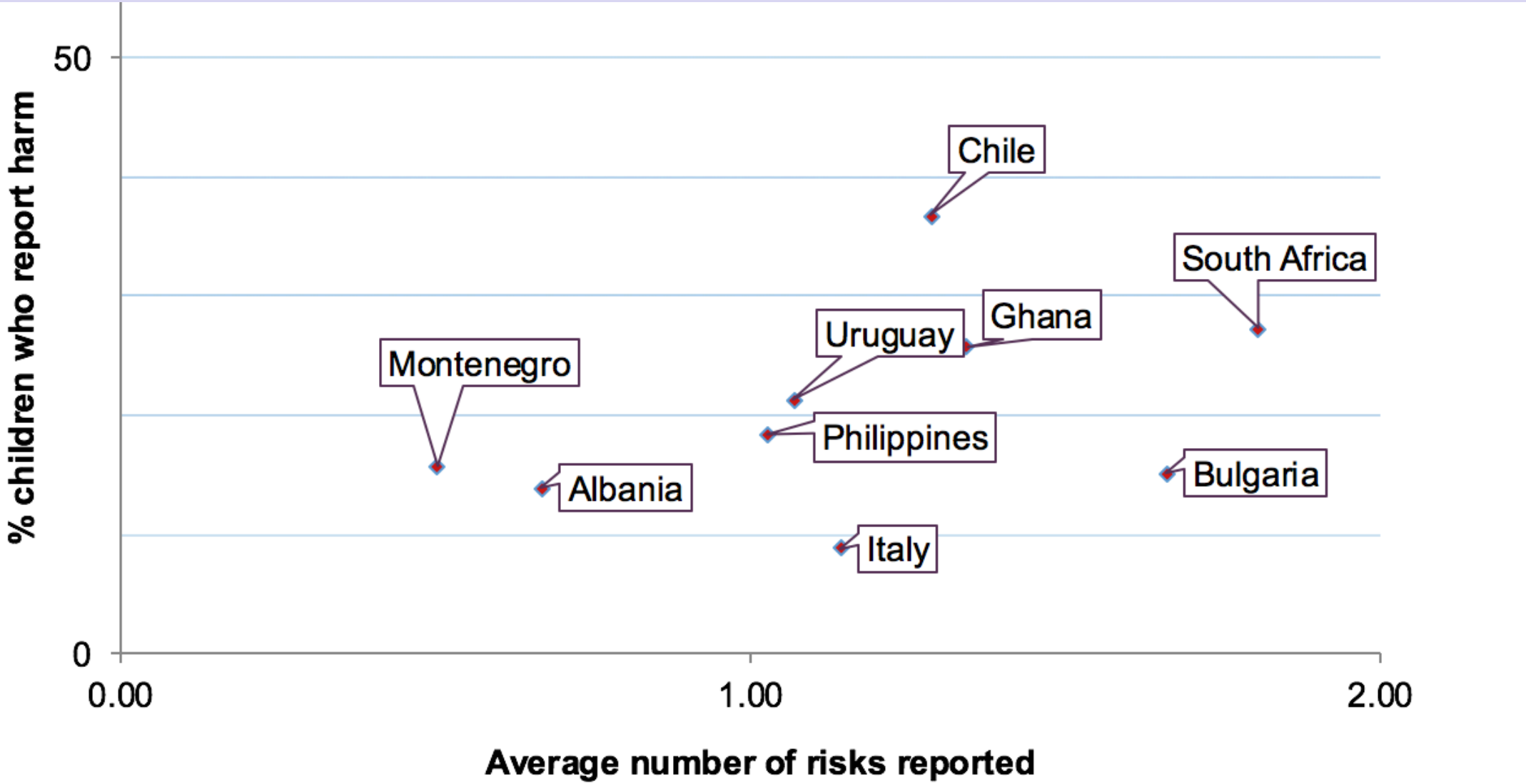
Comparative data are informative

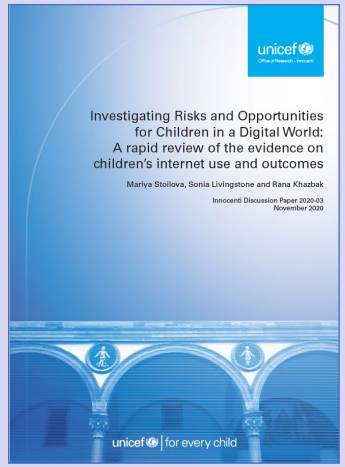


Data from 42,362 internet users aged 12-16 years from 36 countries who took part in Disrupting Harm, EU Kids Online or Global Kids Online between 2016-2021: "In the past year, have you seen online content or online discussions with any of these things: a) Hate messages that attack certain groups or individuals (e.g., people of different religion, nationality, or sexuality); b) Gory or violent images."

http://globalkidsonline.net/hate-and-violence/

Pathways from risk to harm – or wellbeing





GLOBAL KIDS ONLINE

Measurement challenges – and resources

GLOBAL KIDS ONLINE

Tools for researchers

Research results

Research updates

About the project

Participating countries

Contact

Q1 Access: Are you able to access the internet when you want to or need to? Frequency scale.

Q2 Barriers: How often do you experience these things? Frequency of 11 possible barriers to internet access.

Q3: Frequency: How often do you go online or use the internet at the following places? School, home, somewhere else.

Q4 Devices: How often do you go online or use the internet using the following devices? Mobile phone, computer, tablet, console or TV.

Q5 Activities: How often have you done these things online or on a phone in the past MONTH? 15 activities (learning, civic, creative, social, etc)

Q6 Skills: How true are these things for you? Self-rating for 10 operational, informational, social, creative and mobile digital skills.

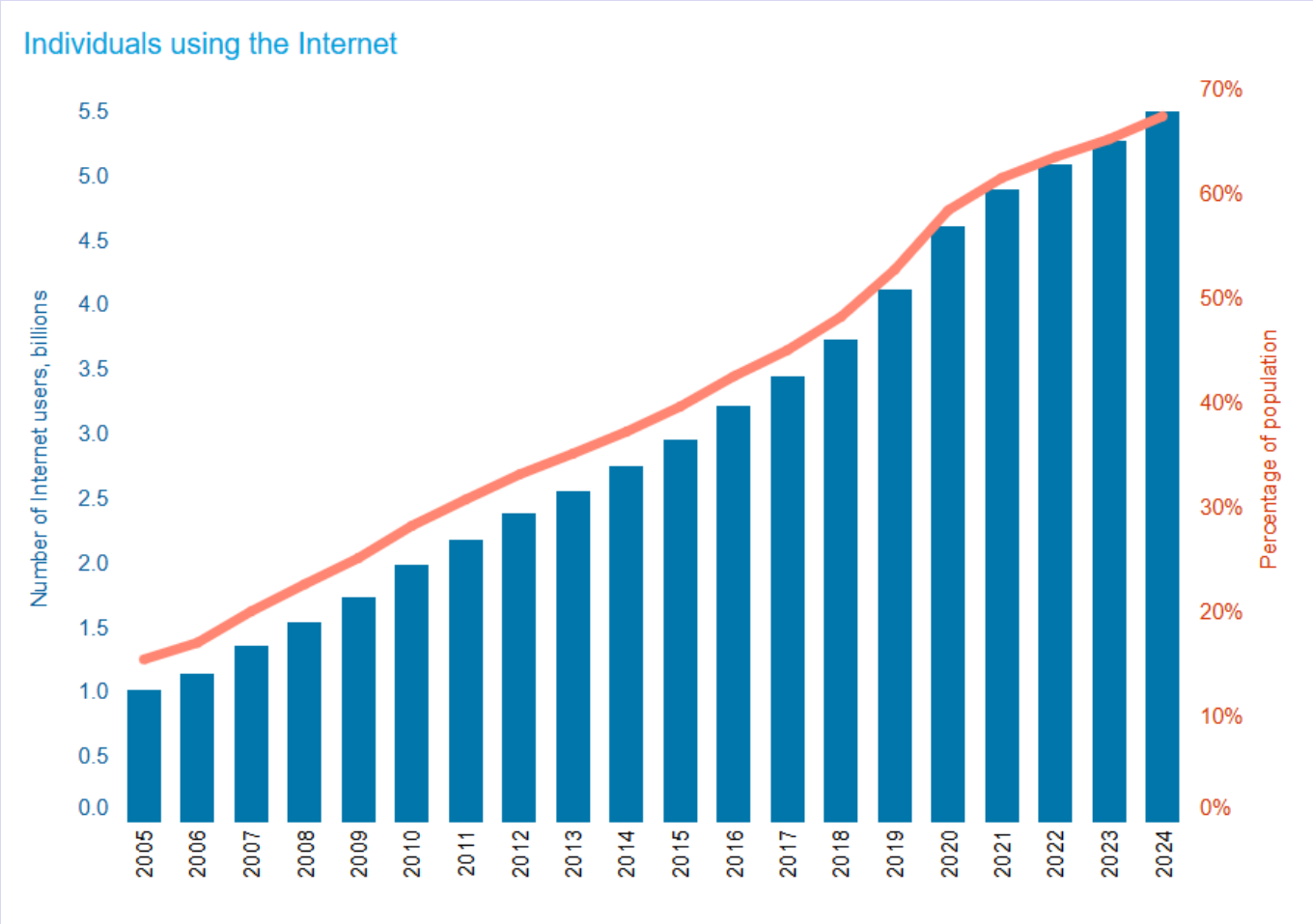
Q7 Harm: In the PAST YEAR, how often, if ever, has anything happened online or on a phone that bothered or upset you in some way?

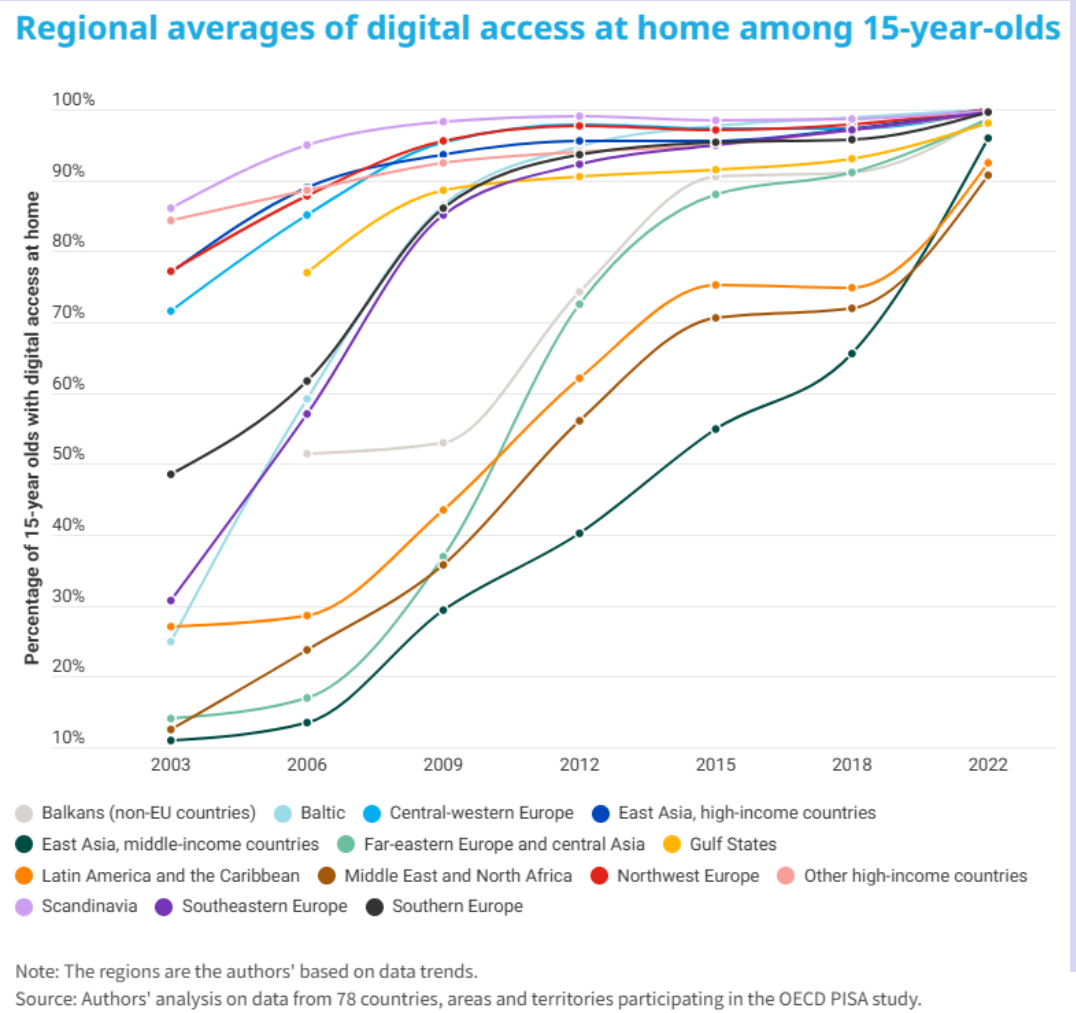
Q8: Risks: In the PAST YEAR, has any of the following happened to you on the internet or on a phone? List of 7 risks. **Q9 Risk frequency**

Q10 Excessive use: Frequency of 5 options (missed meals or sleep, family conflict, dropped grades, etc.).

Q11 Social support: Last time something happened online or on a phone that bothered or upset you, did you talk to (11 types of) people?

Keeping up with a changing digital landscape



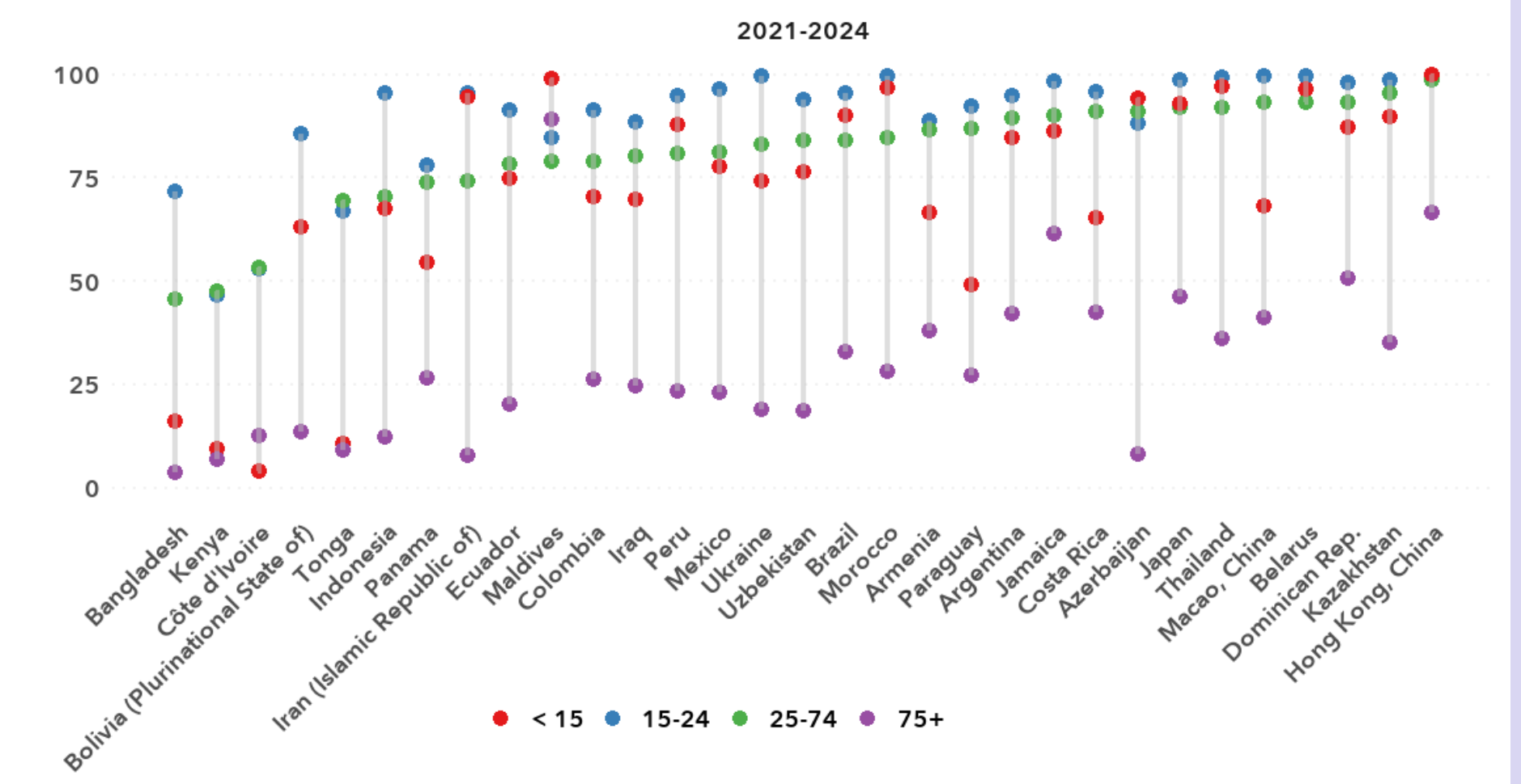


Digital Futures For Children
Research at LSE and 5Rights Foundation

Left: https://www.itu.int/itu-d/reports/statistics/2024/11/10/ff24-internet-use/

Right: https://www.unicef.org/innocenti/reports/childhood-digital-world

Few countries measure children's internet use



Note: Data are from the latest year with data available in the given period. Countries are ordered by Internet use for 25-74-year-olds in 2021-2024. Only countries with data on Internet use for children under 15 (3+, 6+, 10+, 14+) in 2021-2024 are included.

Digital Futures For Children
Research at LSE and 5Rights Foundation

Source: ITU DataHub https://datahub.itu.int/

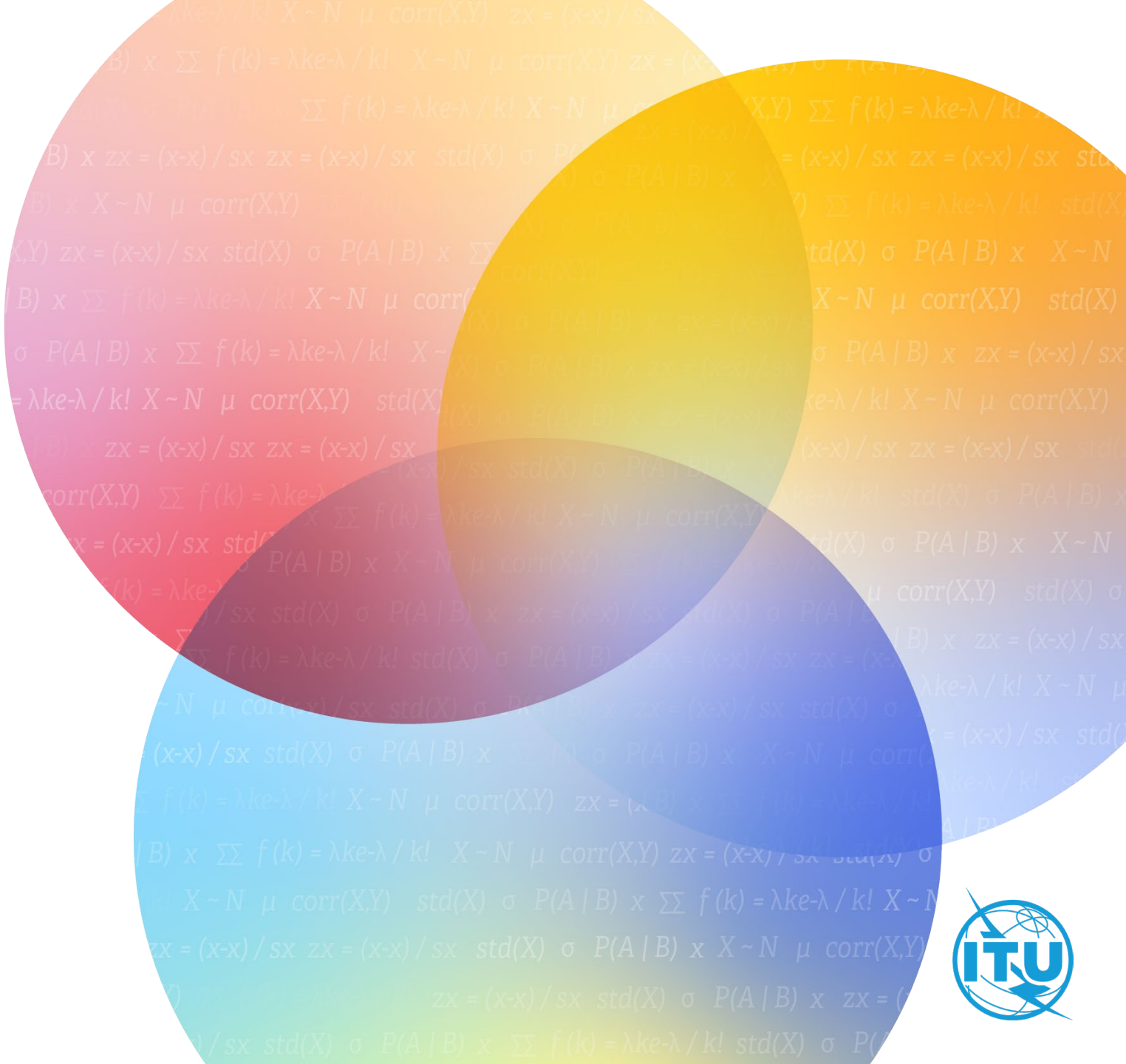
Conclusions

WTIS-25

ITU@Work

Information session

23 September 2025



Leading the global ICT statistics agenda

The International Telecommunication Union (ITU) leads the global ICT statistics agenda, supporting evidence-based decision-making to drive universal and meaningful connectivity and sustained digital transformation. ITU's statistical activities cover the entire data lifecycle. The ICT Data and Analytics Division (IDA), part of ITU-D's Digital Knowledge Society Department, carries out most of this work.

Statistical standards

Through the Expert Group on Telecom/ICT Indicators (EGTI) and the Expert Group on ICT Household Indicators (EGH), ITU defines and updates international statistical standards for ICT indicators.

Data collection & dissemination

IDA compiles statistics for hundreds of ICT indicators, based on data collected from over 200 economies; it computes global, regional and country group estimates. **The data is available for free on the ITU DataHub**

Analysis & research

Publications of the *Measuring Digital Development* series assess the state of global connectivity, tackle specific themes, and identify solutions.

Data science for official statistics

IDA's data science practice leverages big data and new methods to enhance the accuracy, timeliness, and granularity of ICT statistics.

Capacity development & technical assistance

IDA supports the statistical community and other stakeholders, including policymakers, by developing technical documentation, training materials, online courses, workshops, and providing technical assistance.

