



4TH INTERNATIONAL CONFERENCE ON  
**BIG DATA**  
*for Official Statistics*

8-10 NOVEMBER 2017  
BOGOTA, COLOMBIA

**IMPROVING DATA  
AVAILABILITY  
FOR THE SDGs**  
*AN OVERVIEW OF THE  
IMPORTANCE OF ICT INDICATORS  
FOR THE SDGs*

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Bogota | 8th November 2017





Potential of information and communication technologies (ICT) to promote sustainable development.

# THE ROLE OF ICTs IN THE SUSTAINABLE DEVELOPMENT AGENDA (SDGs)



- 1 ICTs are a fundamental component in achieving of the Sustainable Development Goals (SDGs).
- 2 ICTs integrate and accelerate the pillars of sustainable development: economic growth, social inclusion and environmental sustainability.
- 3 Measuring and tracking the expansion of ICTs is critical to the process of designing and monitoring of public policies fostering sustainable development.

# MONITORING FRAMEWORK FOR THE SUSTAINABLE DEVELOPMENT GOALS



- Targets that explicitly mention ICTs;
- Targets that mention something related to ICTs;
- Targets that do not mention ICTs, but in which ICTs clearly play an important role.

## TIERED INDICATORS SYSTEM:

- I. Conceptually clear / Agreed int'l definition / Regularly produced.
- II. Conceptually clear / Agreed int'l definition / Not yet regularly produced.
- III. Int'l standards (concepts and definitions) still need to be developed.

# SDGs AND ICTs

## ICT-RELATED GOALS AND TARGETS

### WSIS Action Lines SDGs Matrix

	C1	C2	C3	C4	C5	C6	e-gov	e-bus	e-lea	e-hea	e-emp	e-env	e-agr	e-sci	C8	C9	C10	C11
SDG 1																		
SDG 2																		
SDG 3																		
SDG 4																		
SDG 5																		
SDG 6																		
SDG 7																		
SDG 8																		
SDG 9																		
SDG 10																		
SDG 11																		
SDG 12																		
SDG 13																		
SDG 14																		
SDG 15																		
SDG 16																		
SDG 17																		

Source: ITU (2016)



WSIS Action Lines and the 17 SDGs: strengthening the impact of ICTs for sustainable development.
















# SDGs AND ICTs

## ICT-RELATED GOALS AND TARGETS

### NOT ALL SDGs HAVE AN ICT COMPONENT CORRESPONDING TO THE SDGs TARGETS

### OECD IDENTIFIED HOW ICT COULD CONTRIBUTE TO EACH OF THE 17 GOALS

Source: OECD (2017)

