



Global and Regional Experience on the Use of Technology in Censuses

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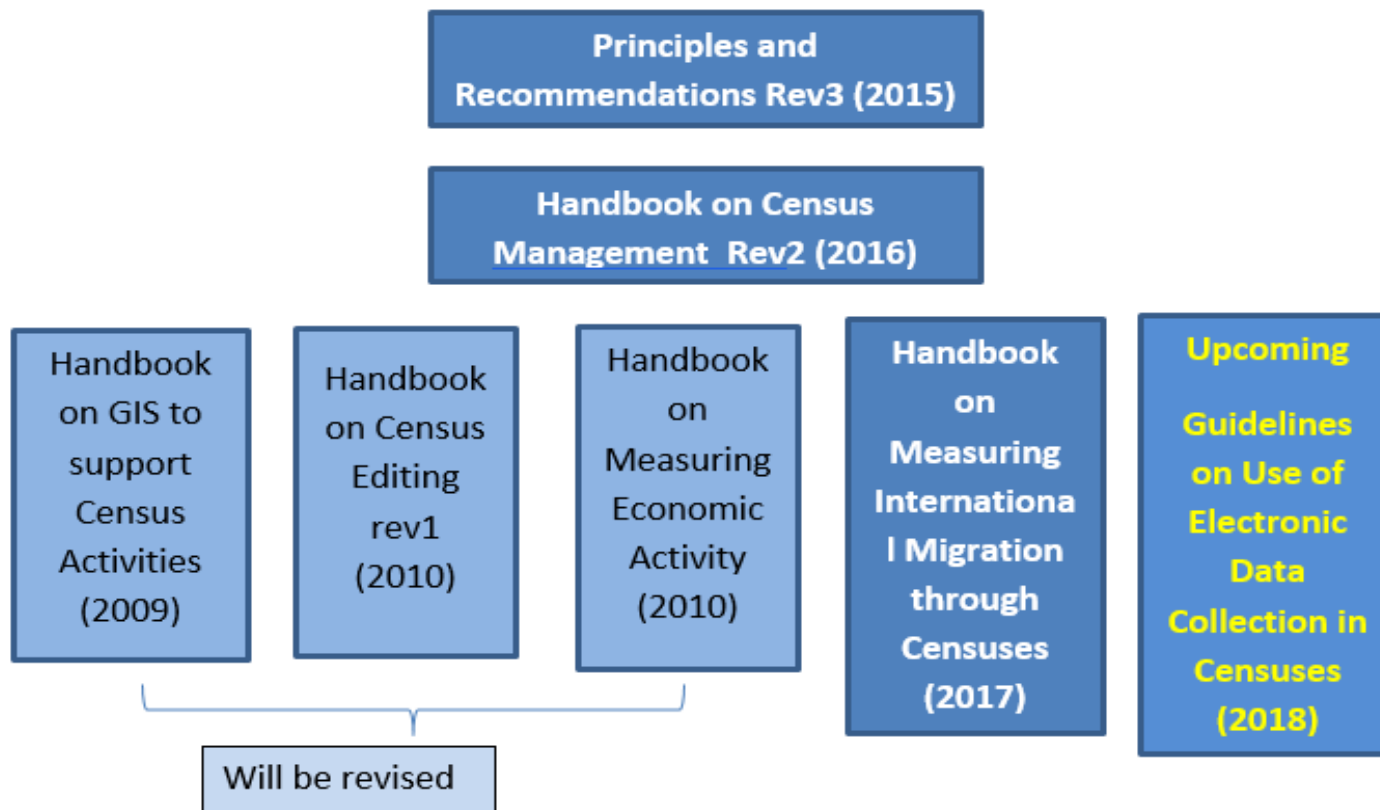
World Population and Housing Census Programme

Population Statistics Division

- ❑ World Population and Housing Census Programme over six decades
 - 2020 Census Programme, 2015-2024
 - ECOSOC approved the 2020 World Census Programme on 5 August 2015
 - Urges Member States to conduct at least one census during the round taking into account international and regional recommendations
 - Underscores need for setting quality standards for reliable and accurate results
 - Emphasizes the importance of the programme to SDG's
 - Requests UN to develop statistical standards, methods and guidelines and to monitor the implementation of the World Programme