Global cooperation & engagement

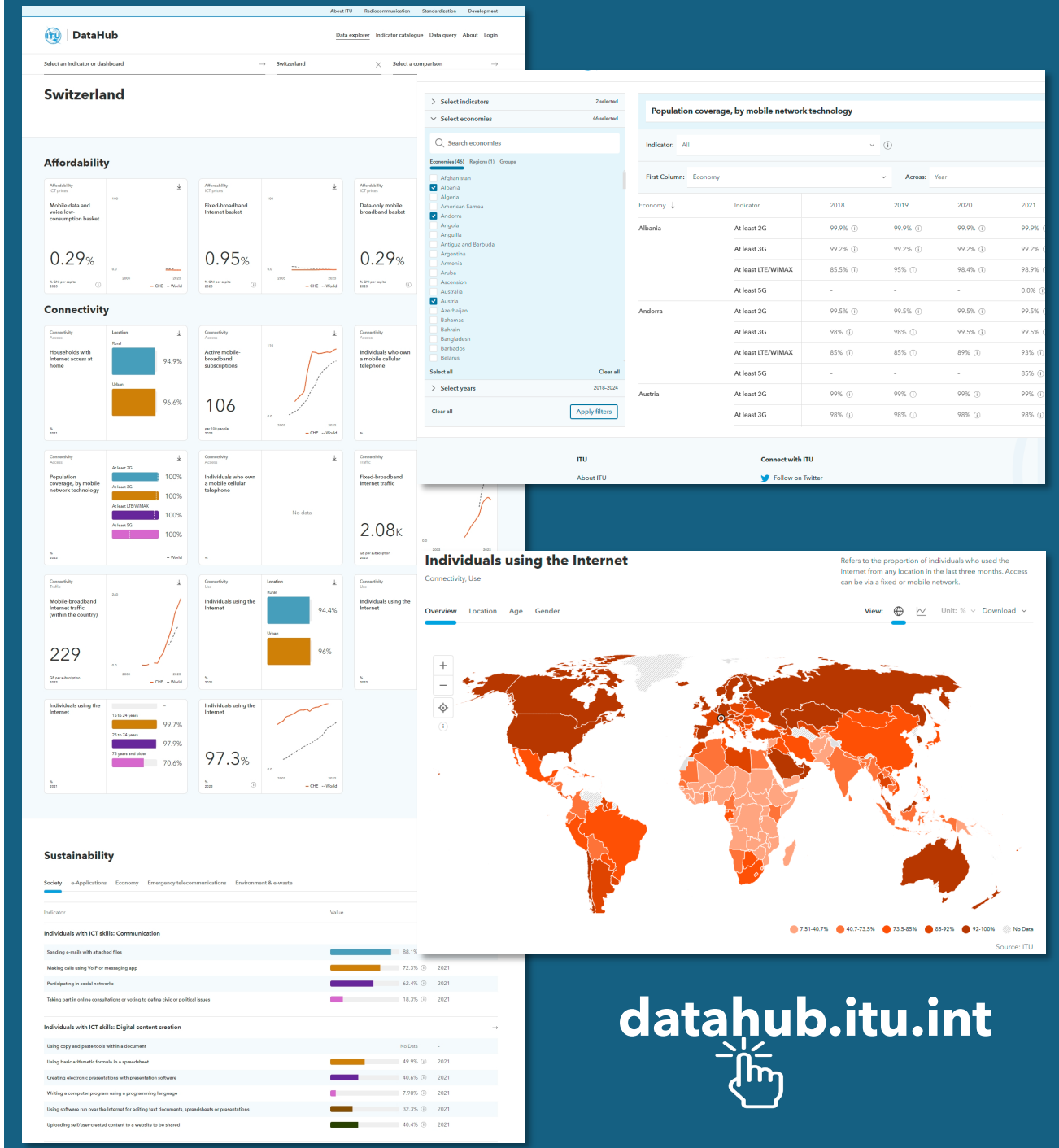
IDA organises events, including WTIS, the premier global event on ICT statistics, and cooperates with various organizations, to mobilize resources, advance the statistics agenda, leverage synergies, scale up initiatives, and maximize impact.

ITU DataHub

- Flagship platform for trusted digital development stats
- Free, up-to-date, globally comparable ICT statistics

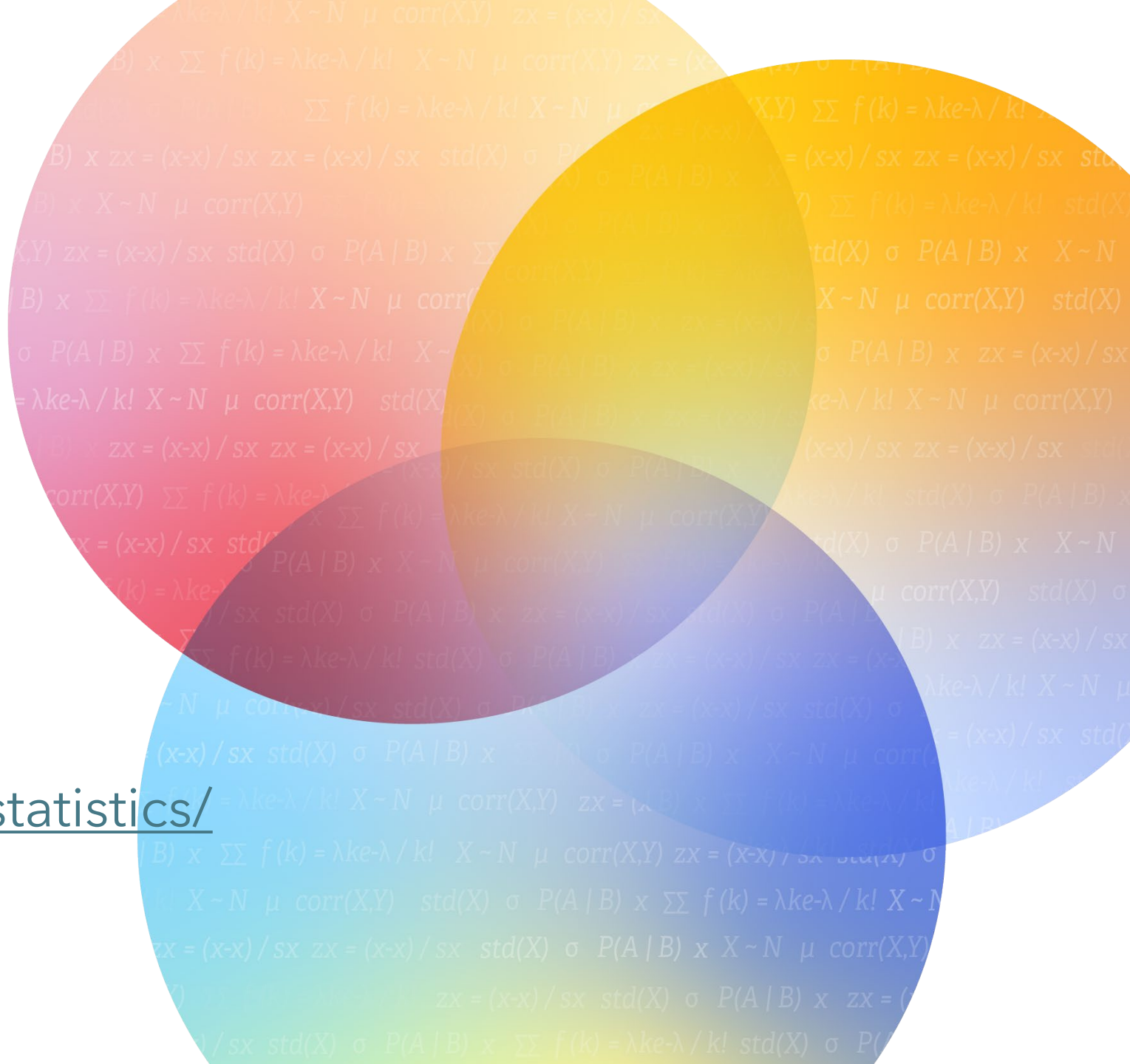
Launching in 2025:

- AI-powered chatbot
- Custom country profiles
- New dashboards & indicators
- Enhanced data presentation
- More data



Thank you!

- datahub.itu.int
- indicators@itu.int
- www.itu.int/itu-d/sites/statistics/



20TH WORLD TELECOMMUNICATION/ICT
INDICATORS SYMPOSIUM

ITU WTIS
GENEVA2025

22–23 September 2025
Geneva, Switzerland

Broadening the scope: Monitoring global digital commitments

Ms Scarlett Fondeur Gil

(Moderator)

Economic Affairs Officer
UN Conference on Trade and Development (UNCTAD)

PARTNERSHIP ON MEASURING ICT FOR DEVELOPMENT

Partnership on Measuring ICT for Development

- Global initiative to improve availability and quality of internationally comparable ICT statistics
- Main mechanism for the coordination of ICT statistics internationally
- Members: 14 international and regional agencies involved in official ICT statistics
- Steering Committee (2023-2025): ITU, UNCTAD, and UN DESA
- Core List of ICT Indicators endorsed by UN Statistical Commission
- Conducted regional workshops and trainings to help countries develop capacity

ILO · ITU · eurostat · OECD BETTER POLICIES FOR BETTER LIVES · unesco Institute for Statistics · UN trade & development UNCTAD · United Nations Department of Economic and Social Affairs · THE WORLD BANK

UNEP · BASEL CONVENTION · unitar United Nations Institute for Training and Research · UNITED NATIONS ECLAC · ESCAP Economic and Social Commission for Asia and the Pacific · ECA · UNITED NATIONS ESCWA

Core list of ICT indicators

The core list of ICT indicators is composed of over 50 indicators in the following areas:

- ICT infrastructure and access
- ICT access and use by households and individuals
- ICT access and use by enterprises
- ICT sector and trade in ICT goods
- ICT in education
- ICT in government
- E-waste indicators

https://www.itu.int/en/ITU-D/Statistics/Documents/coreindicators/Core-List-of-Indicators_March2022.pdf

The Role of ICT Measurement Today

- ICTs are drivers of development and inclusion.
- Universal Meaningful Connectivity (UMC), WSIS Action Lines, and the Global Digital Compact (GDC) require measurement for implementation.
- Data helps monitor progress, identify gaps, and guide policy.

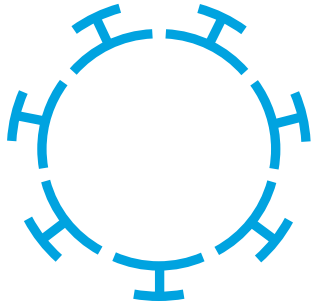
Research and Analysis

Digital Economy Report, Technical Notes, Manuals, Handbook

Core indicators on the digital economy

Regular data compilation

UNCTAD Data Hub statistical portal



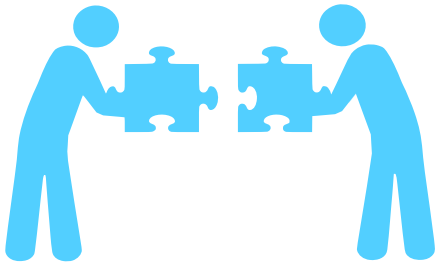
Consensus Building

Partnership on Measuring ICT for Development

Working Group on Measuring E-Commerce and the Digital Economy, 4-5 December 2025

Measuring Digital Trade

Other expert groups



Technical Assistance

Workshops on measuring digital trade

In-person and online training courses based on UNCTAD Manual

Advisory services

Depending on availability of resources

Mandate to be renewed in October 2025: will consider digital economy measurement to support digital economy policy, WSIS+20 Review, and GDC commitments.

Mapping GDC, UMC, WSIS Action Lines against ICT Core Indicators

Ms Esperanza Magpantay,
Senior Statistician
International Telecommunication Union (ITU)

Mapping ICT Indicators to WSIS Action Lines, UMC and the GDC

Indicator Group	Core ICT Indicators	WSIS Targets	WSIS Action line	GDC	UMC
ICT infrastructure and access	A10 Multichannel TV subscriptions per 100 inhabitants			hospitals to the Internet	
ICT access and use by households and individuals	HH1 Proportion of households with a radio	Target 8. Ensure that all of the world's population has access to television and radio services	C2. Information and communication infrastructure C3. Access to information		
ICT access and use by households and individuals	HH2 Proportion of households with a TV	Target 8. Ensure that all of the world's population has access to television and radio services	C2. Information and communication infrastructure C3. Access to information		
ICT access and use by households and individuals	HH3 Proportion of households with telephone	Target 1 - Connect all villages with ICTs and establish community access points	C2. Information and communication infrastructure C3. Access to information		
ICT access and use by households and individuals	HH4 Proportion of households with a computer			Objective 1.1 - Connect all people, schools and hospitals to the Internet	
ICT access and use by households and individuals	HH5 Proportion of individuals using a computer			Objective 1.1 - Connect all people, schools and hospitals to the Internet	
ICT access and use by households and individuals	HH6 Proportion of households with Internet			Objective 1.1 - Connect all people, schools and hospitals to the Internet	Universality targets
ICT access and use by households and individuals	HH7 Proportion of individuals using the Internet	Target 1 - Connect all villages with ICTs and establish community access points	C2. Information and communication infrastructure C3. Access to information and	Objective 1.1 - Connect all people, schools and hospitals to the Internet Objective 1.2 - Make digital technologies more	Universality targets
ICT access and use by households and individuals	HH8 Proportion of individuals using the Internet, by location			Objective 1.1 - Connect all people, schools and hospitals to the Internet	
ICT access and use by households and individuals	HH9 Proportion of individuals using the Internet, by type of activity			Objective 1.1 - Connect all people, schools and hospitals to the Internet	
		Target 10. Ensure that more than half the world's inhabitants have access to ICTs within	C2. Information and communication infrastructure C3. Access to information	Objective 1.1 - Connect all people, schools and hospitals to the Internet Objective 1.2 - Make	

Why This Mapping Matters?

1. Assessment and Monitoring tools for:
   a. Global Digital Compact
   b. UMC Targets
   c. WSIS targets and action lines
2. Identifying areas where core indicators are missing.

Early insights:

- Indicators needed in areas such as employment, health, security, governance, AI, etc.

Next steps:

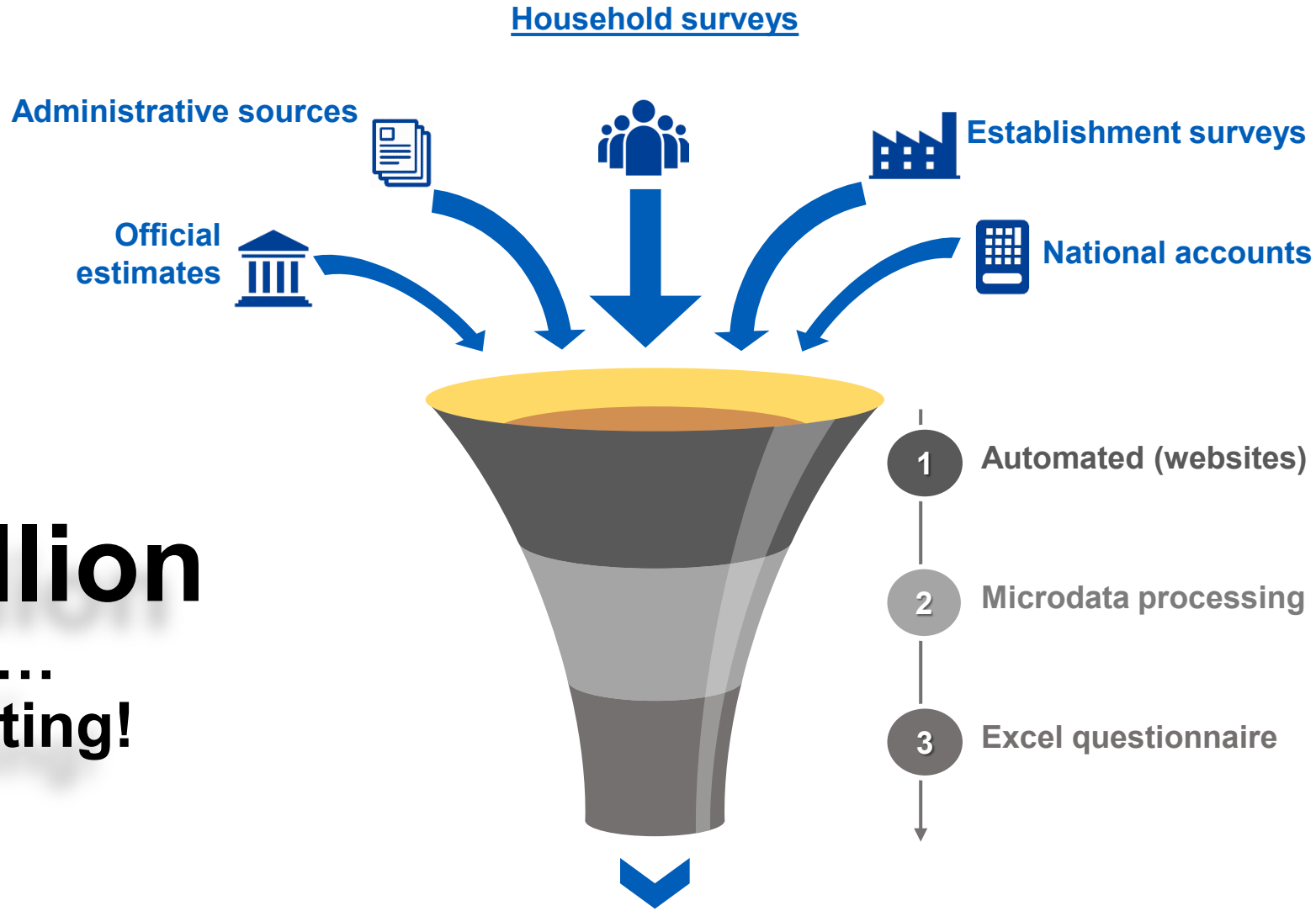
- Finalize and publish the mapping matrix
- Identify indicators that are needed for areas not covered by current core list
- Publish available data on the Partnership core indicators in the ITU DataHub
- Conduct a quantitative assessment of WSIS+20 action lines implementation (Zero Draft, paragraph on Monitoring and Measurement)
- Improve data availability – financing for data is needed - as outlined in the Compromiso de Sevilla – FFD4 Document
  - '23. We recognize that high quality and disaggregated data and statistics enable evidence-based policy decisions and enhance accountability and transparency, fostering public trust and international cooperation. We will support programmes that strengthen national data collection and statistics…."

Employment related ICT indicators

Mr Michael Frosch

Senior Statistician
International Labour Organization (ILO)

343 million
values…
and counting!



Creating employment related ICT indicators

- **Based on the available data in ILOSTAT it would be possible to create employment related ICT indicators.**
- Particular: *The proportion of employed persons in the ICT-sector, could be a core indicator.*
- This would reflect the importance of the ICT-sector in terms of creating employment, to track trends and development over time.
- Further disaggregation could describe the characteristics and structure of the persons employed in the sector. (*sex, occupation (1-digit), institutional sector (private/public/total), and by status in employment.*)
- For an alignment to the definition of the ICT sector this requires access to 3-digit ISIC level.

3-digit ISIC level-based definition

Countries with 3-digit ISIC available for 2022-2024

Regions	Number of countries
Africa	12
Americas	14
Arab States	3
Asia and the Pacific	20
Europe and Central Asia	6
Total countries	**55**

100 countries with any available data point
This could be produced for example twice per year.
Based on countries micro data,

2-digit ISIC level-based definition

Countries with 3-digit ISIC available for 2022-2024

Regions	Number of countries
Africa	24
Americas	17
Arab States	4
Asia and the Pacific	24
Europe and Central Asia	20
Total countries	**89**

Could complement the narrower/precise definition, 155 countries with any data point
While less precise it would still give insights on the size and development of the ICT sector in terms of employment, This is already available in ILOSTAT.

Measuring AI uptake in the EU surveys on ICT usage

Mr Alvaro Diez Soto

Head of Unit
Eurostat

AI Indicators in the ICT ENT survey

- Use of AI technologies
- Purpose of using AI
- Means of acquisition of AI technologies
- Reasons for not using AI technologies
- Processing of data on individuals using AI technologies
- Implementing measures to prevent bias using AI

AI indicators in the ICT HH survey

- Use of generative AI
- Purpose of using generative AI (question for users)
- Reasons for not using generative AI (question for non-users)

Challenges in measuring AI use

Rapid evolution and hype

extremely fast-changing field, a lot of new tools and services – difficult to distinguish between real innovations and buzzwords/hype

Ambiguity, "AI" is everywhere

Many systems and tools are now integrating AI or claiming to do so **– what counts as AI?** (background automation, differentiation between algorithms and AI)

Societal impact

AI touches many domains (work, ethics, society), making it hard to capture the implications comprehensively

Make questions understandable to respondents

The complexity of the technology and the rapid technological advances in the field make it also difficult for respondents to understand the questions

Balance relevance and time series

Balance capturing new developments in AI and measuring their usage over time.

E-waste Statistics Guidelines Edition III

Mr Oliver Lysaght

Lead
E-waste Statistics Guidelines
UNITAR SCYCLE

E-waste Statistics Guidelines

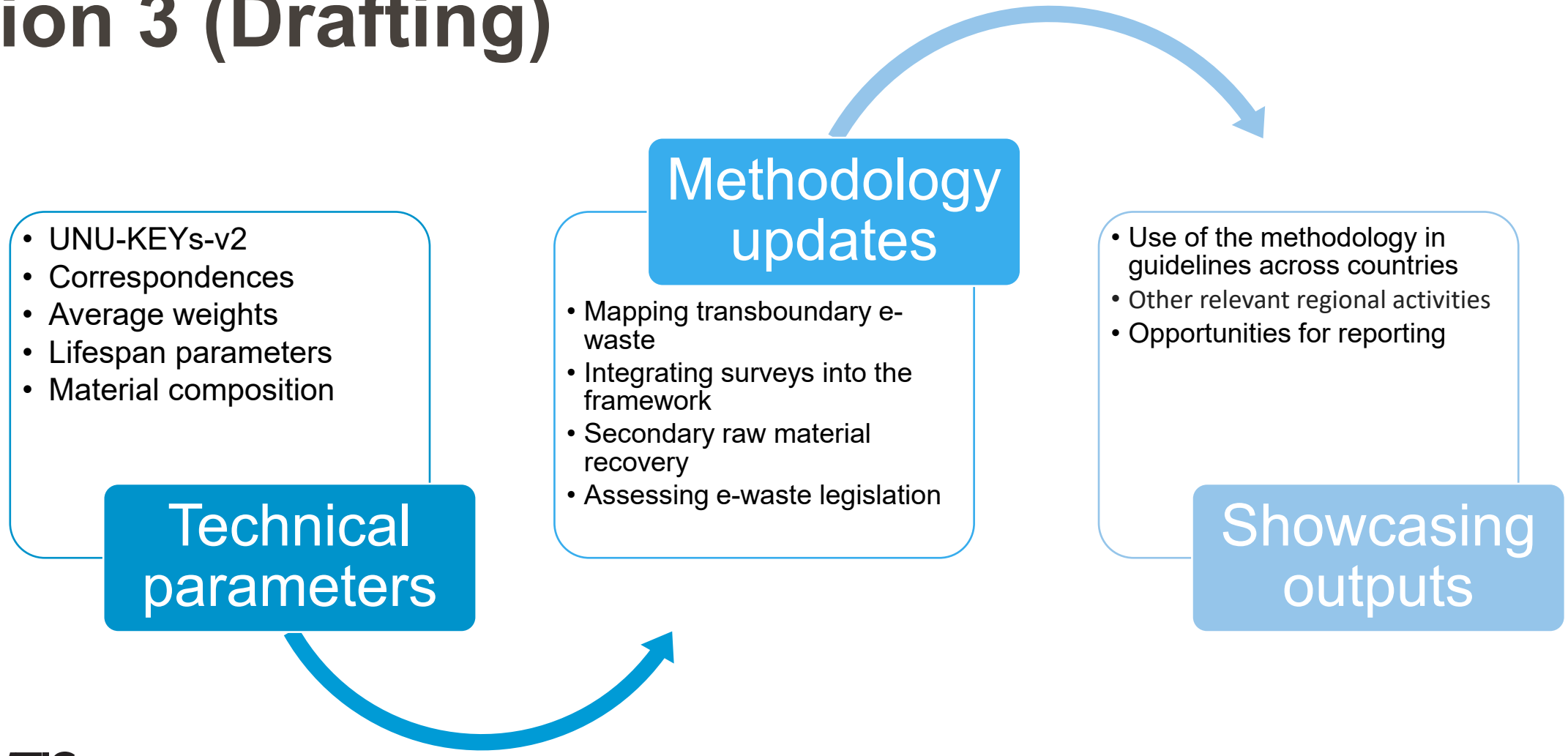
Task Group on Measuring E-Waste established to aid the compilation of reliable and comparable data on e-waste across countries

- 1st edition of the E-Waste Statistics guidelines published in 2015
- 2nd edition published in 2018

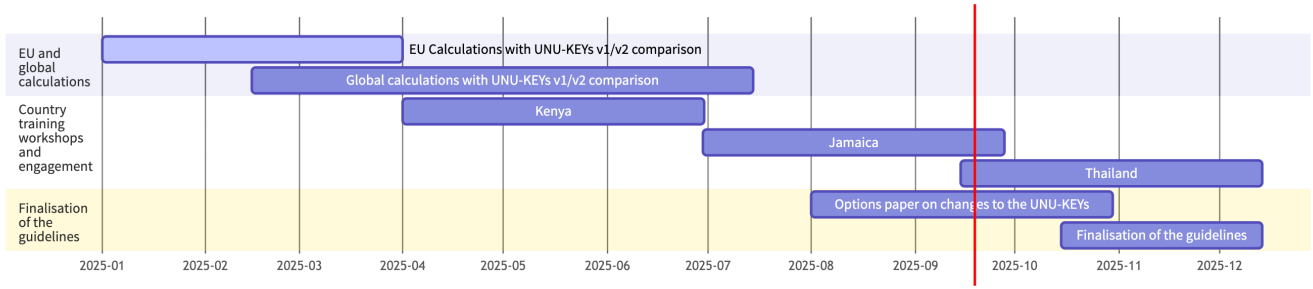
The guidelines:

- Define a measurement framework based on standardised definitions
- Incorporates widely available data sources mapped to a statistical classification of electronic products (the UNU-KEYs)
- Detail processing and calculation steps to derive indicators on the scale of e-waste and its fate

Edition 3 (Drafting)



Pilot testing



- Pilot testing (2025)
  - Pilot testing in 3 project countries through the International Workshop Series on E-waste Statistics:
    - Kenya (April 2025)
    - Jamaica (July 2025)
    - Thailand (September – October 2025)
  - Dissemination and uptake (2026)

Contact

oliver.lysaght@unitar.org

balde@unitar.org

https://www.scycle.info

United Nations Institute for Training and Research

Sustainable Cycles (SCYCLE) Programme

WSIS+20 review Zero Draft

Mr Deniz Susar

Governance and Public Administration Officer
United Nations Department of Economic and Social Affairs
(UNDESA)

WSIS+20 overall review by the United Nations General Assembly

Contact Us

Background

WSIS commits to build a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promotin their sustainable development and improving their quality of life.