 <p><b>1 NO POVERTY</b></p>	<p><b>Target 1.a:</b> By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services [...], appropriate <b>new technology</b> and financial services, including microfinance. (*)</p>	 <p><b>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</b></p>	<p><b>Target 9.c:</b> Significantly increase access to <b>information and communications technology</b> and strive to provide <b>universal and affordable access to the Internet</b> in the least developed countries by 2020.</p>
 <p><b>2 ZERO HUNGER</b></p>	<p><b>Target 2.a:</b> Increase investment [...] in rural infrastructure, agricultural research and extension services, <b>technology development</b> and plant and livestock gene banks [...].*</p> <p><b>Target 2.c:</b> Adopt measures to ensure the proper functioning of food commodity markets [...] and facilitate timely <b>access to market information</b>, including on food reserves, in order to help limit extreme food price volatility.</p>	 <p><b>10 REDUCED INEQUALITIES</b></p>	<p>ICTs, especially through mobile-based services, can help reduce inequality by drastically <b>expanding access to information</b>, contributing to individual empowerment and social inclusion of individuals who used to fall outside the reach of traditional services. (*)</p>
 <p><b>3 GOOD HEALTH AND WELL-BEING</b></p>	<p>The use of ICTs in the health sector can result in higher quality health care that is safer and more responsive to patients' needs. <b>E-health</b> can be particularly important in rural and remote areas, facilitating innovative models of care delivery, such as telemedicine and mobile health. (*)</p>	 <p><b>11 SUSTAINABLE CITIES AND COMMUNITIES</b></p>	<p>ICTs can be leveraged to organise cities and communities more efficiently. <b>Smart cities</b> use ICTs and big data to improve public service delivery and to advance broad policy outcomes such as energy savings, safety, urban mobility and sustainable development. (*)</p>
 <p><b>4 QUALITY EDUCATION</b></p>	<p><b>Target 4.b:</b> By 2020, substantially expand globally the number of scholarships available to developing countries [...] for enrolment in higher education, including vocational training and <b>information and communications technology</b>, technical, engineering and scientific programmes, in developed countries and other developing countries.</p>	 <p><b>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</b></p>	<p>ICTs, and especially broadband, have directly connected consumers and producers and given rise to "<b>on demand</b>" markets of products that can be customised and localised, which can save time, reduce transport costs and contribute to more efficient and sustainable consumption. (*)</p>
 <p><b>5 GENDER EQUALITY</b></p>	<p><b>Target 5.b:</b> Enhance the use of enabling technology, in particular <b>information and communications technology</b>, to promote the empowerment of women.</p>	 <p><b>13 CLIMATE ACTION</b></p>	<p>Use of the <b>Internet of Things</b> can help make monitoring the environment cheaper, faster and more convenient. (*)</p>
 <p><b>6 CLEAN WATER AND SANITATION</b></p>	<p><b>7 AFFORDABLE AND CLEAN ENERGY</b></p> <p>ICTs can contribute to improving water and energy access by using <b>mobile solutions, smart grids and meters</b> to advance efficiency, manage demand and develop new ways to expand access. (*)</p>	 <p><b>14 LIFE BELOW WATER</b></p>	<p>The use of ICTs in the public sector can improve the range and uptake of <b>digital government</b> services; strengthen the performance of public institutions and enhance transparency and the participation of all citizens. (*)</p>
 <p><b>8 DECENT WORK AND ECONOMIC GROWTH</b></p>	<p><b>Target 8.2:</b> Achieve higher levels of economic productivity through diversification, <b>technological upgrading and innovation</b>.</p> <p><b>Target 8.3:</b> Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, <b>creativity and innovation</b>, and encourage the formalisation and growth of micro-, small and medium-sized enterprises, including through access to financial services.</p>	 <p><b>16 PEACE AND JUSTICE</b></p>	<p><b>Target 17.8:</b> Fully operationalise the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular <b>information and communications technology</b>.</p>
 <p><b>17 PARTNERSHIPS FOR THE GOALS</b></p>			

Note: Not all SDGs had an ICT component officially included in a corresponding target by the UN. In those cases, identified by (\*), examples were identified by the OECD to depict how ICT could contribute to that particular goal.

Sources: United Nations General Assembly (2015), "Transforming our world: the 2030 Agenda for Sustainable Development", <https://sustainabledevelopment.un.org/post2015/transformingourworld>; OECD.



# The importance of measuring ICT4SDGs: *Data sources, methods of collection, data disaggregation*

# DATA SOURCES AND COLLECTION METHODS FOR MONITORING ICT4SDG

## Administrative Data

National observatories



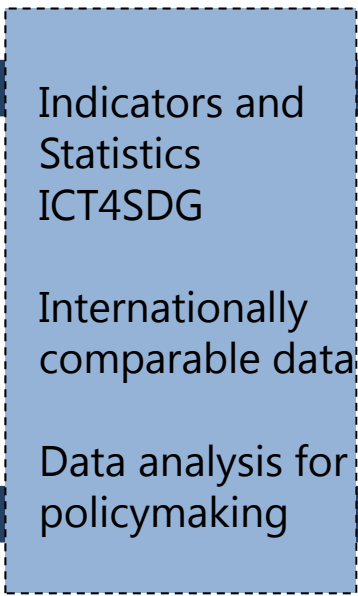
- ❑ Designed data from Ministries and Regulatory Agencies
- ❑ Lack of data about use and appropriation

## Survey Data

National Statistics Offices



- ❑ Designed data: sample surveys
- ❑ Data collection: respondent (face-to-face, CATI, CAWI)
- ❑ Cooperation with government, academia and international organizations