UNSD Methodological framework





Trends in the use of technology

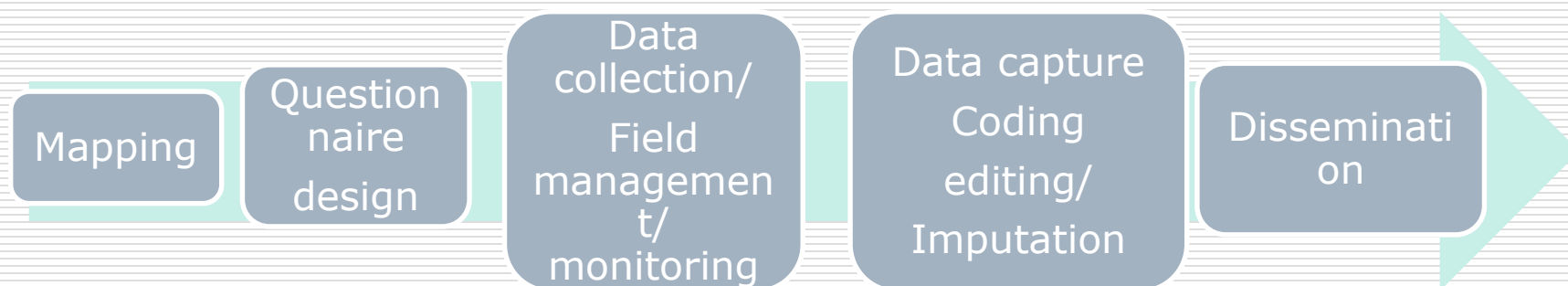
United Nations Statistics Division

Census Rounds					
	Before 1990	1990	2000	2010	2020
<i>Mapping</i>	Sketch	Digital Sketch	Digital Sketch	Digital Georeferenced data Sketch	
<i>Enumeration</i>	Paper questionnaire	Paper questionnaire	Electronic questionnaire – Internet Paper questionnaire	Electronic questionnaire – Internet, hand-held devices and telephone Real-time monitoring Paper questionnaire	
<i>Data Processing</i>	Manual data capture	Optical data capture Manual data capture	Optical data capture Manual data capture	Optical data capture Automatic data capture (Internet and hand-held devices) Web-based manual data capture Manual data capture	
<i>Dissemination</i>	Paper publication		Paper publications Online / digital publications	Online interactive databases Digital publications Paper publications	



Growing dependency on technology

Technology adoption throughout census operation



Coverage, Data quality, Timeliness, Accessibility

Calls for: Improving institutional capacity
Building IT infrastructure
Redesigning census procedures

Testing Testing Testing !!!



Evaluation of 2010 Census Round

- ❑ Censuses conducted from 2005-2014 – 93% of world population

Region	Countries/areas census conducted	Countries/areas census not conducted	Percent not conducted
Africa	49	9	18
America, North	36	2	5
America, South	14	-	-
Asia	41	8	19
Europe	49	2	4
Oceania	25	-	-
Total	214	21	10

Not conducted

Afghanistan
Lebanon
Uzbekistan
Pakistan
Iraq
Jordan
Syria
Yemen



Evaluation of 2010 Census Round

Main Census Methodology

Enumeration Methods	Totals		Full Field Enumeration		Administrative Registers	
	No.	%	No.	%	No.	%
Enumeration Method	No.	%	No.	%	No.	%
Total	123	-	105	-	12	-
Face-to-Face Interviewer, Paper Questionnaire	94	76.42%	90	85.71%	1	8.33%
Face-to-Face Interviewer, Electronic Questionnaire	14	11.38%	9	8.57%	3	25.00%
Telephone	14	11.38%	10	9.52%	2	16.67%
Self-Enumeration, Paper Questionnaire, Collected by Enumerators	30	24.39%	28	26.67%	0	0.00%
Self-Enumeration, Paper Questionnaire, Return by Mail	18	14.63%	13	12.38%	2	16.67%
Self-Enumeration, Internet	33	26.83%	26	24.76%	3	25.00%
Register-Based Enumeration	18	14.63%	5	4.76%	10	83.33%
Pre-existing Administrative Records	8	6.50%	4	3.81%	1	8.33%
Other	2	1.62%	2	1.90%	0	0.00%

Source:
UNSD survey
conducted in
2013



Evaluation of 2010 Census Round

Successes By Main Census Methodology

Census Successes	Full Field Enumeration		Administrative Registers	
	No.	%	No.	%
Total	105	-	12	-
Kept Within Budget	51	48.57%	4	33.33%
Met Deadlines	56	53.33%	3	25.00%
Improved Logistics and Coordination	54	51.43%	1	8.33%
Improved/Maintained Response/Participation Rates	43	40.95%	2	16.67%
Improved/Maintained Data Quality	52	49.52%	4	33.33%
Improved Data Dissemination	45	42.86%	3	25.00%
Implemented New Technologies	64	60.95%	3	25.00%
Implemented New Methodologies	39	37.14%	3	25.00%
Other	15	14.29%	4	33.33%