Monitoring, Measurement, and Targets

- Acknowledge importance of data and statistics for ICT for development; call for more quantitative data for evidence-based decision-making (¶132)
- Commit to strengthen international cooperation, close serious data gaps, and champion responsible data use to advance SDGs (¶133)
- Note with appreciation the Partnership on Measuring ICT for Development, which since WSIS has contributed to indicators, data gathering, and dissemination (¶134)
- Commit to further develop internationally agreed targets, indicators, and metrics for universal, meaningful, and affordable connectivity, including gender-disaggregated data, aligned with the SDGs and integrated into development strategies (¶135)

Next Steps and Support

- Request the Partnership on Measuring ICT for Development, with Action Line facilitators, to review existing indicators and methodologies, and report to CSTD in 2026 with a consolidated progress report in 2027 (¶136)
- Call on UN and relevant organizations to review methodologies, consider national circumstances, put in place ICT data infrastructure, and share country case studies (¶137)
- Recognize the need for funding and capacity-building of national statistical systems; call on partners to provide resources and share best practices (¶138)
- Urge the private sector to make appropriate data available to strengthen evidence, policy, and research on the Information Society (¶138)

Contact Us

Secretariat
Division for Public Institutions and Digital Government (DPIDG)
United Nations Department of Economic and Social Affairs (UN DESA)
Email: **ungawsisreview@un.org**

29 August 2025	Zero Draft	Written inputs in the form of text proposals should be sent by email (ungawsisreview@un.org) to the Secretariat in MS Word format no later than **26 September**. All submissions will be made available online.
13-14 October 2025	Consultations with Stakeholders and Member States	Virtual: • 13 October, 10:15pm EST • 14 October, 10am EST
15 October 2025	2nd Preparatory Meeting	ECOSOC Chamber, 10:00-13:00, UNHQ
16-17 / 20-21 October 2025	Informal Negotiations	UNHQ
27-28 October 2025	Consultations with Stakeholders and Member States	In person and virtual, at the ICANN84 Annual General Meeting in Dublin, Ireland
November 2025	Draft Outcome Document	
November 2025	Informal Negotiations	UNHQ
November 2025	Consultations with Stakeholders and Member States	UNHQ
16-17 December 2025	High-level meeting of the General Assembly	UNHQ

ITUWTIS
GENEVA2025

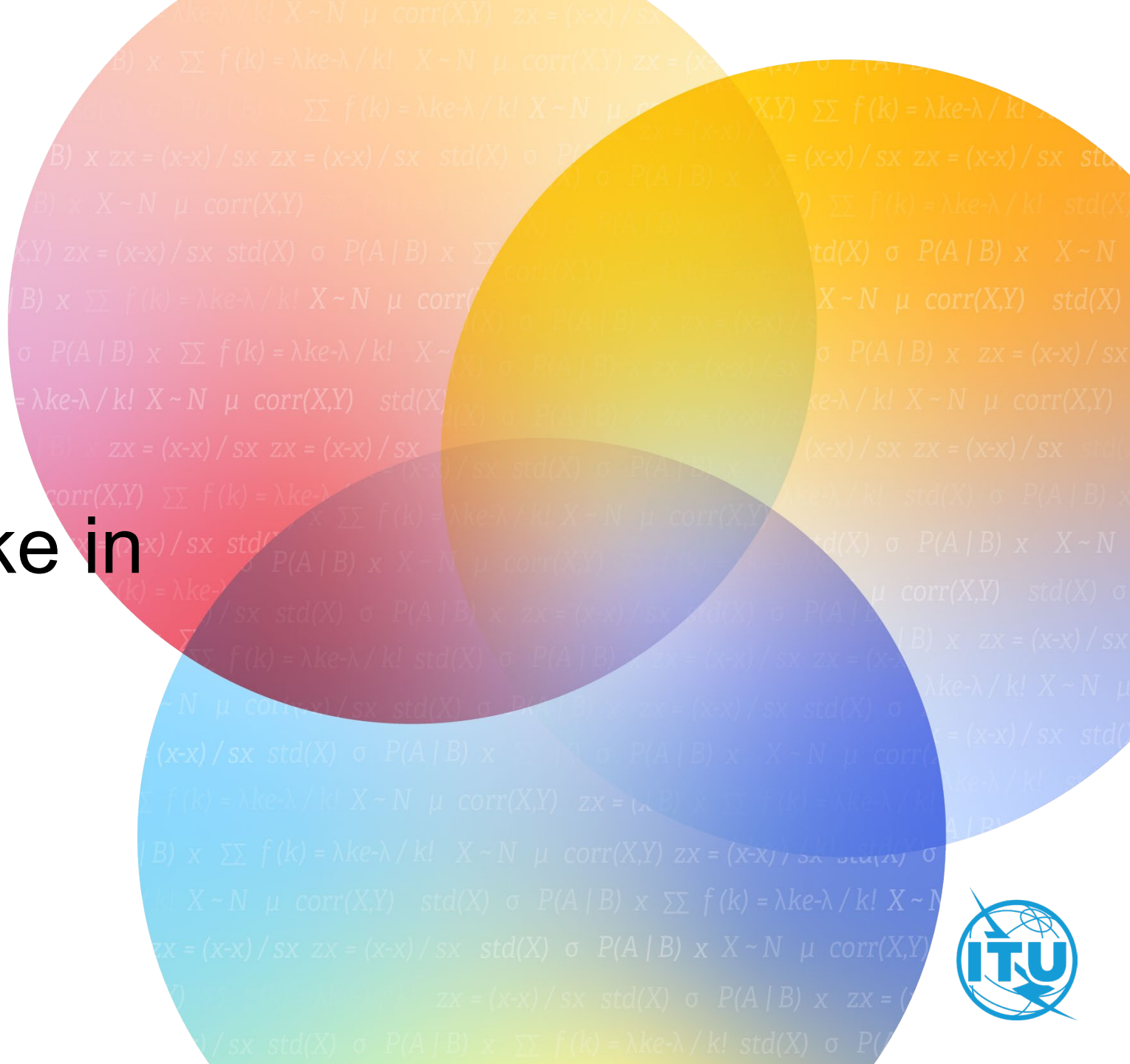
Thank you

20TH WORLD TELECOMMUNICATION/ICT
INDICATORS SYMPOSIUM

ITU WTIS
GENEVA2025

22–23 September 2025
Geneva, Switzerland

Measuring AI uptake in the EU surveys on ICT usage



AI Indicators in the ICT ENT survey

- Use of AI technologies
- Purpose of using AI
- Means of acquisition of AI technologies
- Reasons for not using AI technologies
- Processing of data on individuals using AI technologies
- Implementing measures to prevent bias using AI

AI indicators in the ICT HH survey

- Use of generative AI
- Purpose of using generative AI (question for users)
- Reasons for not using generative AI (question for non-users)

Challenges in measuring AI use

Rapid evolution and hype

extremely fast-changing field, a lot of new tools and services – difficult to distinguish between real innovations and buzzwords/hype

Ambiguity, "AI" is everywhere

Many systems and tools are now integrating AI or claiming to do so **– what counts as AI?** (background automation, differentiation between algorithms and AI)

Societal impact

AI touches many domains (work, ethics, society), making it hard to capture the implications comprehensively

Make questions understandable to respondents

The complexity of the technology and the rapid technological advances in the field make it also difficult for respondents to understand the questions

Balance relevance and time series

Balance capturing new developments in AI and measuring their usage over time.

ITUWTIS
GENEVA2025

Thank you

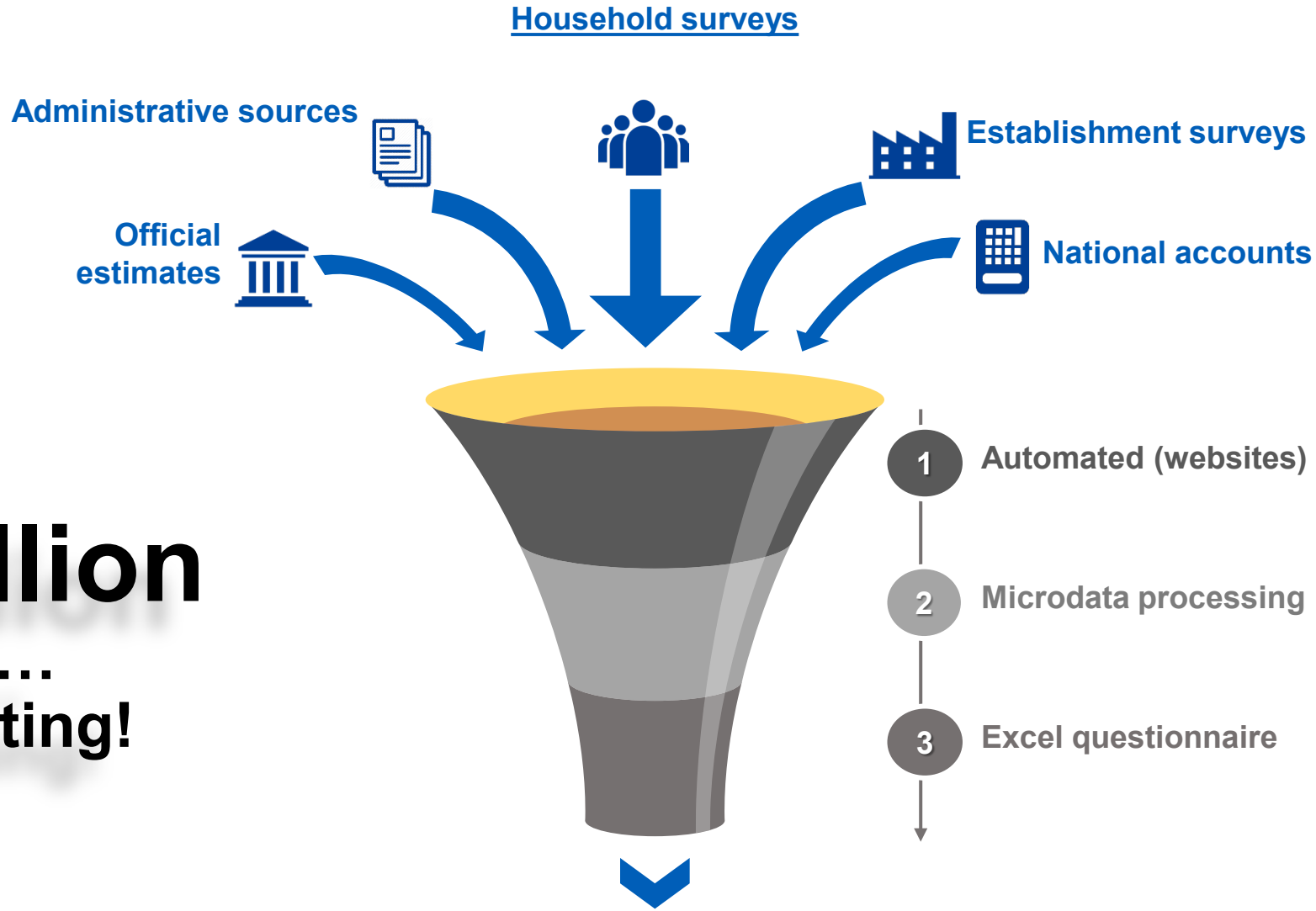
20TH WORLD TELECOMMUNICATION/ICT
INDICATORS SYMPOSIUM

ITU WTIS
GENEVA2025

22–23 September 2025
Geneva, Switzerland

ILOSTAT –Employment related ICT indicators

343 million
values…
and counting!



Creating employment related ICT indicators

- **Based on the available data in ILOSTAT it would be possible to create employment related ICT indicators.**
- Particular: *The proportion of employed persons in the ICT-sector, could be a core indicator.*
- This would reflect the importance of the ICT-sector in terms of creating employment, to track trends and development over time.
- Further disaggregation could describe the characteristics and structure of the persons employed in the sector. (*sex, occupation (1-digit), institutional sector (private/public/total), and by status in employment.*)
- For an alignment to the definition of the ICT sector this requires access to 3-digit ISIC level.

3-digit ISIC level-based definition

Countries with 3-digit ISIC available for 2022-2024

Regions	Number of countries
Africa	12
Americas	14
Arab States	3
Asia and the Pacific	20
Europe and Central Asia	6
Total countries	**55**

100 countries with any available data point
This could be produced for example twice per year.
Based on countries micro data,

2-digit ISIC level-based definition

Countries with 3-digit ISIC available for 2022-2024

Regions	Number of countries
Africa	24
Americas	17
Arab States	4
Asia and the Pacific	24
Europe and Central Asia	20
Total countries	**89**

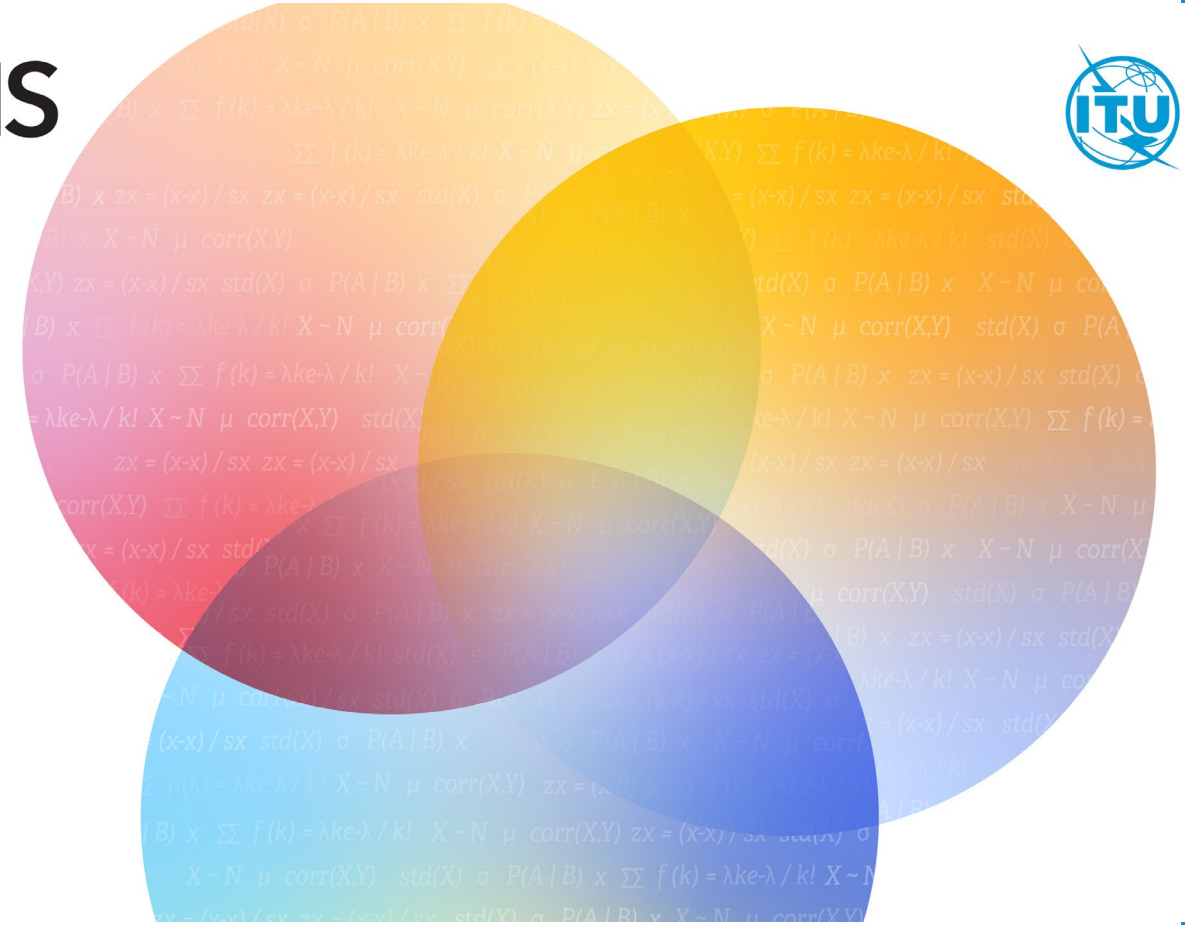
Could complement the narrower/precise definition, 155 countries with any data point
While less precise it would still give insights on the size and development of the ICT sector in terms of employment, This is already available in ILOSTAT.

ITUWTIS
GENEVA2025

Thank you

unitar
United Nations Institute for Training and Research
Sustainable Cycles (SCYCLE) Programme

ITUWTIS
GENEVA2025



E-waste Statistics Guidelines Edition III

23rd September 2025

E-waste Statistics Guidelines

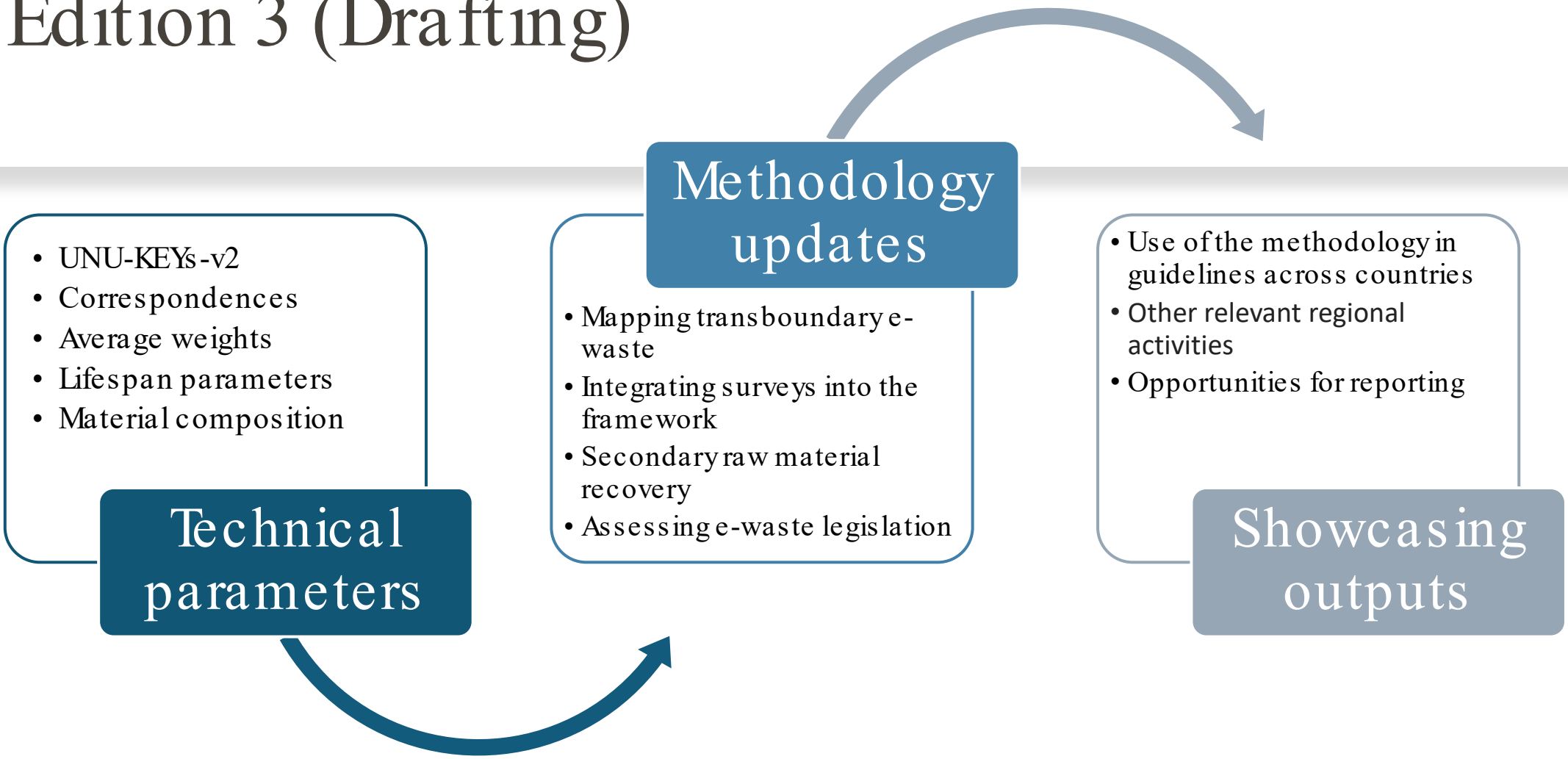
Task Group on Measuring E-Waste established to aid the compilation of reliable and comparable data on e-waste across countries

- 1st edition of the E-Waste Statistics guidelines published in 2015
- 2nd edition published in 2018

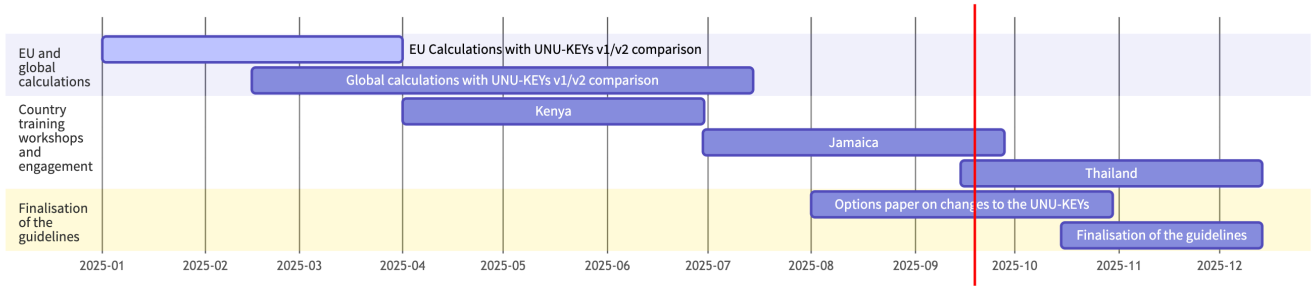
The guidelines:

- Define a measurement framework based on standardised definitions
- Incorporates widely available data sources mapped to a statistical classification of electronic products (the UNU-KEYs)
- Detail processing and calculation steps to derive indicators on the scale of e-waste and its fate

Edition 3 (Drafting)



Pilot testing



- Pilot testing (2025)
  - Pilot testing in 3 project countries through the International Workshop Series on E-waste Statistics:
    - Kenya (April 2025)
    - Jamaica (July 2025)
    - Thailand (September – October 2025)
  - Dissemination and uptake (2026)

Contact

oliver.lysaght@unitar.org
balde@unitar.org

https://www.scycle.info

unitar
United Nations Institute for Training and Research
Sustainable Cycles (SCYCLE) Programme

20TH WORLD TELECOMMUNICATION/ICT
INDICATORS SYMPOSIUM

ITU WTIS
GENEVA2025

22–23 September 2025
Geneva, Switzerland

Broadening the scope: Monitoring global digital commitments

WSIS+20 review Zero Draft

Mr Deniz Susar

Governance and Public Administration Officer
United Nations Department of Economic and Social Affairs
(UNDESA)

WSIS+20 overall review by the United Nations General Assembly

Contact Us

Background

WSIS commits to build a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promotin their sustainable development and improving their quality of life.