- ICT Infrastructure
  - ICT Services
- (Supply side)**

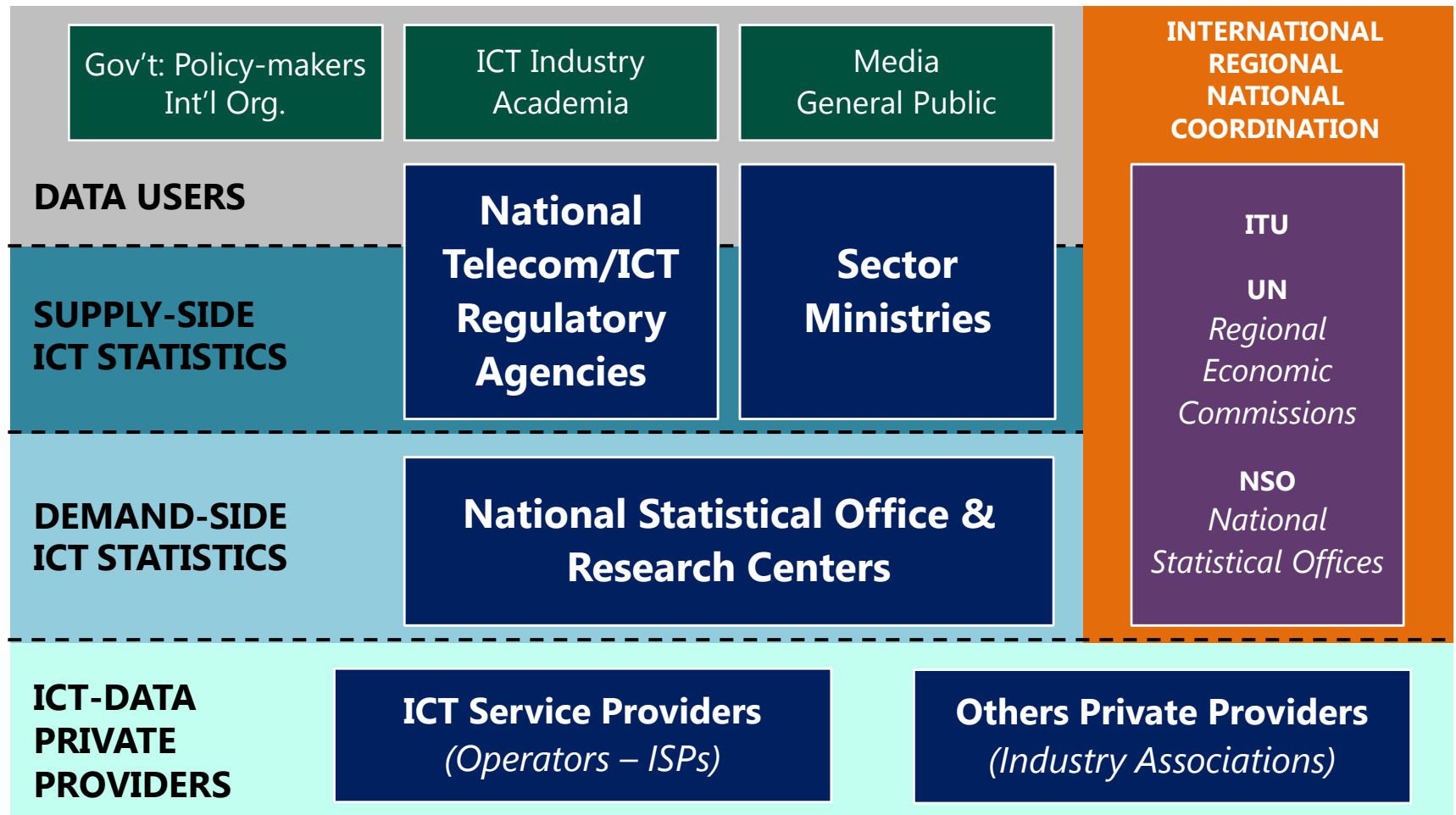
## Big Data

- Organic data
  - Alternative data sources
  - Data analytics
- 
- ICT Infrastructure
  - ICT Services
  - ICT Usage
  - ICT Skills
  - Online activities
  - Barriers & motivations
- (Demand side)**

Source: Cetic.br (2017)



# ECOSYSTEM OF ICT STATISTICS



Source: Adapted from ITU (2014)



# Measuring ICT4SDGs: *ICT Surveys in Brazil*

# ICT AS AN ENABLERS TO ACHIEVE GOALS

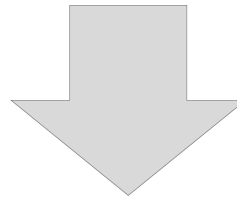
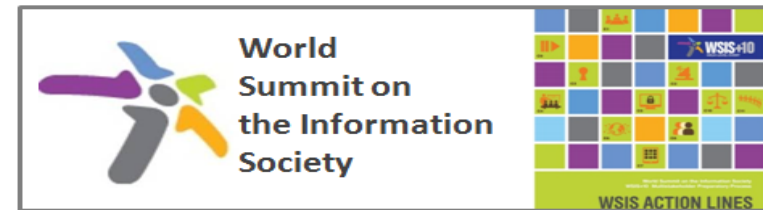
## ICT SURVEYS