Monitoring, Measurement, and Targets

- Acknowledge importance of data and statistics for ICT for development; call for more quantitative data for evidence-based decision-making (¶132)
- Commit to strengthen international cooperation, close serious data gaps, and champion responsible data use to advance SDGs (¶133)
- Note with appreciation the Partnership on Measuring ICT for Development, which since WSIS has contributed to indicators, data gathering, and dissemination (¶134)
- Commit to further develop internationally agreed targets, indicators, and metrics for universal, meaningful, and affordable connectivity, including gender-disaggregated data, aligned with the SDGs and integrated into development strategies (¶135)

Next Steps and Support

- Request the Partnership on Measuring ICT for Development, with Action Line facilitators, to review existing indicators and methodologies, and report to CSTD in 2026 with a consolidated progress report in 2027 (¶136)
- Call on UN and relevant organizations to review methodologies, consider national circumstances, put in place ICT data infrastructure, and share country case studies (¶137)
- Recognize the need for funding and capacity-building of national statistical systems; call on partners to provide resources and share best practices (¶138)
- Urge the private sector to make appropriate data available to strengthen evidence, policy, and research on the Information Society (¶138)

Contact Us

Secretariat
Division for Public Institutions and Digital Government (DPIDG)
United Nations Department of Economic and Social Affairs (UN DESA)
Email: **ungawsisreview@un.org**

29 August 2025	Zero Draft	Written inputs in the form of text proposals should be sent by email (ungawsisreview@un.org) to the Secretariat in MS Word format no later than **26 September**. All submissions will be made available online.
13-14 October 2025	Consultations with Stakeholders and Member States	Virtual: • 13 October, 10:15pm EST • 14 October, 10am EST
15 October 2025	2nd Preparatory Meeting	ECOSOC Chamber, 10:00-13:00, UNHQ
16-17 / 20-21 October 2025	Informal Negotiations	UNHQ
27-28 October 2025	Consultations with Stakeholders and Member States	In person and virtual, at the ICANN84 Annual General Meeting in Dublin, Ireland
November 2025	Draft Outcome Document	
November 2025	Informal Negotiations	UNHQ
November 2025	Consultations with Stakeholders and Member States	UNHQ
16-17 December 2025	High-level meeting of the General Assembly	UNHQ

ITUWTIS
GENEVA2025

Thank you

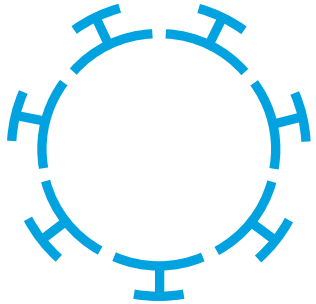
Research and Analysis

Digital Economy Report, Technical Notes, Manuals, Handbook

Core indicators on the digital economy

Regular data compilation

UNCTAD Data Hub statistical portal



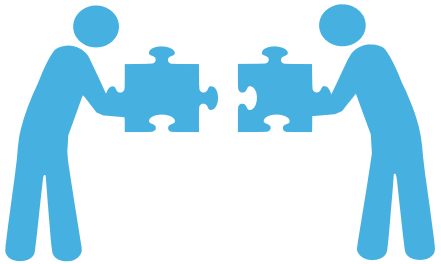
Consensus Building

Partnership on Measuring ICT for Development

Working Group on Measuring E-Commerce and the Digital Economy, 4-5 December 2025

Measuring Digital Trade

Other expert groups



Technical Assistance

Workshops on measuring digital trade

In-person and online training courses based on UNCTAD Manual

Advisory services

Depending on availability of resources

Mandate to be renewed in October 2025: will consider digital economy measurement to support digital economy policy, WSIS+20 Review, and GDC commitments.

May 14, 2025

GDF GLOBAL DATA FACILITY

Mobile Phone Data for Policy Program – Dialing up Country Support

Trevor Monroe

gdfmpd@worldbank.org

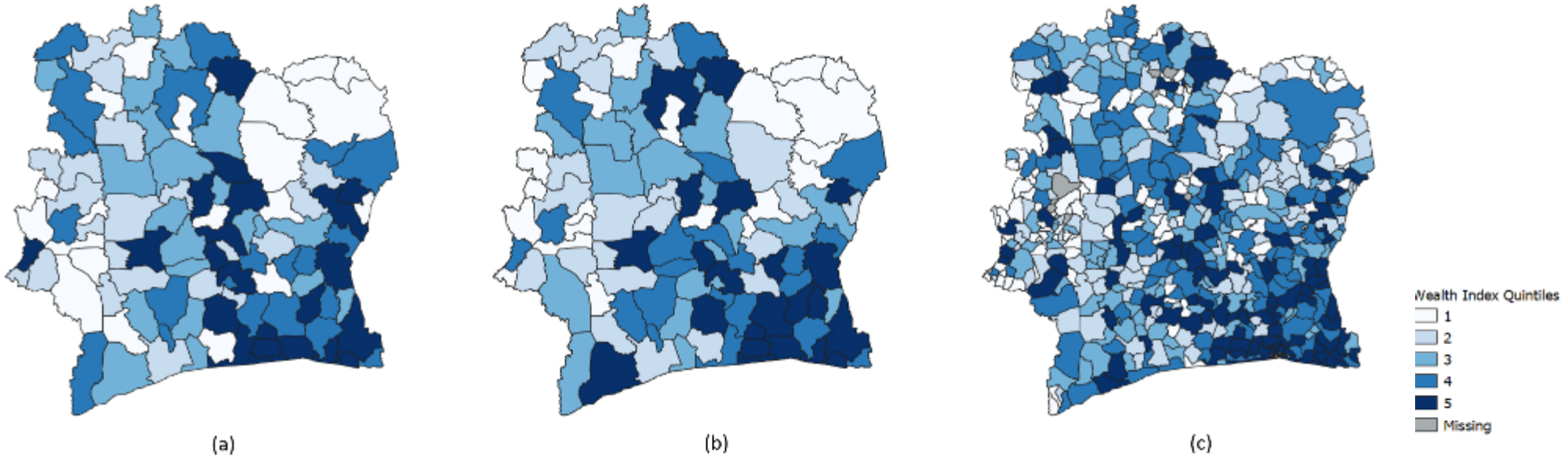
ITU

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP


Mobile phone data has several advantages and is a powerful and cost effective tool to accelerate sustainable development

SDG 1: No poverty

Improved mapping of poverty



Survey Data

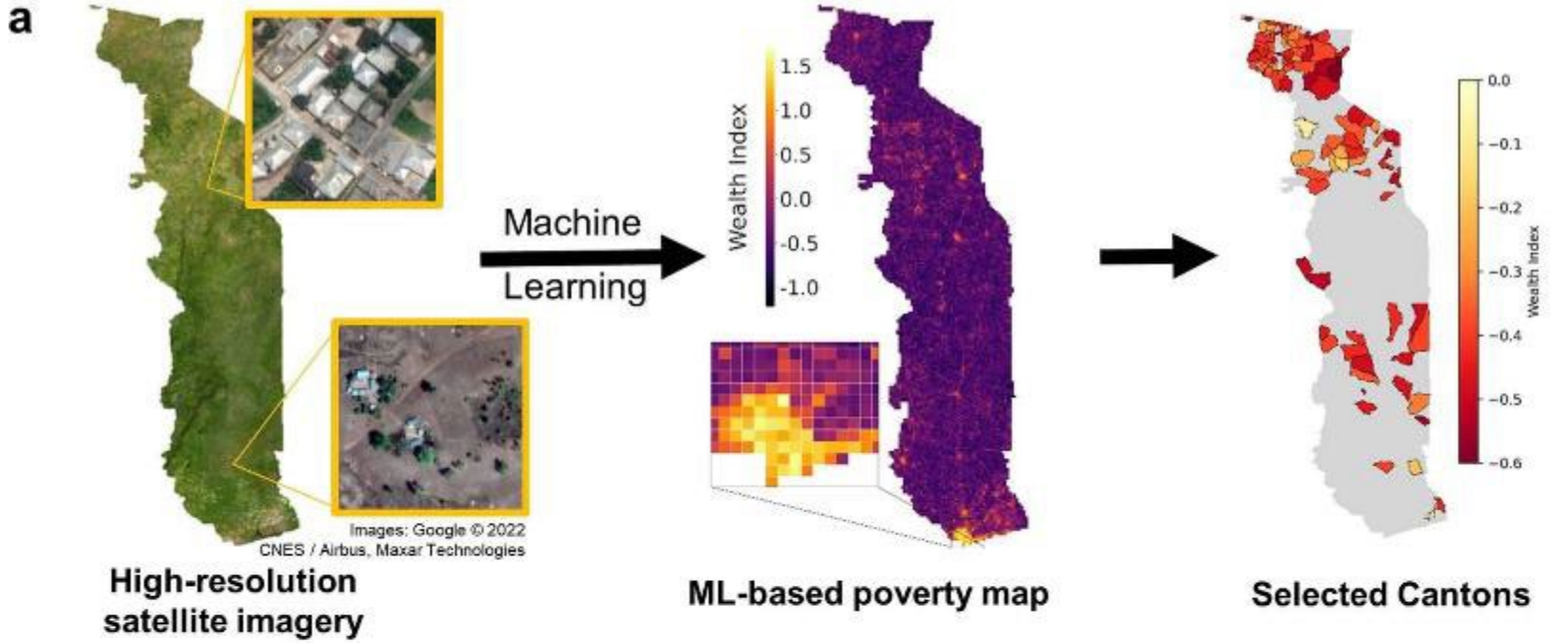
Prediction Using Mobile Phone Data

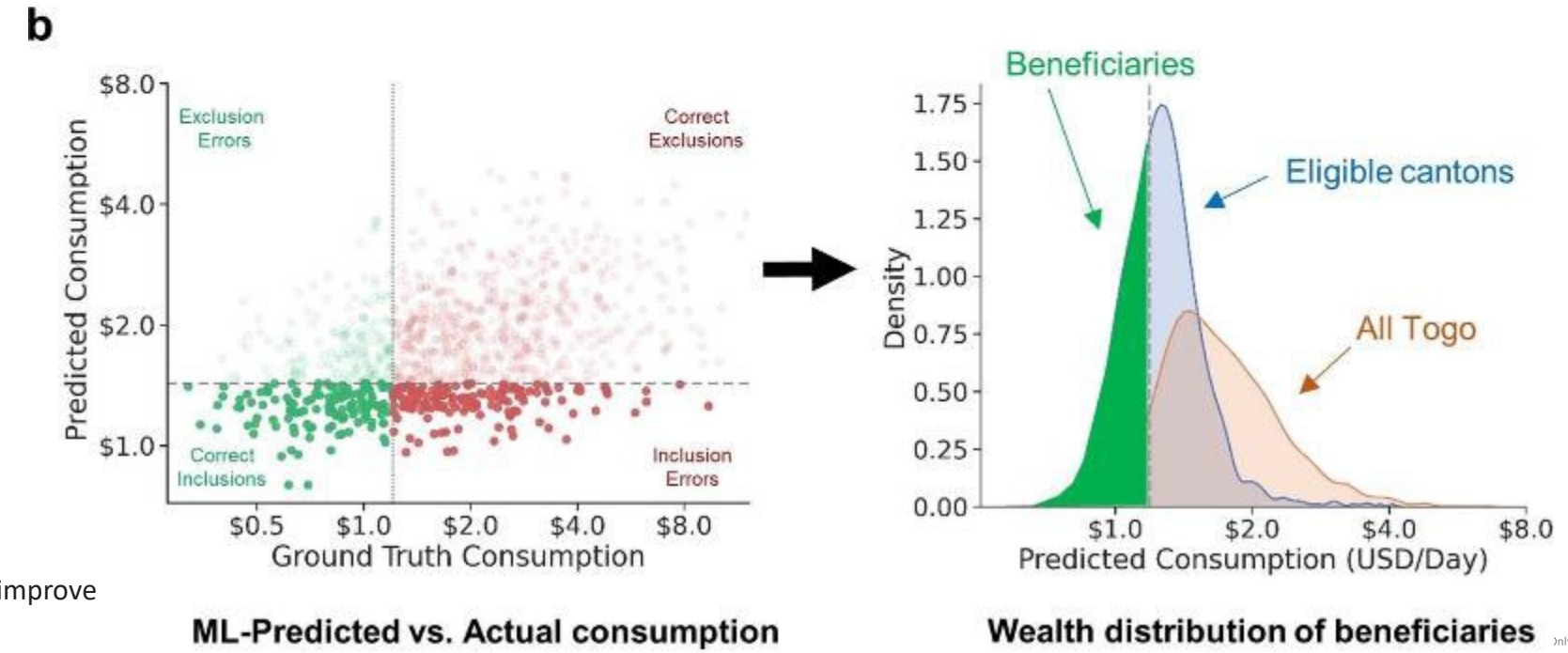
Prediction Using Mobile Phone Data

Source: Milusheva et al. "Is more better? Testing feature extraction for poverty estimates from telecom data in Cote d Ivoire." Netmob Conference Abstracts. 2024.

SDG 10: Reduced inequalities

More effective social protection programs due to fast targeting during crises



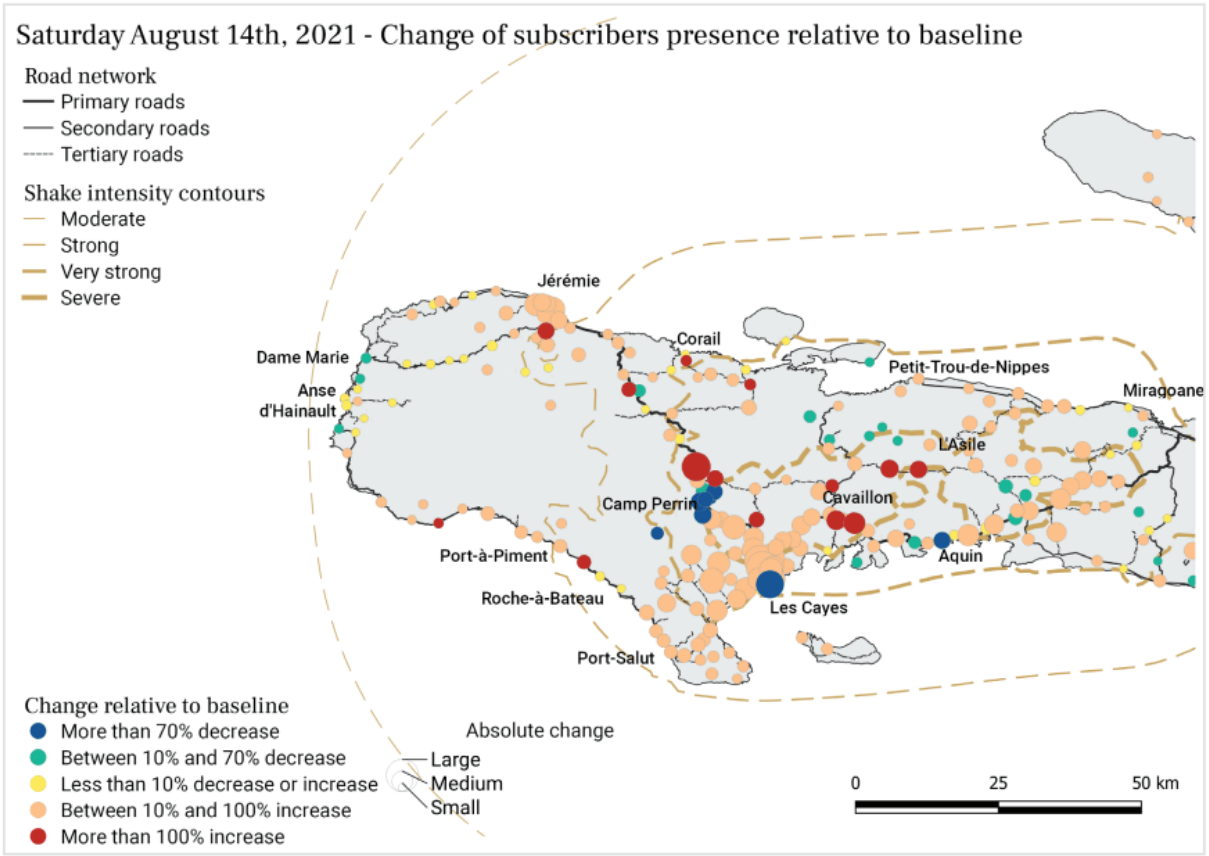


Source: Aiken, Emily, et al. "Machine learning and phone data can improve targeting of humanitarian aid." *Nature* 603.7903 (2022): 864-870.

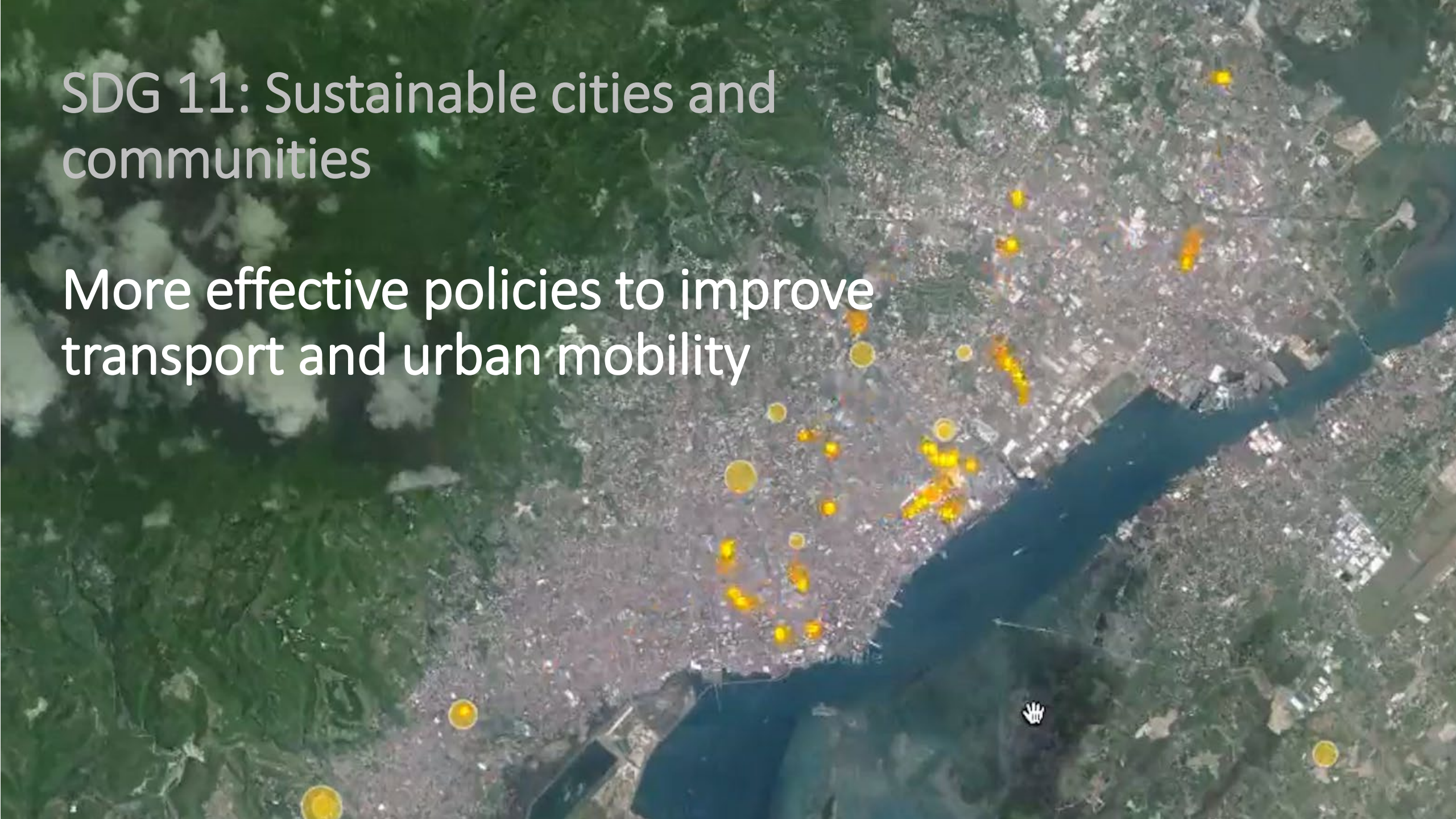
SDG 13: Climate action

More effective disaster response by knowing where people are

Population Change in Wake of 2021 Haiti Earthquake



Source: Flowminder Foundation. “Population movements estimated with mobile operator data from Digicel Haiti.” 20 August 2021.



SDG 11: Sustainable cities and communities

More effective policies to improve transport and urban mobility

Top Statistical Applications of Mobile Phone Data

https://unstats.un.org/bigdata/task-teams/mobile-phone/index.cshtml

UN MPD Task Team

1 Tourism statistics →

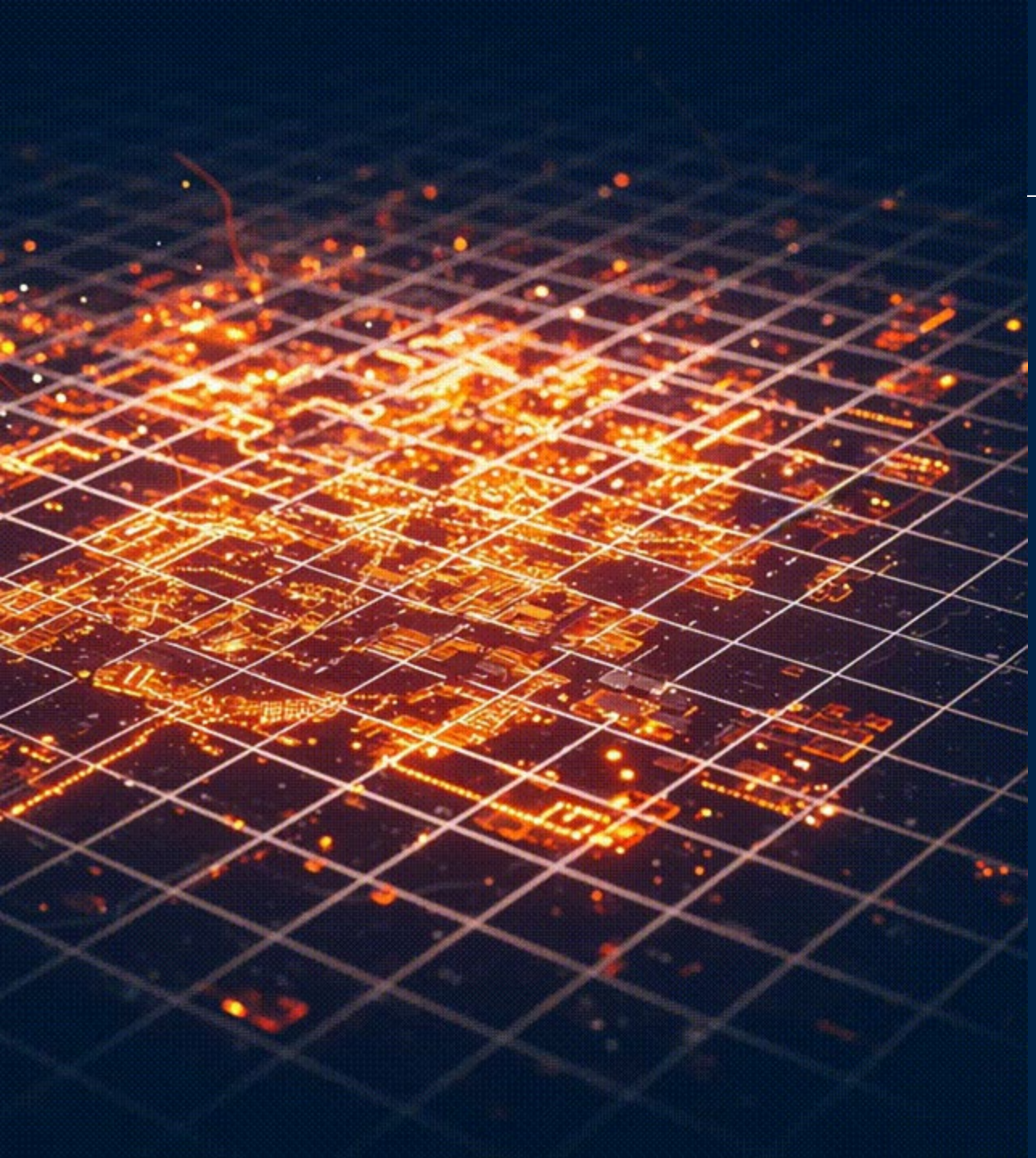
2 Social Assitance →

3 Dynamic population →

4 Displacement, Migration, Crisis Response →

5 Information society indicators →

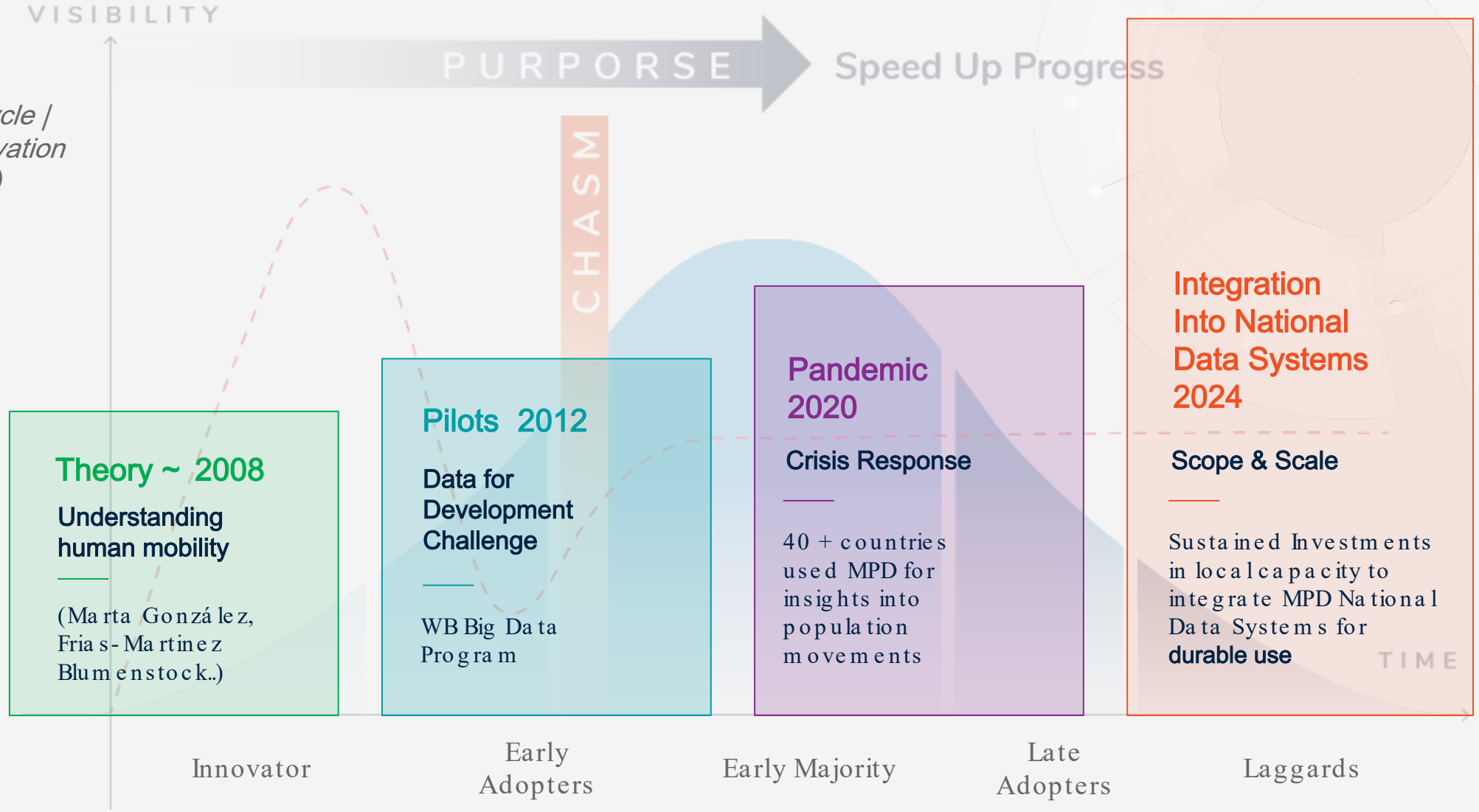
6 Transport and commuting statistics →



Why invest in Mobile Phone Data for Policy?

Evolution of MPD for Policy

Gartner Hype Cycle | Diffusion of Innovation Theory (Roberts)

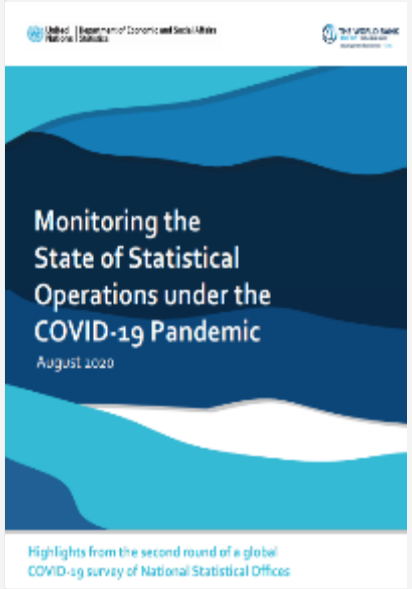


MPD Capacity is a Priority for NSOs

National Statistical Office Priorities for Capacity Development

Question

In the next three years, does your NSO want to expand capacity in the following areas to respond to the new data demands of the 2030 Agenda for sustainable development/SDGs and more recently the COVID - 19pandemic?



78% of National Statistical Offices

consider Mobile Big Data a priority over the next three years (CTAP Round 1)

Less than 20% of NSOs have capacity to use sophisticated data for Policy (World Development Report)

Integration of M obile Phone Data (MPD) in National Data Systems for Tourism

Return on Impact

30 x Cost effectiveness. $30 for every $ 1dollar invested in Integrated National Data Systems (WB ROI report)

GDF- MPD Cohort Tourism Initiatives

- Ka za kh sta n | Be n in |
- To g o | Ma la wi | Bo ts wa n a | STP | Za m b ia | In d ia

Demonstrated Value Tourism Statistics

Estonia

4 x faster production

2.5 x more cost - efficient

200 x larger sample size than traditional surveys

12x resolution, higher geographic breakdown (country - level)

Higher frequency statistics (daily – monthly)

Indonesia

Cost savings: From **$2.5 M** (traditional) to **$950 K** (MPD- based)

Savings of **~$ 1.55M USD** per round

Higher spatial & temporal resolution (monthly, quarterly, yearly)

Integrated with digital surveys for richer insights (e.g., expenditure, demographics)

Spain

Improved timeliness: Tourism results published within 1month after reference month

Larger sample sizes, better data quality (reduced recall bias and data entry errors)

Reduced burden on respondents

Enhanced geographical granularity (municipal level)





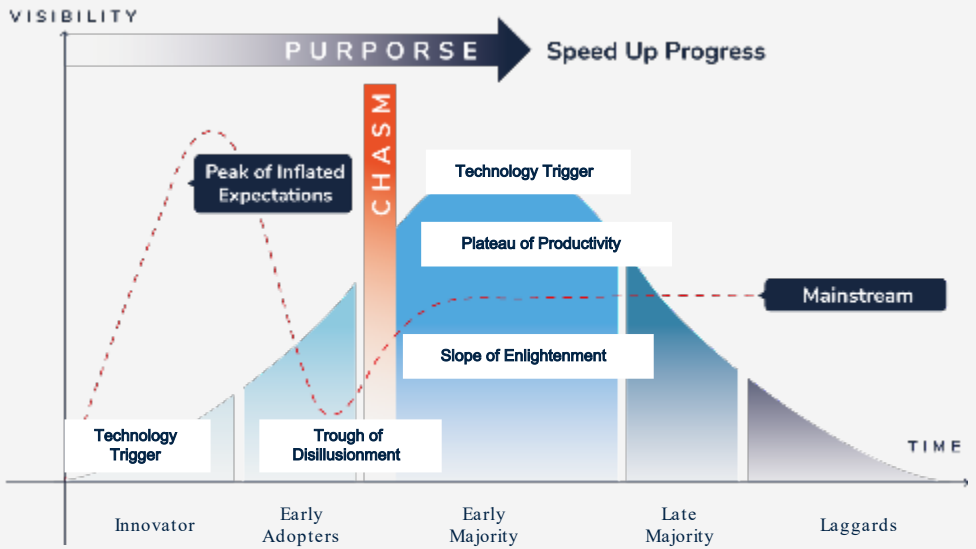
Global Data Facility – MPD Country Cohort Support Program

ITU

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

Adoption
Challenges

Adoption Life Cycle of Innovation



Variation

Adoption efforts need to be tailored to local ecosystem and institutional environment.

Safeguards

Good practices for data security, privacy preservation, and legal protections.

Capacity

Only 20% of countries have capacity to use sophisticated data in Policy (WDR 2022).

Software

Special software & often hardware must be provisioned on MNO network to store/process CDR.

Standards

Guidance for developing measurements, official statistics. Standard data sharing agreements.

Funding

Funding to date has been project level for on-off pilot, research efforts. Programmatic funding is needed.

Global Data Facility –
Mobile Phone Data Program

Objectives

Deliver programmatic support to deliver advisory support to help country clients integrate **Mobile Phone Data** into their national data systems

Operations Pillar (DEC, Pov, Digital Transformation, ITU)

- Programmatic support to deliver international good practices, standards ito integrate MPD into national data systems for policy and statistics
- MPD Foundations Training Program: practitioner and technical tracks to set up foundations of mobile phone data
- MPD Public goods: Repository of essential resources, tools, use cases, frameworks, training content

Research Pillar (DIME, External Committee)

- Innovation in methods and standards at scale
- Steering Committee (Blumenstock, Frias-Martinez, Gonzalez)

Impact

- Supporting Cohorts of Countries to Operationalize MPD for Policy– over 30 countries
- GDF-MPD grants used to amplify IDA/IBRD operations toward **Integrated National Data Systems**

The Road So Far

Preparation

- Formalize Technical Partnerships (ITU, Poverty, Digital Development, DIME, Spain)
- Collaboration with UN MPD Task Team + Eurostat Multi-MNO
- Co-Developed Essential Resources
  - GDF-MPD Strategy
  - MPD Theory of Change
  - MPD Country Maturity Framework
  - Training Program
  - Templates for Governance Arrangements
- 3 joint workshops - UN Big Data Science Conference (Bilboa)

Cohort 1 (2 year imp)→

- Country Team Launch Workshop, WB, Oct 24

Cohort 2 (18mth imp→

- Country Team Launch Workshop, Johannesburg, May 25

2024

Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | 2025 | May | Sept

THINKING SLOW

MOVING FAST

Partners Working ~~To~~gether to Go Far

Country Teams ~~W~~orking Together to Go Far

MPD Access and Pipeline: Key stakeholders

Data Owners

- Mobile Network Operator(s)

Regulators (Data Controlers)

- Data Protection Authority
- Telecommunications Regulator
- National Security Agencies

Data Users

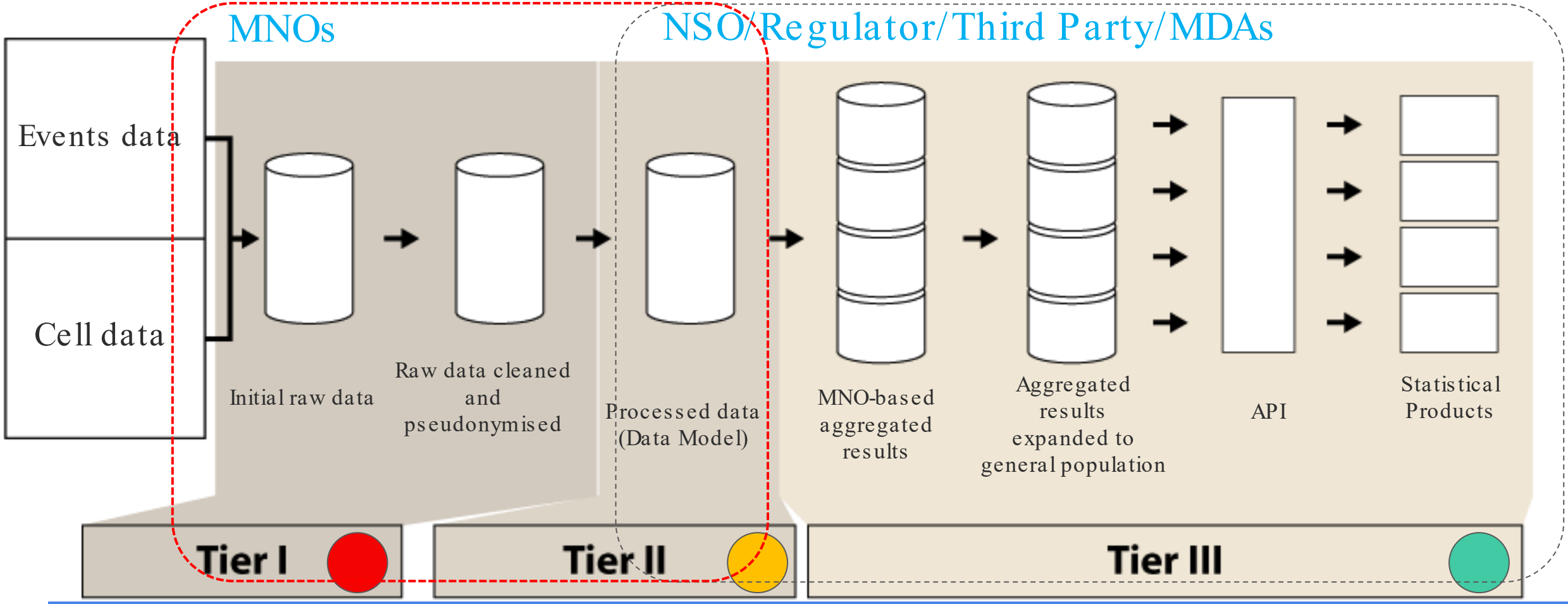
- National Statistical Organisation
- Other Government Departments
- International Organisations
- Non-Governmental Organisations
- Private Sector

Technical Service Provider(s)

THE WORLD BANK GDF GLOBAL DATA FACILITY

FLOWMINDER.ORG ITU NOMMON positium

3 tiers for Mobile Network Operator Pipeline



Data Flow: Data Engineering: HPC (Spark) | Data Science/ML (Github, Docker, Jupyter, Python/R, Co-Pilot)

Cohort-Based Support Program

Practitioner | Expert

Enablers, Standards and Safeguards

Foundation

Enablers, Standards and Safeguards

Pre-Foundation

Awareness Raising

Mainstream use of MPD for Policy

Use WBG lending activities to sustain use of MBD for official statistics and policy

Facilitate INDS/DPI Grants

Integrate with WBG Lending Operations

Second Use Case

Country driven (ITU technical areas Migration, Disaster & Displacement, Tourism, Information Society,

Country Technical Assistance

Data Literacy and Technical Training on MBD

Basic Use Case

Population

Provision Data Infrastructure

Technical Assistance

Data Access Arrangements

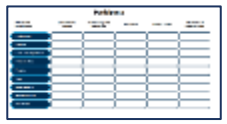
Technical Assistance

Develop MPD Partnerships

(NSO, MNO, Regulator)

Country Cohort Selection

Identify countries for training cohort



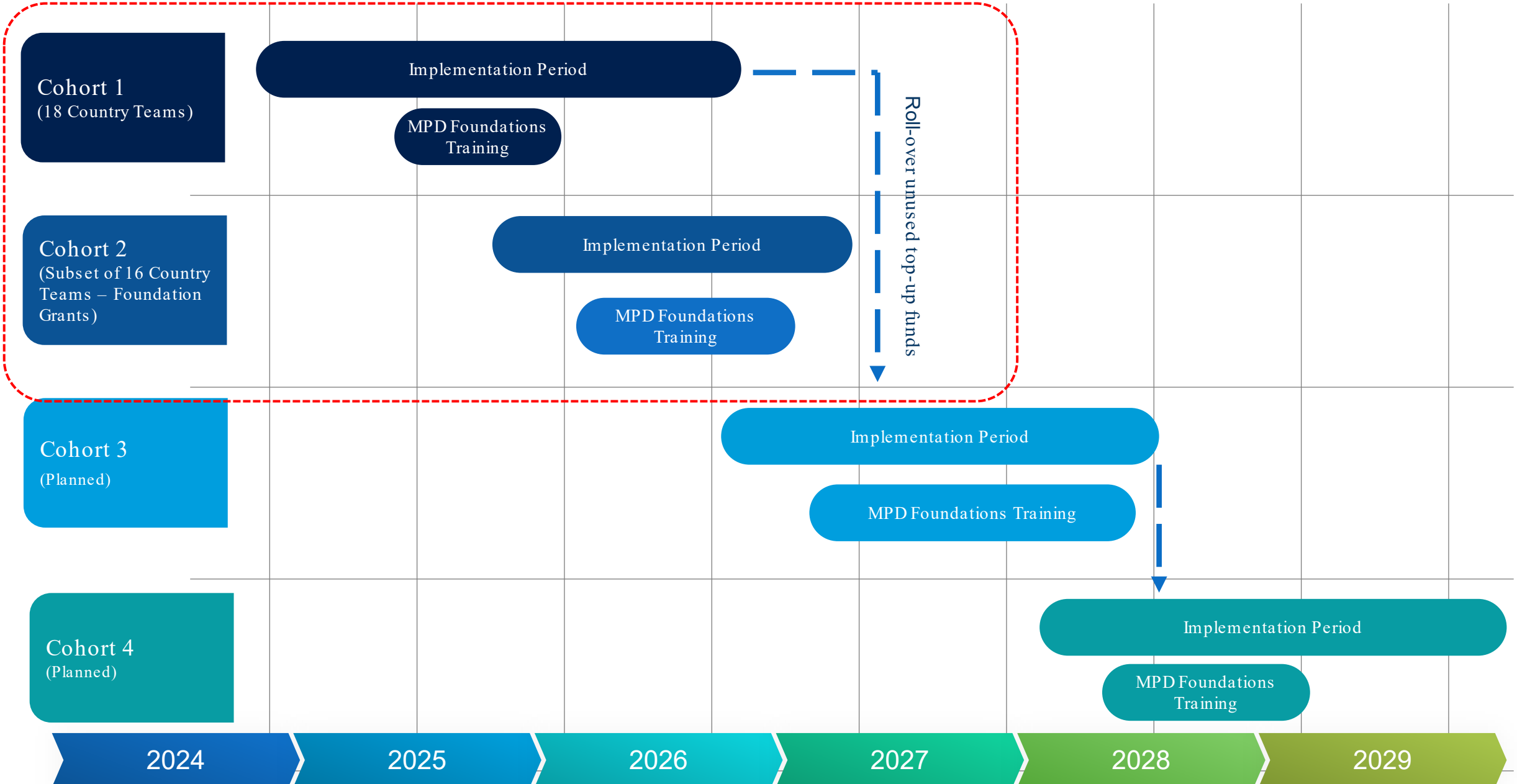
Maturity Assessments

Evaluate country policy landscape, Safeguards and enablers

Country Cohort Window (Several Countries per cohort)

Use INDS MBD maturity assessment to assess capacity, risk and inform implementation

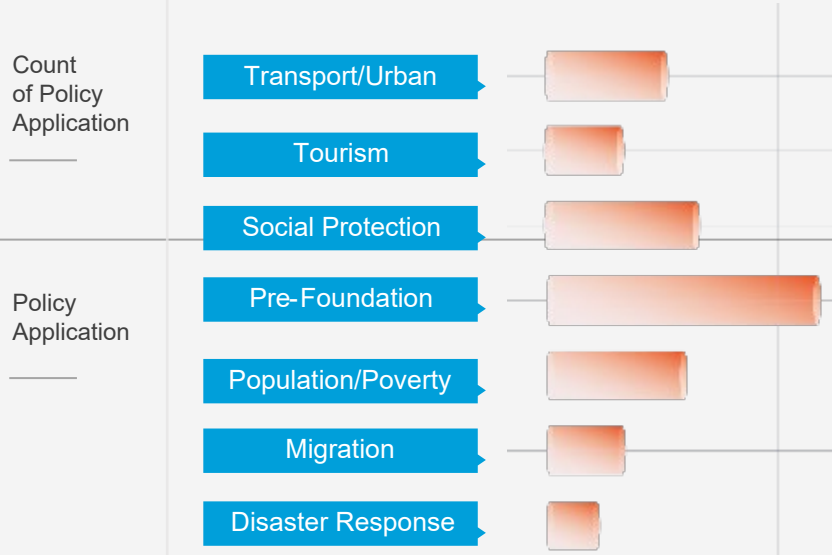
Active and Planned Country Cohorts



Cohort 1: 18 Country Teams

Cohort 2: 16 Country Teams (SADC)

At a Glance - Policy Areas



LAC (5)

Argentina | Brazil | Ecuador | Peru | Haiti

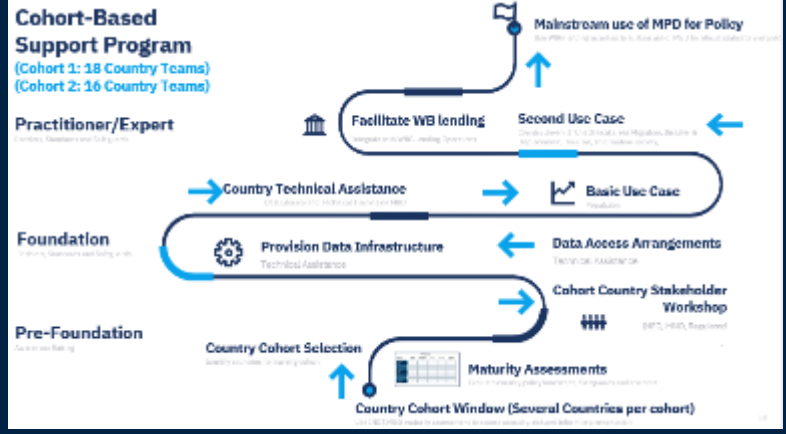
AFRICA (16)

Benin | Cote D'Ivoire | Guinea | The Gambia | Senegal | Togo | Tunisia | Morocco | Kenya | Botswana | Malawi | Mozambique | South Africa | Zambia | STP |

ASIA (3)

India | Kazakhstan | Mongolia | + Kurdistan

GDF- MPD Country Cohorts 1– 2 : 24 Country Teams



Cohort implementation period 24 Months

Pre- Foundation

of Countries: 13

Country Based Activities (Indicative) :

- Raising Stakeholder awareness
- Developing Country Partnerships in MPD
- Identify feasible MPD policy solutions
- Conduct in depth MPD maturity assessment
- Design MPD Access Models
- Draft Governance Agreements

Foundation

of Countries: 8

Country Based Activities (Indicative) :

- Formalize MPD Data Access & Governance Arrangements
- Provision MPD infrastructure
- Technical training on MPD foundations
- Technical Training on Policy/ Statistical Applications

Practitioner/ Expert

of Countries: 4

Country Based Activities (Indicative) :

- MPD Policy application(s)
- Multi- MNO Pipeline
- Additional Policy Applications

MPD Foundations Training Program :

- All Cohort Country Teams Participate in Cohort Launch Workshops
- All Cohort Country Teams Participate in MPD Foundations Training Program – Online, Instructor- Paced Training Program

Thoughts on AI in Mobile Phone Data

SURVEY DATA VS BIG DATA

SURVEY DATA

The Good:

- Representative
- Standard Errors known
- Fit for Purpose

The Bad :

- Costly
- Gaps & Lags in Coverage

BIG DATA

The Good:

- Big
- Always on
- Non-reactive

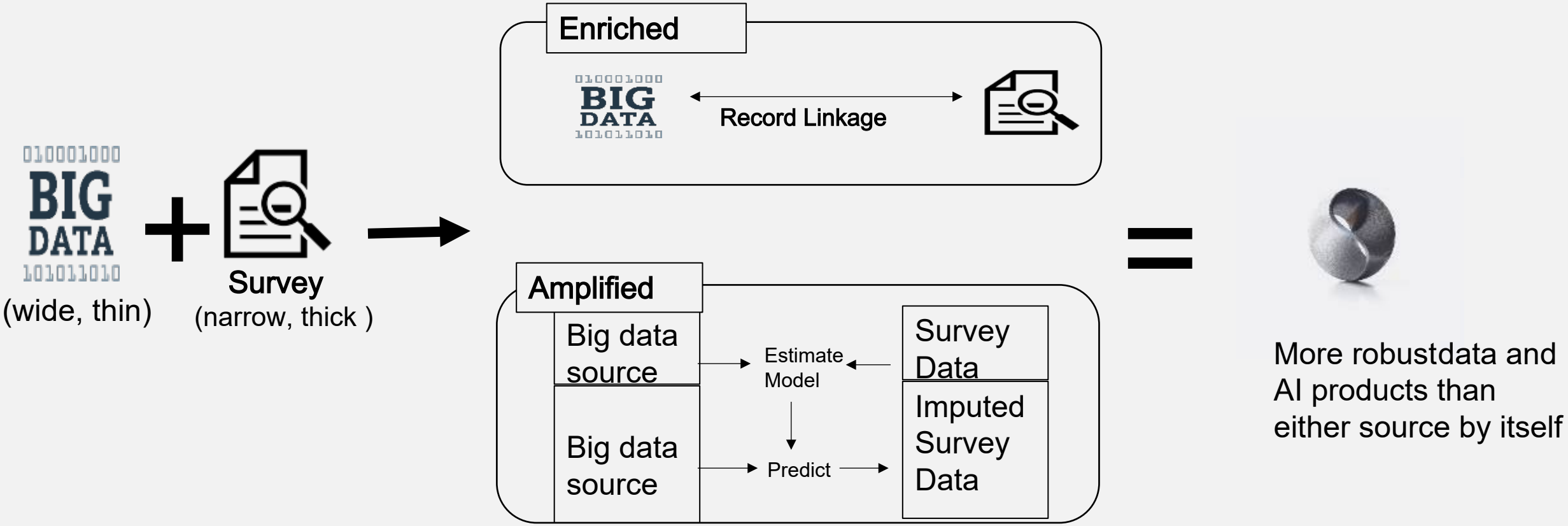
The Bad:

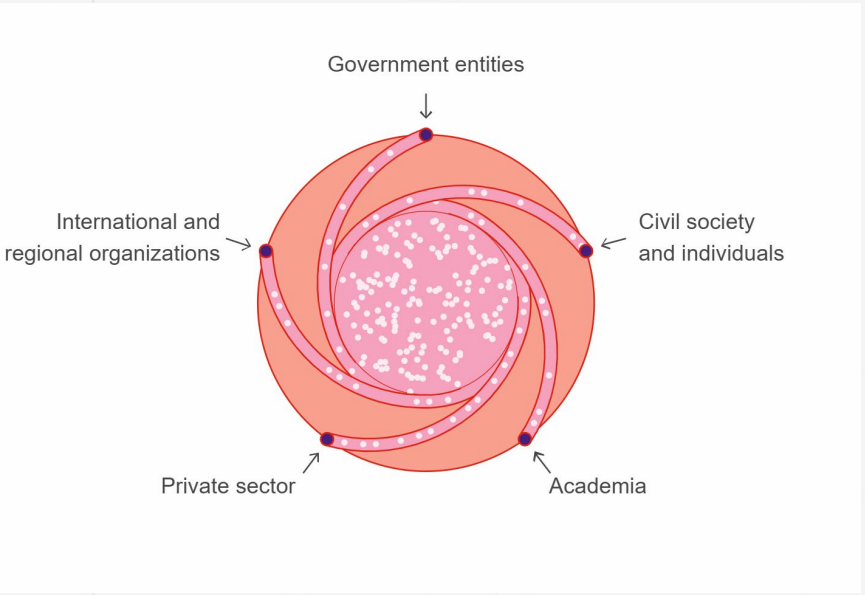
- Non-representative
- Confounded
- Drifting
- Incomplete

"BIG DATA INCREASES THE VALUE OF SURVEY DATA *"*

~Mathew Salganik, Bit by Bit

Common approaches for data integration and fusion

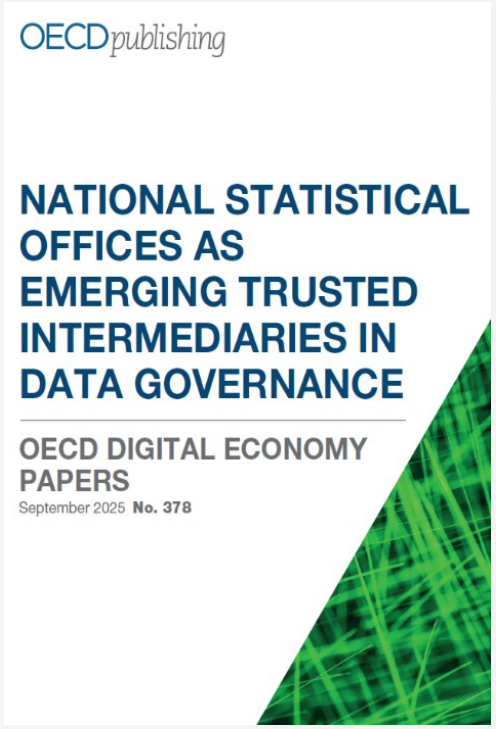




+ Evolution of National Data Systems

Main ideas

- Evolving Role: National Statistical Offices (NSOs) are moving beyond their traditional function of producing official statistics to become trusted data intermediaries (TDIs).
- Facilitating Data Sharing: NSOs facilitate data sharing among public administrations, researchers, and, in some cases, private companies.
- Key Enablers: They use privacy-enhancing technologies (PETs) and secure data environments to ensure confidentiality and privacy.
- AI to improve data and Data to improve AI – World Bank Program









MPD Public Resources:

- Global Data Facility MPD Essential Resources
- UN CEBD Task Team on MPD: Methodological Guides
- UN CEBD MPD for Official Statistics: Mobile Phone Data Awareness Course

Parting Thoughts

> If you want to go far, go together.

Steady evolution to Put MPD to work for Policy

Data and AI revolution is real. Need a growing body of international good practices, standards, methods and local capacity to integrate MPD into National Data Systems and enable dynamic, responsive public solutions.

Think Slow to Move Fast

Build partnerships that genuinely share common aspirations, playbooks, standards, processes. Modularity helps to get big things done.

Public - Private Partnerships

Integrated National Data Systems need partnerships with key stakeholders in MPD ecosystem, including national statistical agencies, regulators, and Ministries, Agencies and Departments

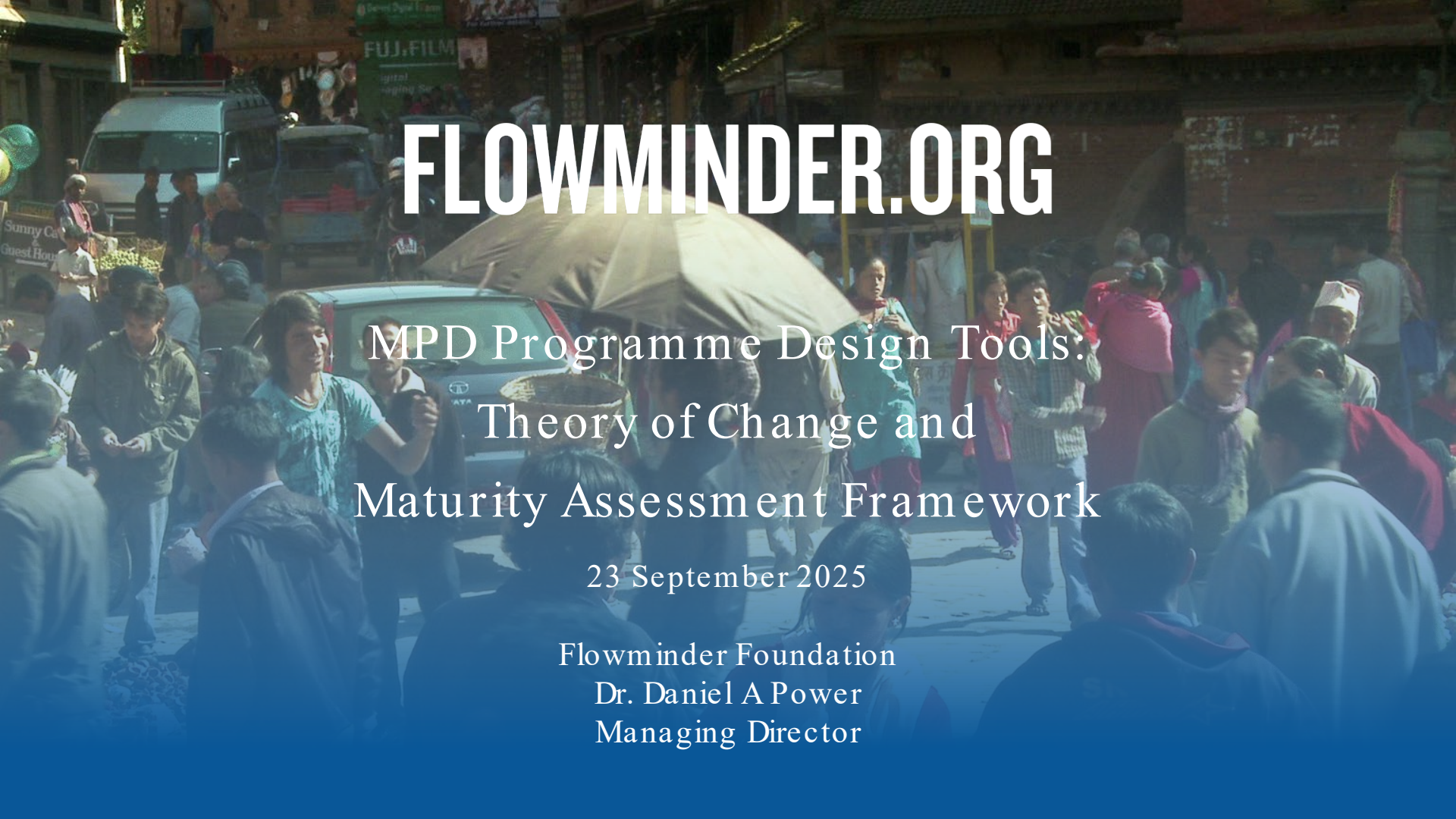
GDF GLOBAL DATA FACILITY

MOBILE PHONE DATA FOR POLICY PROGRAM

Partner with us

gdfmpd@worldbank.org

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP



FLOWMINDER.ORG

MPD Programme Design Tools: Theory of Change and Maturity Assessment Framework

23 September 2025

Flowminder Foundation
Dr. Daniel A Power
Managing Director

Transforming mobile phone data (MPD) into actionable insights for policy and operational decision-making

Challenge

In data-scarce settings, policy makers are flying blind, guessing when they should be knowing.

Limitations

On their own, current data collection, like census or surveys either take too long, lack representativity, or are too costly.

Opportunity

However, mobile operator data, which are passively and routinely generated, are available in all countries in a standard format at all mobile network operators.

Solution

MPD programmes can provide timely, representative and cost-effective data and insights for many applications.

Role of telecommunications regulatory authorities

- Provides **regulatory oversight** to MPD programmes
- Already has **regular contact** with MNOs
- Often has a **development agenda**
- May already have mandate to collect records, so some regulators can be a **data processor** as well as playing a regulatory role

Theory of Change for Mobile Phone Data Initiatives

Putting Mobile Phone Data to work for Policy

What does success look like for this goal?

1. MPD **used systematically** to **enhance the evidence base** for policy and decision making
2. MPD is **integrated** into the **national data system** on a sustainable basis
3. MPD is **used responsibly for policy and statistics** within a national institutional environment that has both **enablers and safeguards**
4. MPD is **enabling assessment and prediction** of policy challenges
5. MPD is **helping users** to **monitor real -time progress** on SDGs

Why develop a Theory of Change?

Making a **Theory of Change** allows you to build a **comprehensive analysis** of **how** and **why** the change you want to see is likely (or not) to be achieved.

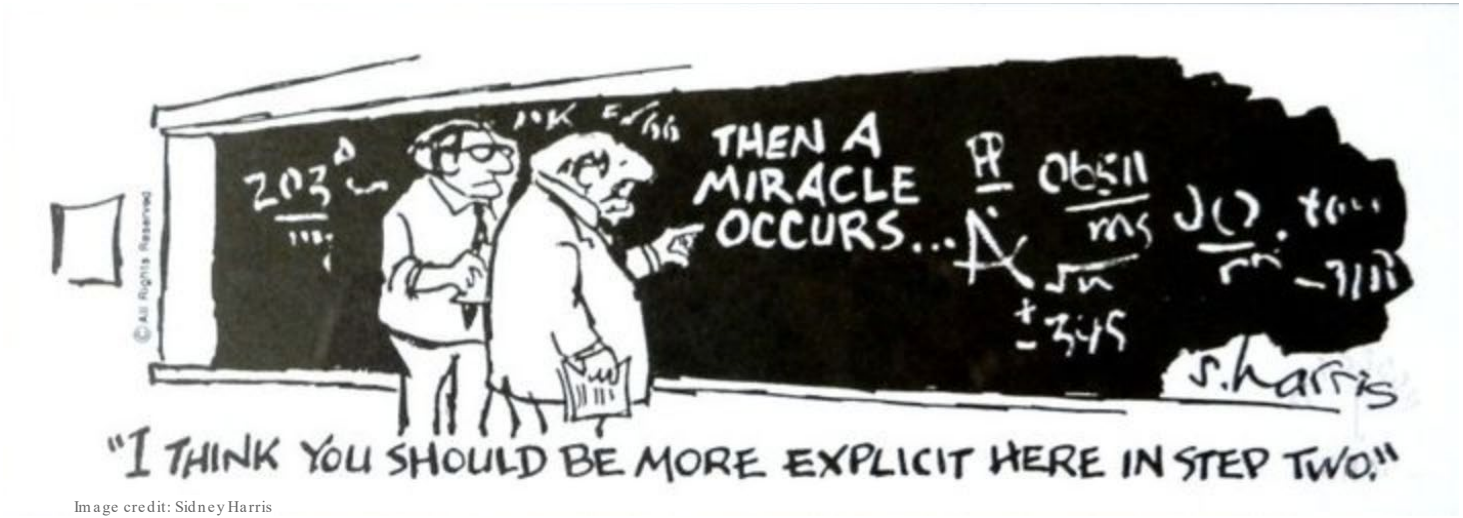


Image credit: Sidney Harris

Structure of the MPD4P Theory of Change

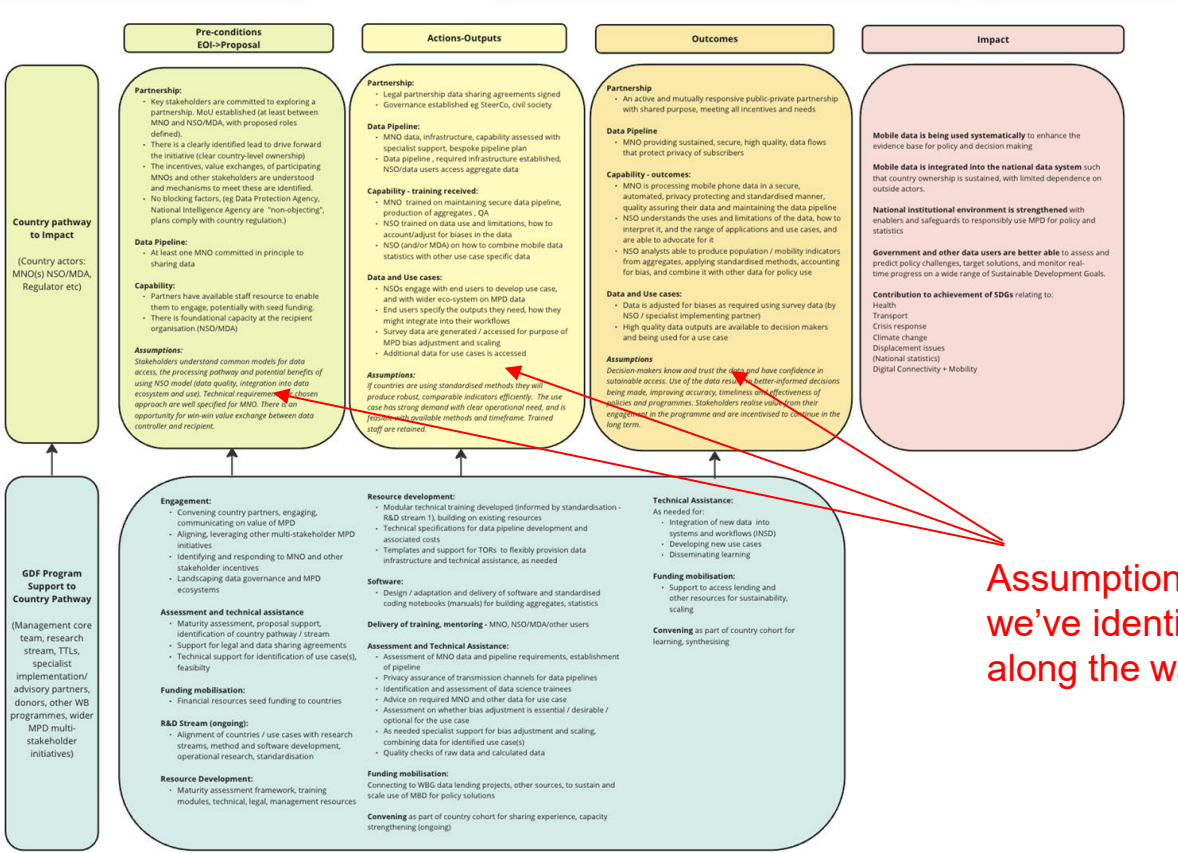
Two rows:

1. The country-level "pathway to impact"

This represents a 'generic' Theory of Change at country-level

2. The MPD4P program-level inputs

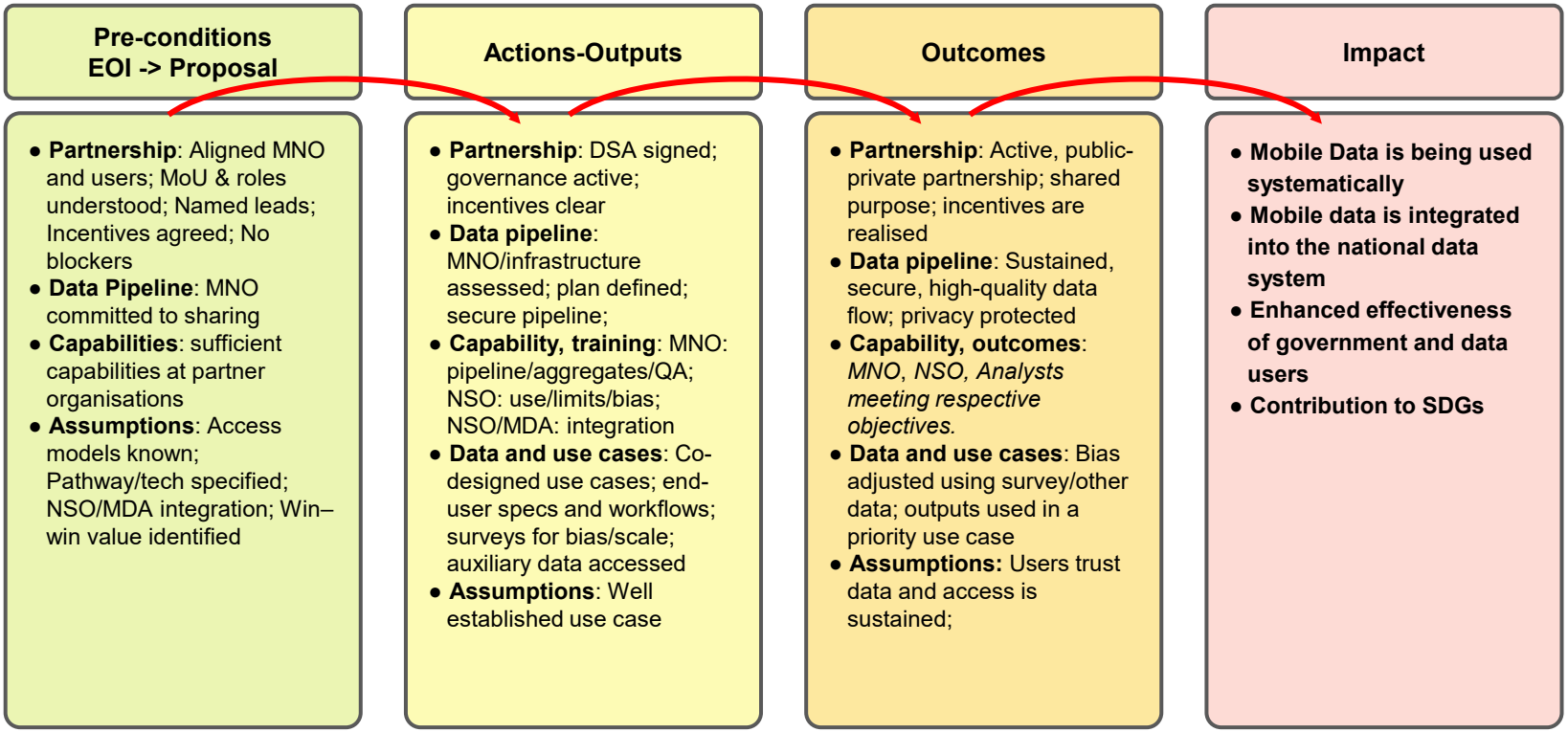
This captures all the kinds of support that a country might need from the programme at different stages along it's 'pathway to impact'



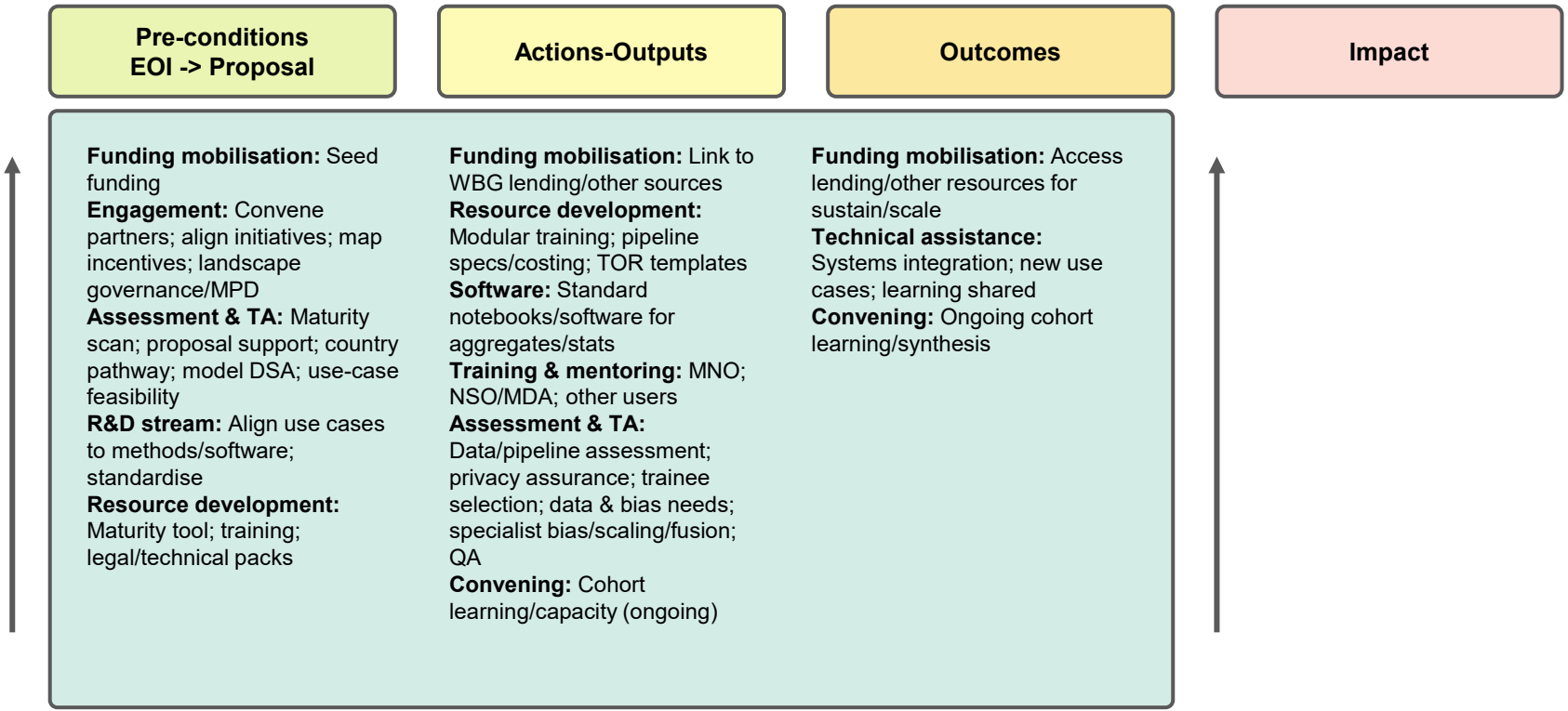
Assumptions we've identified along the way

FLOWMINDER.ORG

Country Pathway to Impact: ToC Summary



Country Pathway to Impact: Summary of GDF support



Narrative description of the MPD4P Theory of Change

Online resources

Putting Mobile Phone Data to work for Policy: Theory of Change Narrative

A summary narrative document to support readers of the Theory of Change for the *Putting Mobile Phone Data to work for Policy* programme hosted by the World Bank

Introduction

This document sets out in more detail the Theory of Change described here for the World Bank's programme 'Putting Mobile Phone Data (MPD) window. This Theory of Change is a work in progress and currently being consulted on (June 2024).