UN Sustainable Development Goals



WSIS Action Lines



Agenda Digital de América Latina y el Caribe



INDIVIDUALS
<ul style="list-style-type: none"> <li>❑ HOUSEHOLDS &amp; INDIVIDUALS</li> <li>❑ RIGHTS &amp; PROTECTION</li> </ul>

ORGANIZATIONS		
<ul style="list-style-type: none"> <li>❑ EDUCATION</li> <li>❑ HEALTH</li> <li>❑ CULTURE</li> </ul>	<ul style="list-style-type: none"> <li>❑ ENTERPRISES</li> <li>❑ GOVERNMENT</li> <li>❑ NON-GOV'T ORG.</li> </ul>	<ul style="list-style-type: none"> <li>❑ ISP PROVIDERS</li> <li>❑ TELECENTERS</li> </ul>

Source: Cetic.br (2017)

# SDG & ICT-RELATED INDICATORS

## SURVEY DATA AVAILABLE IN BRAZIL



**Target 4.4** By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

**Indicator**  
→ Proportion of youth/adults with ICT skills, by type of skills.



**Target 4.a** Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.

**Indicators**  
→ Proportion of schools with access to the Internet for pedagogical purposes.  
→ Proportion of schools with access to computers for pedagogical Purpose.



# SDG & ICT-RELATED INDICATORS

## SURVEY DATA AVAILABLE IN BRAZIL



**Target 5.b** Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.

### Indicator

→ Proportion of individuals who own a mobile telephone, by sex.



**Target 17.8** Fully operationalize the technology bank and STI capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology.

### Indicator

→ Proportion of individuals using the Internet.



# SDG & ICT-RELATED INDICATORS

## SURVEY DATA AVAILABLE IN BRAZIL



### ICT in Health Survey

- o Access to ICT in healthcare facilities; telehealth; e-health.



### ICT in Education Survey

#### ICT Kids Online Survey

#### ICT Households Survey

- o Access to ICT in households
- o Access to ICT in schools
- o ICT skills & training in ICT



### ICT Electronic Government Survey

- o e-government, information and service delivery, e-participation, open data, transparency.



### ICT Enterprises Survey

- o Innovation & technology





# Multi-stakeholder engagement: National Commission for the Sustainable Development Goals

# COORDINATION AT THE LOCAL LEVEL IN BRAZIL

## National Commission for the Sustainable Development Goals

*Decree 8.892 27th. Oct 2016*



### POLICY PAPER

The importance of fostering the productive and inclusive use of ICTs for achieving the SDGs in Latin America:

**21st Century tools for transformation and sustainable development**

### CAPACITY BUILDING

MOOC on Measuring the SDGs

**Cetic.br / Unesco / SDG Academy**



Presidência da República  
Casa Civil  
Subchefia para Assuntos Jurídicos

DECRETO Nº 8.892, DE 27 DE OUTUBRO DE 2016

Cria a Comissão Nacional para os Objetivos de Desenvolvimento Sustentável

O PRESIDENTE DA REPÚBLICA, no uso da atribuição que lhe confere o art. 84, caput, inciso VI, alínea "a", da Constituição,

#### DECRETA:

Art. 1º Fica criada a Comissão Nacional para os Objetivos de Desenvolvimento Sustentável com a finalidade de internalizar, difundir e dar transparência ao processo de implementação dos Objetivos de Desenvolvimento Sustentável da Organização das Nações Unidas, inscrita pela República Federativa do Brasil.

Parágrafo único. A Comissão Nacional para os Objetivos de Desenvolvimento Sustentável é instância colegiada paritária, de natureza consultiva, integrada por representantes do Poder Executivo, do Poder Judiciário, do Poder Legislativo, da sociedade civil e da academia.

Art. 2º À Comissão Nacional para os Objetivos de Desenvolvimento Sustentável compete:

- I - elaborar plano de ação para implementação da Agenda 2030;
- II - propor estratégias, instrumentos, ações e programas para a implementação dos Objetivos de Desenvolvimento Sustentável - ODS;
- III - acompanhar e monitorar o desenvolvimento dos ODS e elaborar relatórios periódicos;
- IV - elaborar subsídios para discussões sobre o desenvolvimento sustentável em fóruns nacionais e internacionais;
- V - identificar, sistematizar e divulgar boas práticas e iniciativas que colaborem para o alcance dos ODS; e



THE UNITED NATIONS GLOBAL  
WORKING GROUP ON BIG DATA

**Thank you for your attention!**  
***Muchas gracias por su atención!***

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