Background to the programme

Launched in 2023, the programme aims to 'mobilise investments to accelerate local capacity to integrate the responsible use of anonymized, aggregated MPD into National Data systems for real-time statistics and responsive policy solutions'. To read an explanatory powerpoint presentation about the programme, please see here.

Why mobile phone data?

In LMICs with constraints to generating reliable data through traditional methods, and scarcity of data sources, non-traditional data and Big Data such as mobile phone metadata, can be applied and combined with other data, using new methods, to rapidly generate current information. Its strengths include that it has large geographic scale and penetration and high granularity, and that it is automatically generated in near-real time.

What are the barriers to use of mobile phone data?

The programme is being designed, in part, to tackle some of the barriers to adoption of mobile phone data being used as one of the tools that can inform data-driven decision making.

Some of these barriers to use include:

- low awareness and understanding of the potential, and limitations, of the data
- concerns about data protection for privately-held data
- limited experience of establishing public-private data partnerships for accessing privately-held data, and legal and data protection agreements
- cost of establishing data pipelines
- need for engineering expertise to establish reliable privacy protecting data pipelines and software
- scarcity of analytical skills to develop robust methods for different applications
- capacity gaps in LMICs, from technical capabilities to available human resources
- few fully realised and evidenced, replicable data use cases, and limited range of applications to date
- limited experience of integrating non-traditional data products into national data ecosystems to facilitate use and sustainability

The Theory of Change

Background

Purpose

The purpose of the Theory of Change is to:

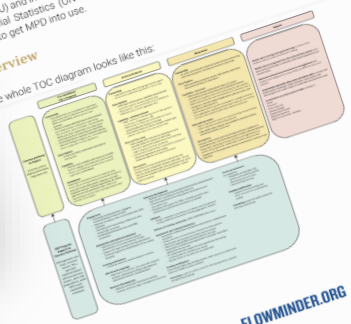
- Describe the shared vision of the programme
- Identify what needs to happen at country level, identifying key assumptions, and what the GDF-MPD programme needs to do, to support countries
- Provide a communication tool for sharing these ideas with relevant stakeholders for refinement and validation
- To guide monitoring and evaluation (the Theory of Change will be updated ad hoc, based on ongoing learning)

Development process

This Theory of Change was developed with the World Bank project team working on the Global Data Facility Mobile Phone Data window, together with staff from the International Telecommunications Union (ITU) and in consultation with members of the UN Committee of Experts on Big Data and Data for Official Statistics (UN-CEBD), drawing on collective experience in the sector regarding 'what works' to get MPD into use.

Overview

The whole TOC diagram looks like this:

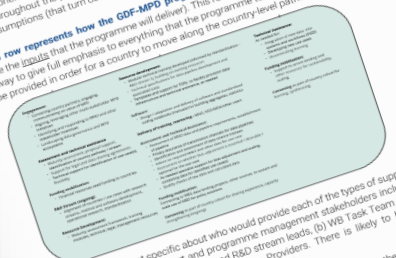


The **top row** of this diagram represents **a country-level pathway to a set of desired outcomes** including:

- A public-private **partnership** between country stakeholders
- Sustained, privacy protecting **provision of mobile phone data (MPD)**
- Stakeholder **capability to process and analyse** the data
- The **data being applied** to a national policy/programme related use case

This is intended to be a generic pathway that would be relevant to any country included in a WB-GDF programme cohort, and it does not presuppose a particular use case. Countries may be starting from different points in the pathway (maturity); stakeholders will vary; the partnership arrangements are likely to be different; and aspects such as how data is accessed, what types of data, who analyses and who uses it will vary across countries. But there are general similarities and some standard components that are required. Part of the purpose of developing and using the ToC as a learning tool throughout the programme is to identify the range of variation and any unanticipated actions, or assumptions (that turn out to be necessary conditions) for outcomes to be achieved.

The bottom row represents how the GDF-MPD program would support the country along the pathway (i.e the inputs that the programme will deliver). This row is separated out from the country-level pathway to give full emphasis to everything that the programme team understands must be in place or be provided in order for a country to move along the country-level pathway



This 'support pathway' is not specific about who would provide each of the types of support needed. For this programme, the key support and programme management stakeholders include: (a) GDF-MPD programme management core team and R&D stream leads; (b) WB Task Team Leads (TTLs), and (c) other suppliers, such as Technical Service Providers. There is likely to be variation in particular in how the specialist technical support is provided.

The support needs will probably also vary by country according to, for example, the stage of maturity (where they are starting from with partnerships and capabilities), and what kind and complexity of data analysis and use they want to deliver.

THE WORLD BANK FLOWMINDER.ORG

Maturity Assessment for Mobile Phone Data Initiatives

Maturity Framework as a planning tool

Granular descriptions of the different dimensions that constitute an MPD initiative and what different levels of maturity might look like for each dimension.

Purpose:

- Identify the types of support that an initiative needs to develop
- Assess how an initiative has progressed within the programme

Online resources

Structure | Maturity Stages

Pre-foundation	Foundation	Practitioner	Expert
No MPD being shared or analysed (except internal business intelligence by MNO). Data controller(s) and data user(s) are in negotiation but **no agreement has been signed**, no regulatory has been sought or approved and/or no legal basis has been established. Some potential applications have been identified in broad terms, but there are **no plans for implementation**	There is some initial building of **capacity and technical infrastructure** for the (small-scaled) storage and processing of MPD but no export or analysis of MPD (except internal business intelligence). **MPD only available for a short period** of time (e.g. most recent 6 months) **Data controllers(s) and user(s) are in alignment** and seeking engagement with regulators and other stakeholders. **Some applications identified** in some detail, with plans for pilots/proofs of concept.	There is **suitable technical capacity and infrastructure** for the regular export of MPD-derived anonymised aggregates and indicators to data user(s). **MPD is available** for an extended period of time (e.g one or more years) The data controller(s) and user(s) have **signed agreements and have approval** from regulators. The necessary governance structures are in place to manage and maintain the relationship. Some **pilots/proofs of concept have been delivered** for some applications. There are **plans for scaling** of applications.	There is **strong technical capacity and infrastructure** for the secure, reliable, and speedy processing of MPD and export of anonymised aggregates and indicators to data users. The available **MPD data covers a long period of time** (e.g. 3+ years). A broad range of stakeholders are involved in **governance**. **Applications are being delivered at scale.**

Structure | Areas of Assessment

Assessment Area	Question
Feasibility	*"To what extent do the conditions in a country allow for and facilitate the use of MPD for official statistics?"*
Impactfulness	*"To what extent does the use of MPD for official statistics result in improved decision-making that benefits the people of a country?"*
Sustainability	*"To what extent do current structures and processes enable the long-term use of MPD for official statistics?"*

Assessment Dimensions

Areas of assessment	Dimensions
Feasibility	SUITABILITY OF LEGAL AND GOVERNANCE ENVIRONMENT
	STAKEHOLDER ENGAGEMENT AND ALIGNMENT
	SUITABILITY OF DATA INFRASTRUCTURE
	SUITABILITY OF DATA ENVIRONMENT
	HUMAN RESOURCE CAPACITY AND AVAILABILITY
Impactfulness	IDENTIFICATION AND IMPLEMENTATION OF APPLICATIONS
	POTENTIAL FOR AND PROTECTIONS AGAINST MISUSE
Sustainability	SUSTAINABILITY PROSPECTS

Feasibility

SUITABILITY OF LEGAL AND GOVERNANCE ENVIRONMENT	*Legal & regulatory framework* *Data governance policies of the data controller(s)* *(i.e. Mobile Network Operator(s) (MNOs) or telecommunications regulator)* *Data governance policies of the data end-users* *(e.g. National Statistical Office (NSO), other Ministries, Departments and Agencies (MDAs))* *Public perception*
STAKEHOLDER ENGAGEMENT AND ALIGNMENT	*Disposition of the Data Controller(s)* *(e.g. Mobile Network Operator(s) (MNOs), telecommunications regulator)* *Disposition of the Data User(s)* *(e.g. National Statistical Office (NSO), other Ministries, Departments and Agencies (MDAs))* *Disposition of regulatory bodies*

Feasibility (continued)

SUITABILITY OF DATA INFRASTRUCTURE	*Data Infrastructure of individual Data Controller(s)* *(i.e. Mobile Network Operator(s) (MNOs), telecommunications regulator)* *Data infrastructure of Data Users* *(e.g. National Statistical Office (NSO), other Ministries, Departments and Agencies (MDAs))*
SUITABILITY OF DATA ENVIRONMENT	*Partnership-level data coverage* *Availability and suitability of cell data* *Availability and suitability of census and survey data* *Suitability of complementary data sources from data end-users* *(e.g. National Statistical Office (NSO), other Ministries, Departments and Agencies (MDAs))* *Acceptance and usage of non-traditional data*
HUMAN RESOURCE CAPACITY AND AVAILABILITY	*Human resource capacity and availability at Data Controller(s)* *(e.g. Mobile Network Operator(s) (MNOs), Telecommunications Regulator)* *Human resource capacity and availability at Data Users* *(e.g. National Statistical Office (NSO), other Ministries, Departments and Agencies (MDAs))*

Impactfulness

IDENTIFICATION AND IMPLEMENTATION OF APPLICATIONS	*Identification of applications* *Implementation of applications* *Sharing, publication and use of outputs*
IDENTIFICATION OF AND PROTECTION AGAINST MISUSE	*Awareness of ethical considerations* *Suitability of ethical oversight and governance processes*

Sustainability

SUSTAINABILITY PROSPECTS	*Prospects for ongoing funding of the initiative* *Prospects for ongoing uninterrupted data access* *Capacity of stakeholders to maintain the data pipeline independently*

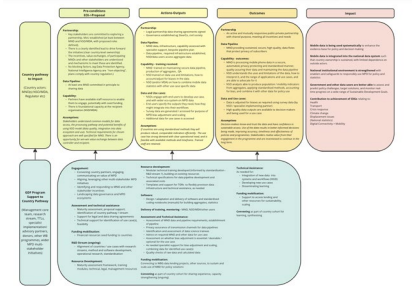
Summary

The ToC and MF support system-level design

Theory of change (ToC): Programme design tool; shows how and why activities lead to impact

Maturity framework: Current-state diagnostic; shows where we are and what is missing

Used together:
Confirm required components;
highlight gaps;
guide design and support



Areas of assessment	Dimensions
Feasibility	
Impactfulness	
Sustainability	

FLOWMINDER.ORG

Daniel A Power PhD
Managing Director, Flowminder Foundation

daniel.power@flowminder.org


www.flowminder.org


info@flowminder.org


@Flowminder

World Telecommunication Indicators Symposium (WTIS)
22-23 September 2025, Geneva

ITU WTDC BAKU 2025
17–28 November 2025
Baku, Azerbaijan

Mapping Connectivity for Saving Lives

Early Warning Connectivity Map (EWCM)

Paul Hamilton & Chris Emberson

Disaster Connectivity Map (DCM) and Early Warnings for All (EW4All)
Climate Change and Emergency Telecommunication Division

97.9%
of the world population is covered by mobile network

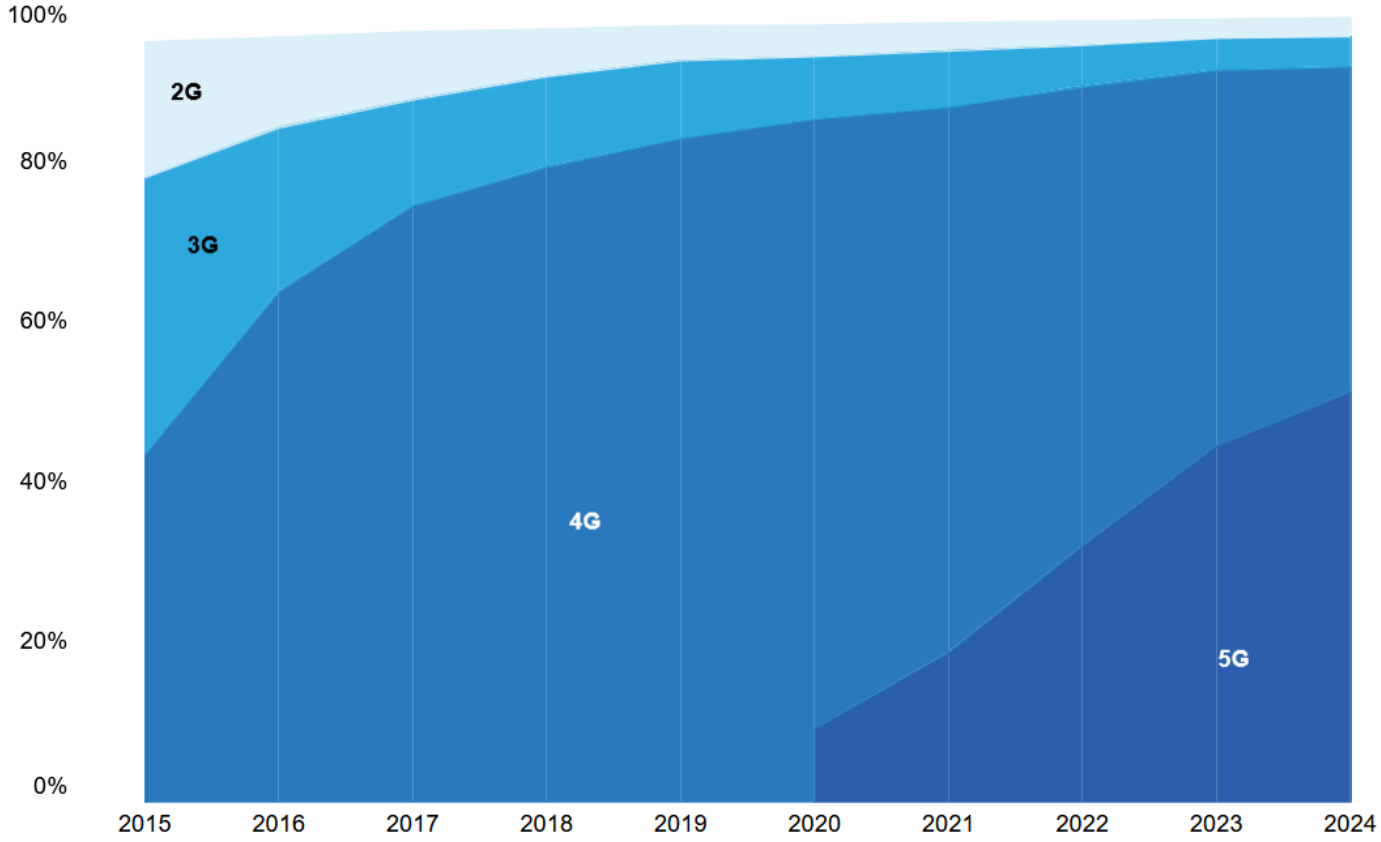
173 million (2.1%)
people beyond reach of 2G+ coverage

362 million (4.4%)
people beyond reach of 3G+ coverage

4 in 5
people own a mobile phone

yet, around 140 countries
have no inclusive mobile early warning systems

Population coverage by type of mobile network, 2015-2024



Note: The values for 2G, 3G and 4G networks show the incremental percentage of the population that is not covered by a more advanced technology network (e.g. in 2024, 96 per cent of the world population is covered by at least a 3G or above network, with 4 per cent having only 3G, 41 per cent having 4G, and 51 per cent having 5G). There are insufficient data to produce estimates for 5G coverage prior to 2020.

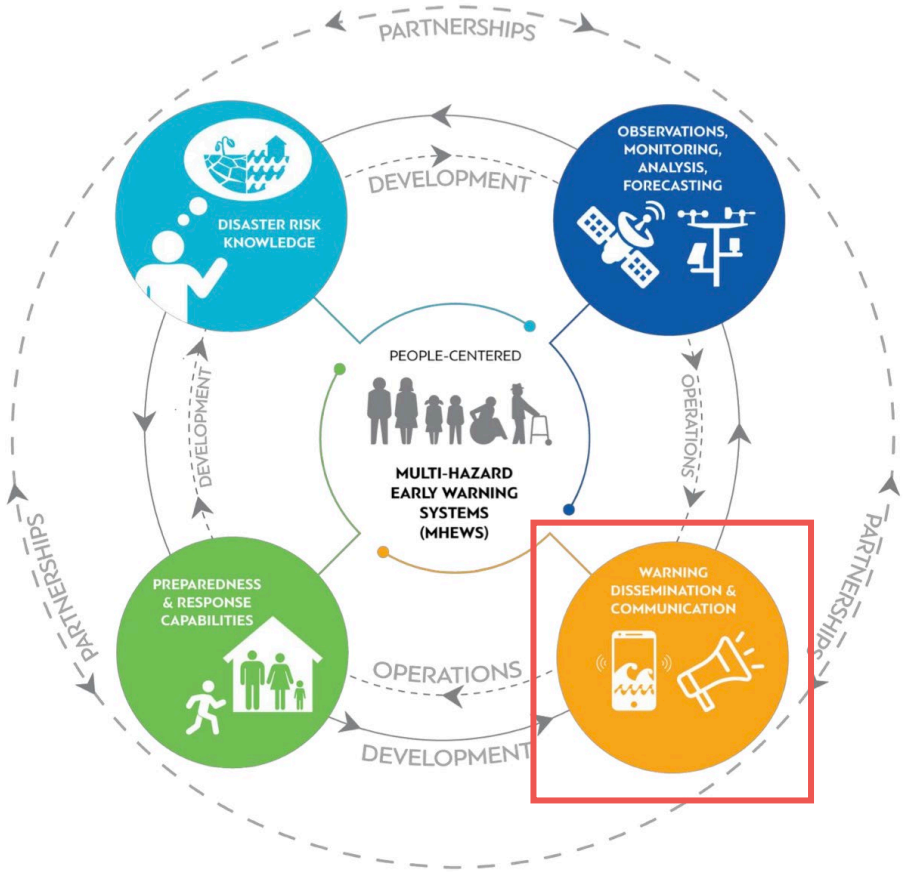
ITU WTDC BAKU2025

ITU

Under the UN Secretary-General's Early Warnings for All initiative (EW4All),

ITU is working to ensure early warnings reach people at risk…

…by identifying connectivity gaps, hazards and vulnerable populations



FOUR pillars of EW4All initiative, ITU leads Pillar 3: Warning Dissemination and Communication

Developed the Early Warning Connectivity Map (EWCM)

to see where and how many people are within coverage, and where connectivity ‘coldspots’ leave populations unreachable by mobile alerts

ITUWTDC BAKU2025

By layering...

1. Connectivity Map

based on mobile coverage and crowdsourced connectivity data, leveraging today's widespread digital networks to map 'near-live' connectivity

2. Population Density Map

based on AI-powered population estimates and satellite analysis through collaboration with tech partners

3. Hazard Map

based on 11 natural hazards, from very low to high risk, to reveal population vulnerability

ThinkHazard!

Identify natural hazards in your project area and understand how to reduce their impact

EWCM Country Pilots

Sharing EWCM data

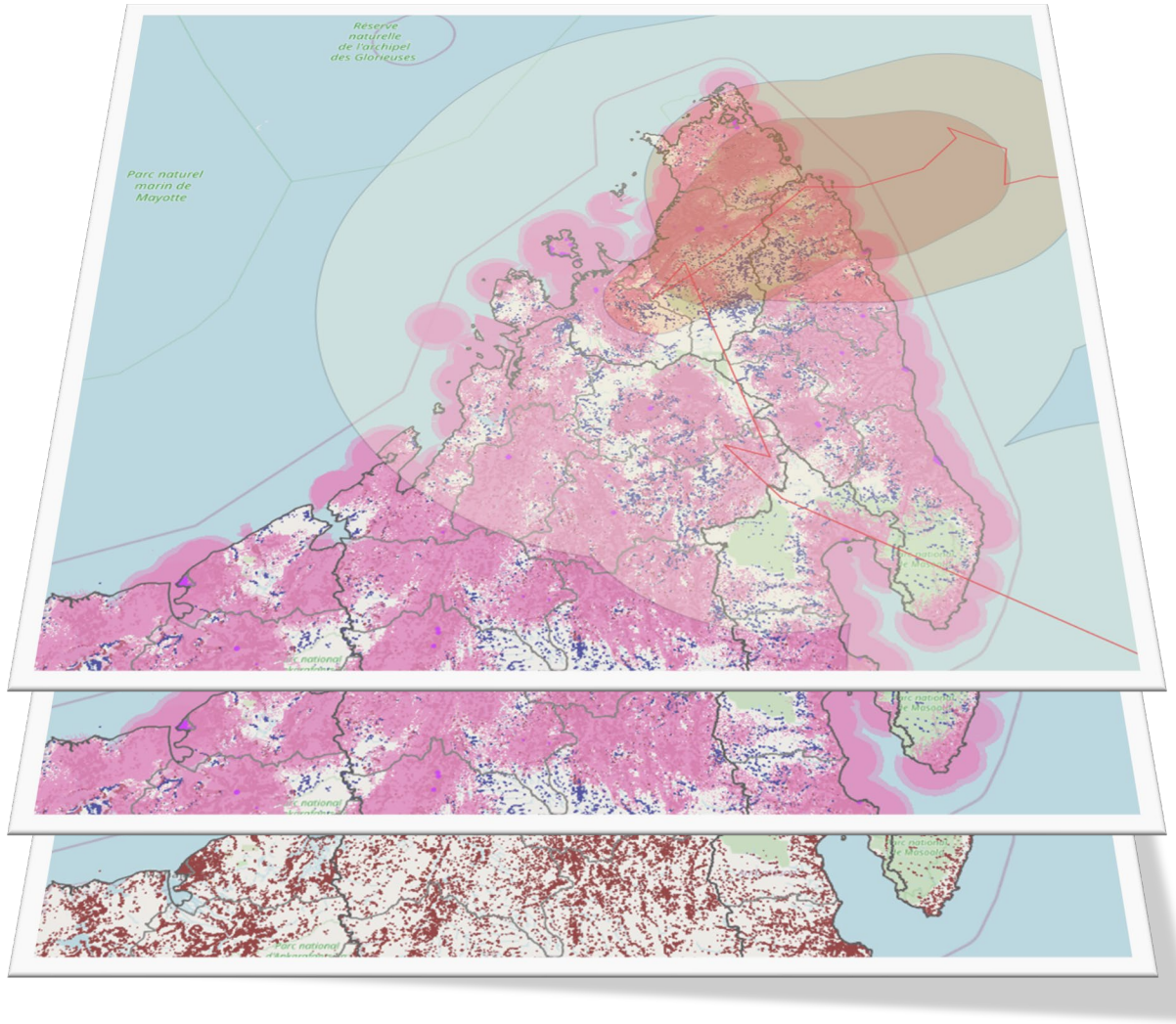
Mapping completed for 33 EW4All countries, scaling to more

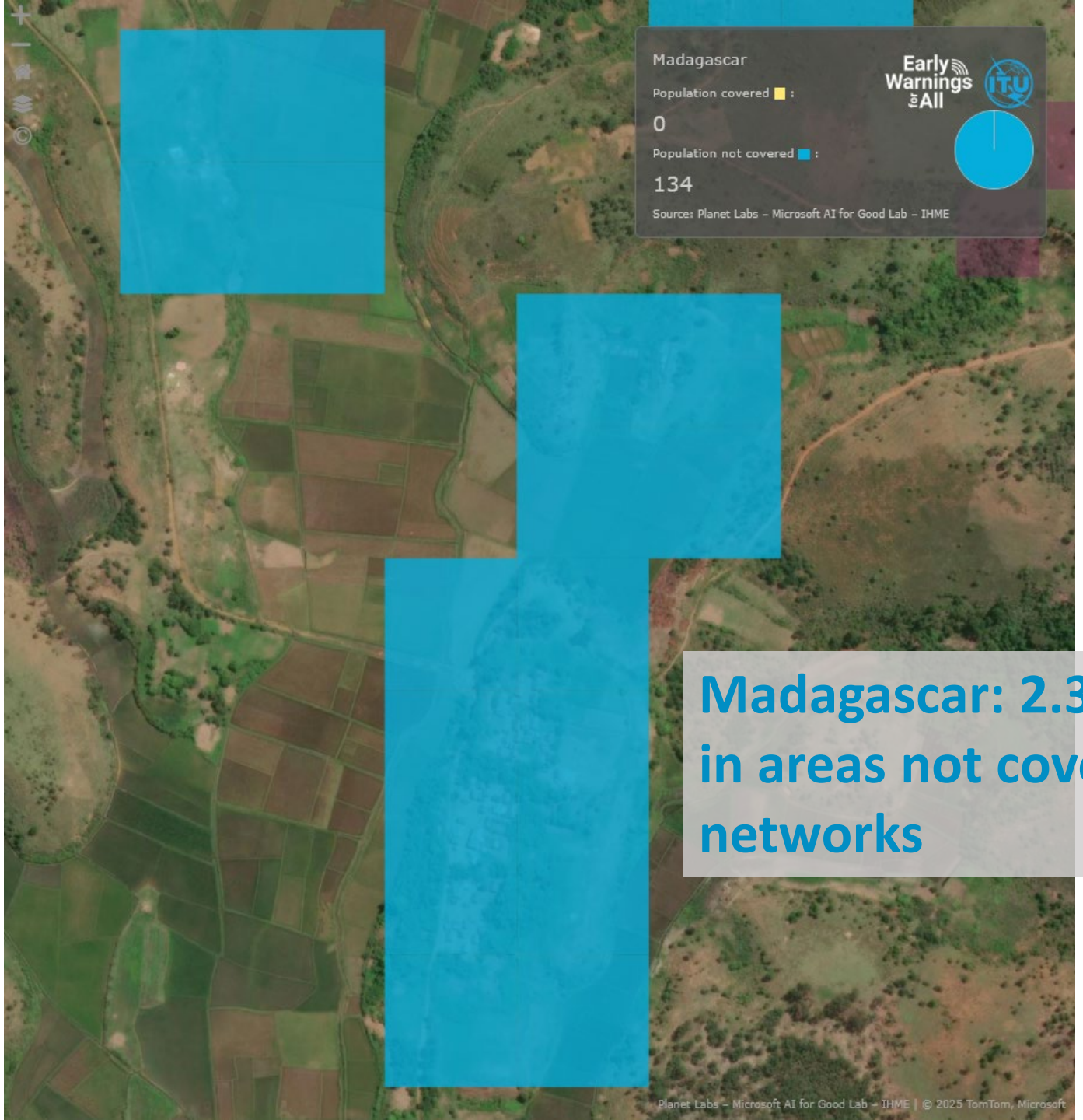
Data validation

Collaborating with member states and mobile network operators during EW4All workshops to validate results

Capacity building

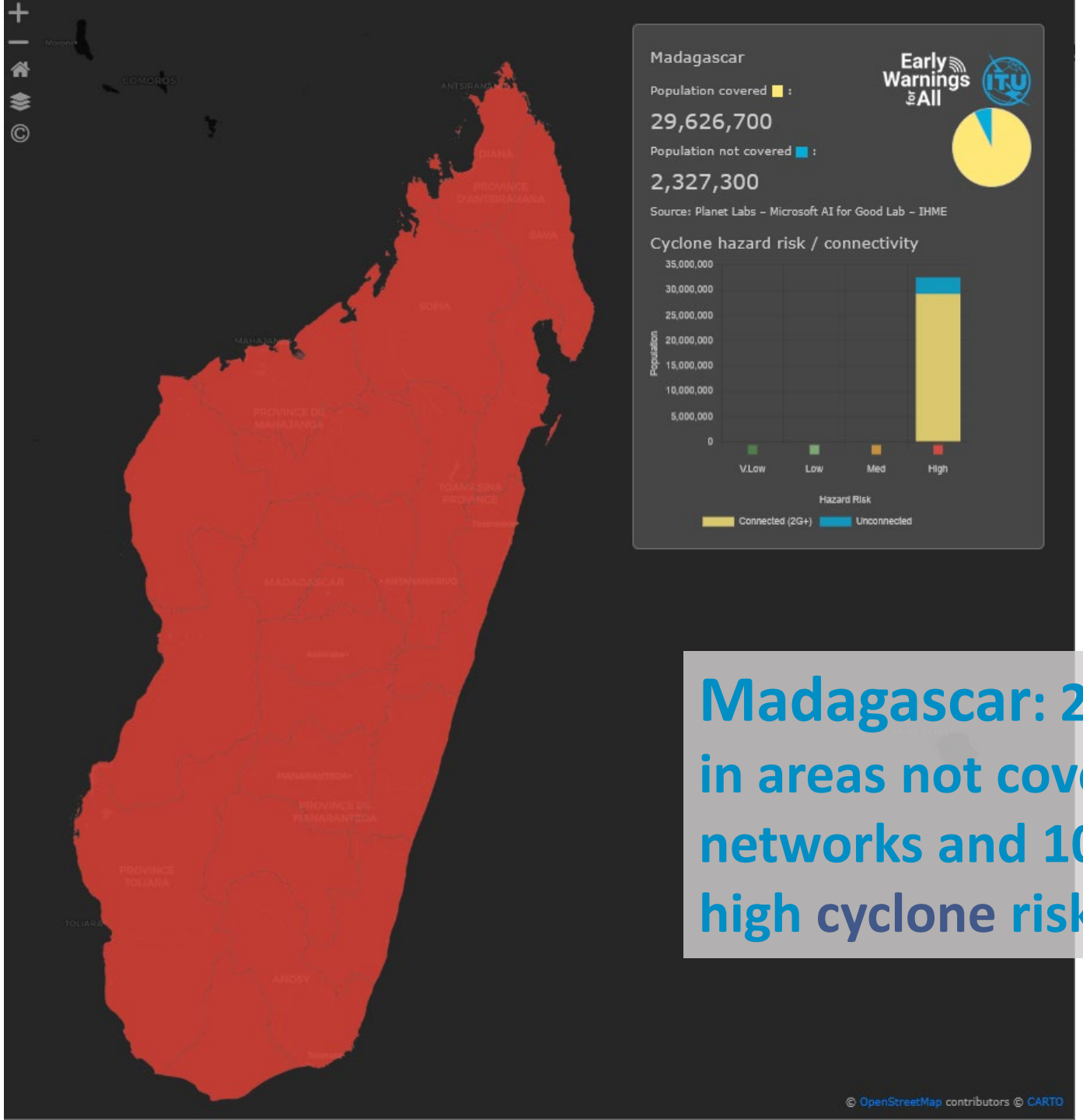
Training telecom regulators and relevant national stakeholders in geospatial data analysis to produce and use the EWCM data independently





Madagascar: 2.3M people live in areas not covered by digital networks

ITU WTDC BAKU2025



Madagascar: 2.3M people live in areas not covered by digital networks and 100% exposed to high cyclone risk

ITUWTDC BAKU2025

EWCM data complements official statistics, providing policymakers with an evidence-base for emergency preparedness and telecommunications planning

Applications for Policy

Identify Vulnerable Populations

Reveals communities with limited digital network connectivity requiring alternative warning systems and targeted preparedness.

Develop Multi-Channel Approach

Combine sirens, radio broadcasts, and community-based alerts to reach populations.

Prioritize Infrastructure Investment

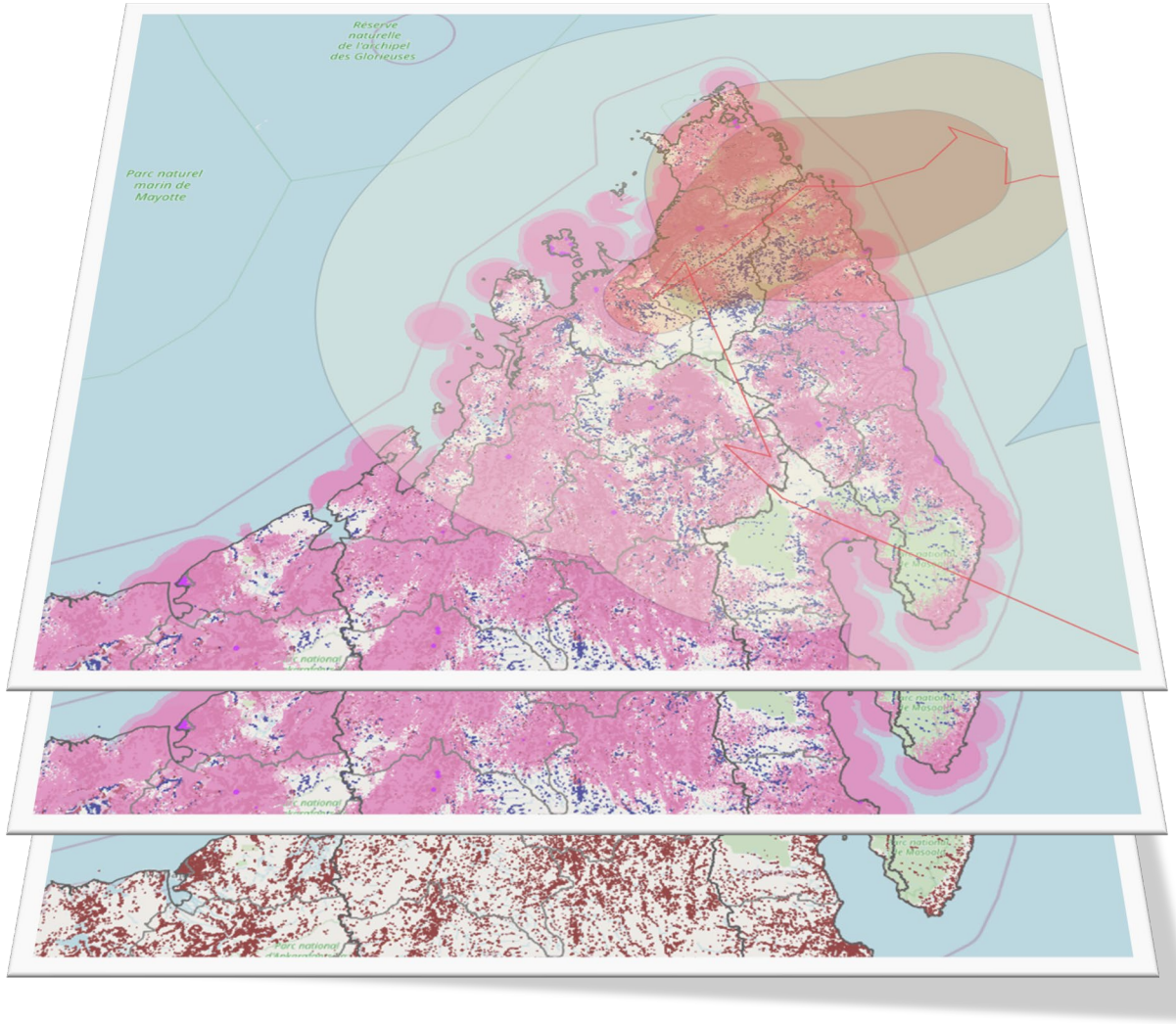
Utilize connectivity gap data to guide investment for network expansion and strengthen resilience.

Applications Beyond Early Warnings

- Multi-sector applications: Connectivity data supports social and economic inclusion, health and education delivery, network performance monitoring, and more.
- Policy & development: Data-driven decisions and resource targeting.
- Technical enhancement: Greater data granularity and advanced technical capabilities.

Support us on testing and refining the EWCM

- Sharing data (up-to-date cellular coverage data)
- Verifying results
- Providing feedback
- Contributing case studies



Together, we can build more connected, resilient communities where no one is left unreachable in times of disaster

ITUWTDC BAKU2025

Thank you

Disclaimers

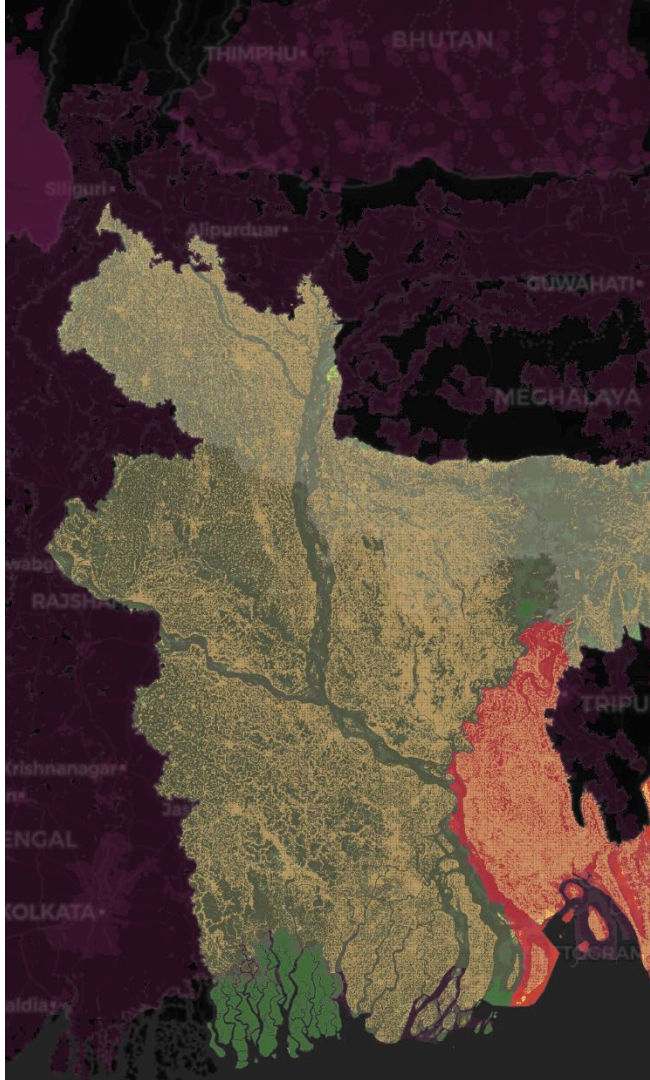
The EWCM 'near-live' connectivity map layer is based on the Disaster Connectivity Map (DCM) which uses multiple sources for network infrastructure, cellular coverage and connectivity measurements. These sources include the ITU Transmission Map, GSMA and CollinsBartholomew Ltd cellular coverage maps, Opencellid, Meta for Good, Measurement Lab (M-Lab), netBravo, Ookla for Good, and Speedchecker. The infrastructure and coverage data has been validated by ITU Member States and supplied by Mobile Network Operators, and is then augmented with updated and real-time crowd-sourced connectivity data from a number of data sources.

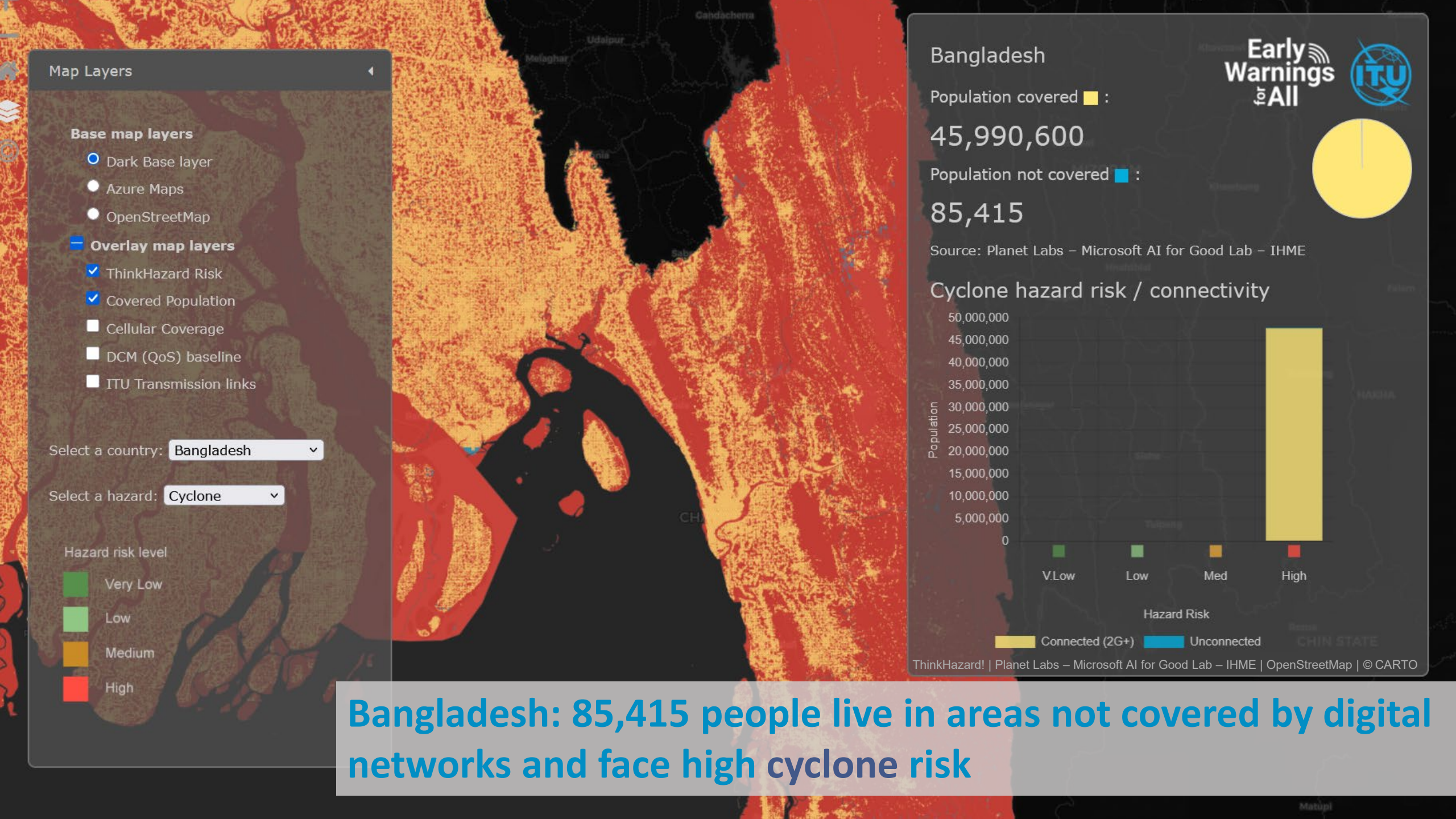
A number of ground truth tests have been carried out to compare results to connectivity levels observed on the ground, including by first responders. The connectivity levels, availability and gaps displayed in the map reflect the availability of these data sources and may in certain cases not provide the full connectivity picture. To further improve the quality and reliability of the map, engagement is ongoing with different partners to identify new data sources and AI applications that could be used to further improve the quality and reliability of the data.

Member States, Mobile Network Operators, and partners are invited to review, validate, and help improve the results.

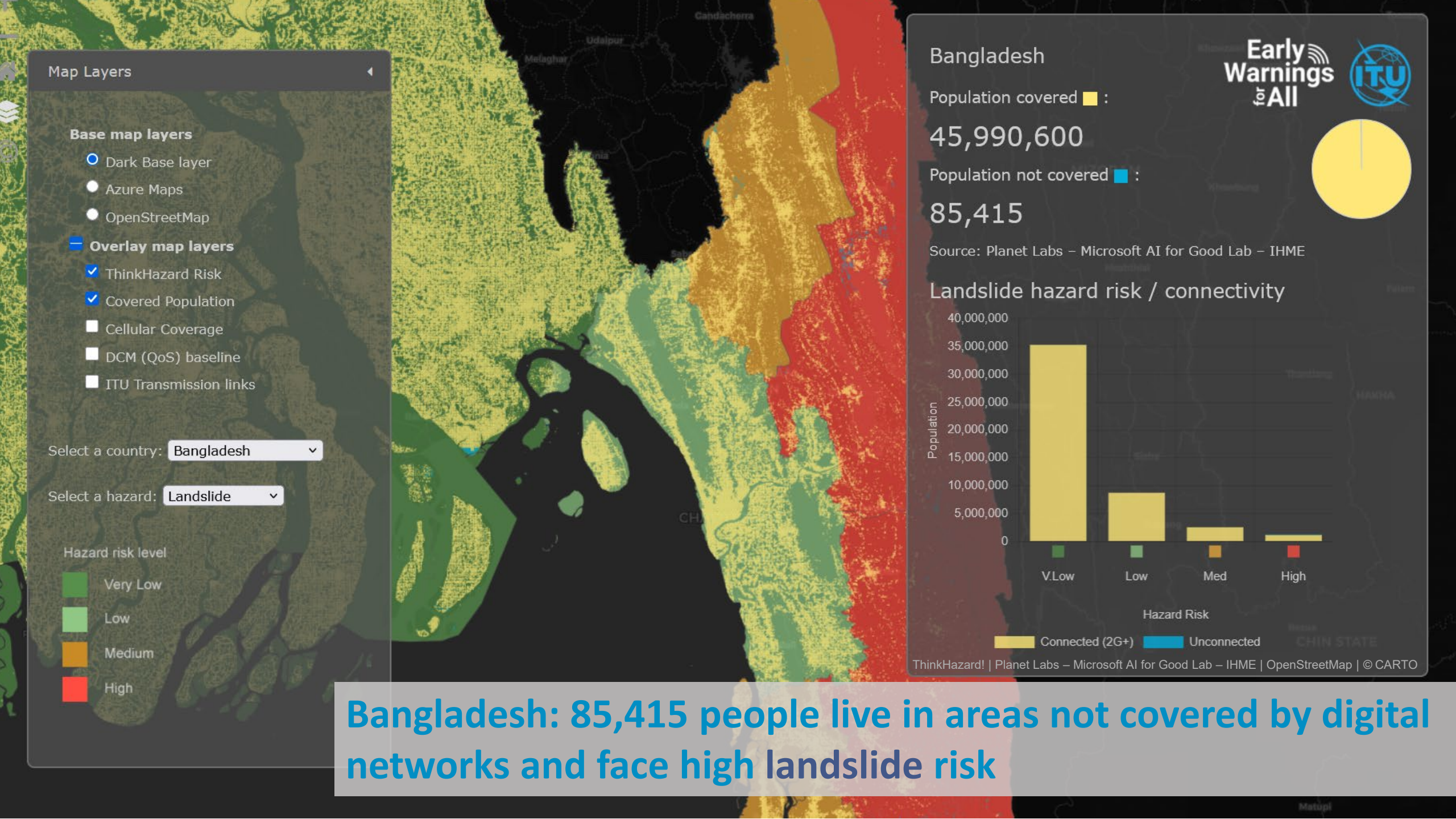
ITU WTDC BAKU2025

Learn more: www.dcm.itu.int





Bangladesh: 85,415 people live in areas not covered by digital networks and face high cyclone risk



Bangladesh: 85,415 people live in areas not covered by digital networks and face high landslide risk