*Source:
UNSD survey
conducted in
2013*



Evaluation of 2010 Census Round

Challenges By Main Census Methodology

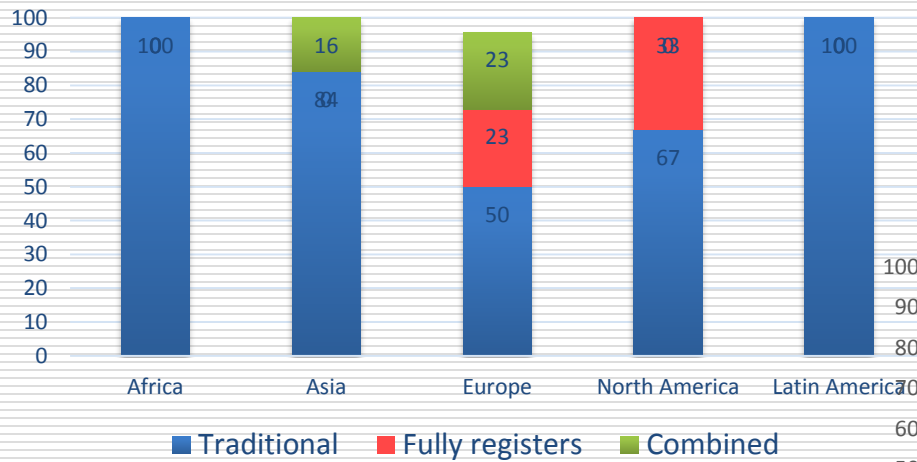
Census Challenges	Full Field Enumeration		Administrative Registers	
	No.	%	No.	%
Challenge	No.	%	No.	%
Total	105	-	12	-
Cost	78	74.29%	5	41.67%
Timeliness	47	44.76%	4	33.33%
Response Rates	38	36.19%	3	25.00%
Data Quality	39	37.14%	8	66.67%
Public Perception	40	38.10%	2	16.67%
Privacy Issues	27	25.71%	4	33.33%
Other	24	22.86%	3	25.00%

*Source:
UNSD survey
conducted in
2013*



Census Method

2010 Round, Percent



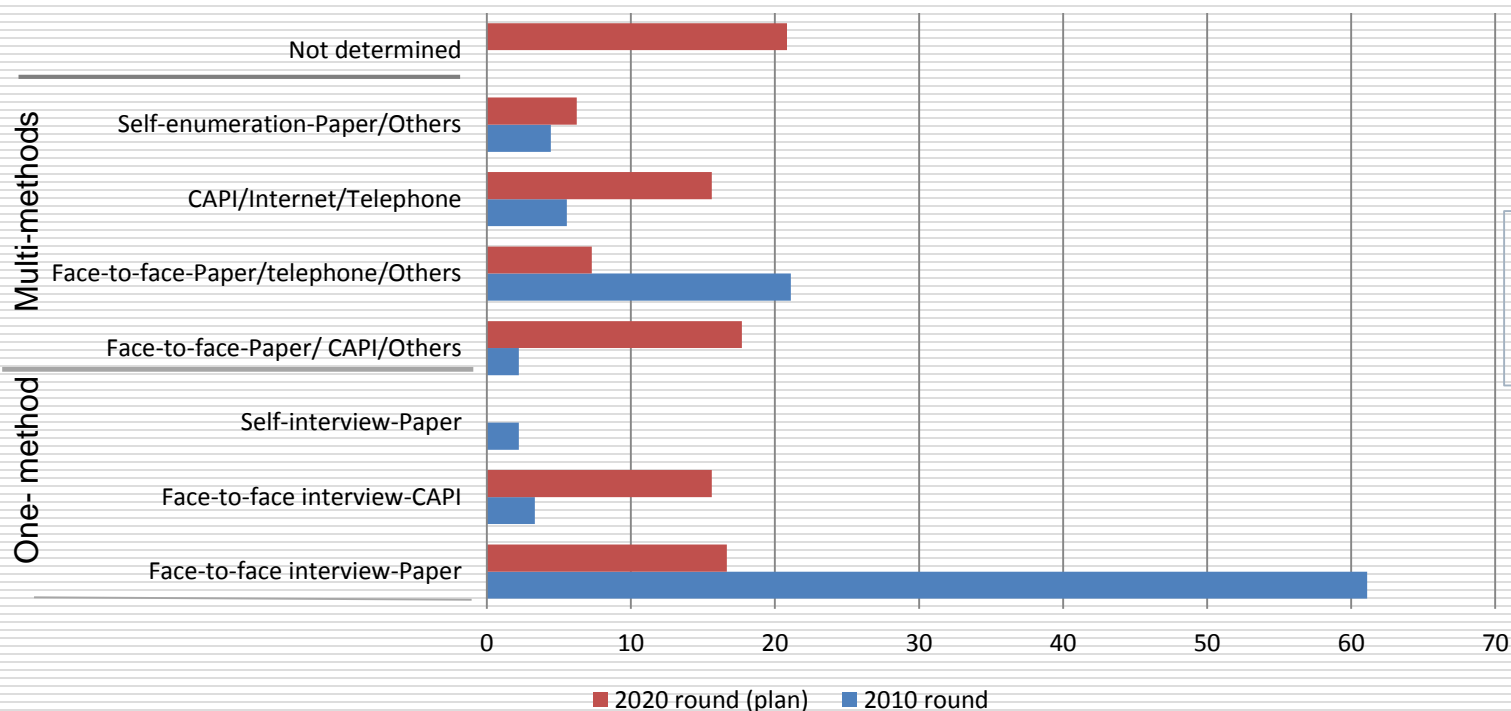
Plans for 2020 round, Percent





Practices in 2010 round and Plans for 2020 round

Percentage of countries by enumeration method



Source:
UNSD survey
conducted in
2016

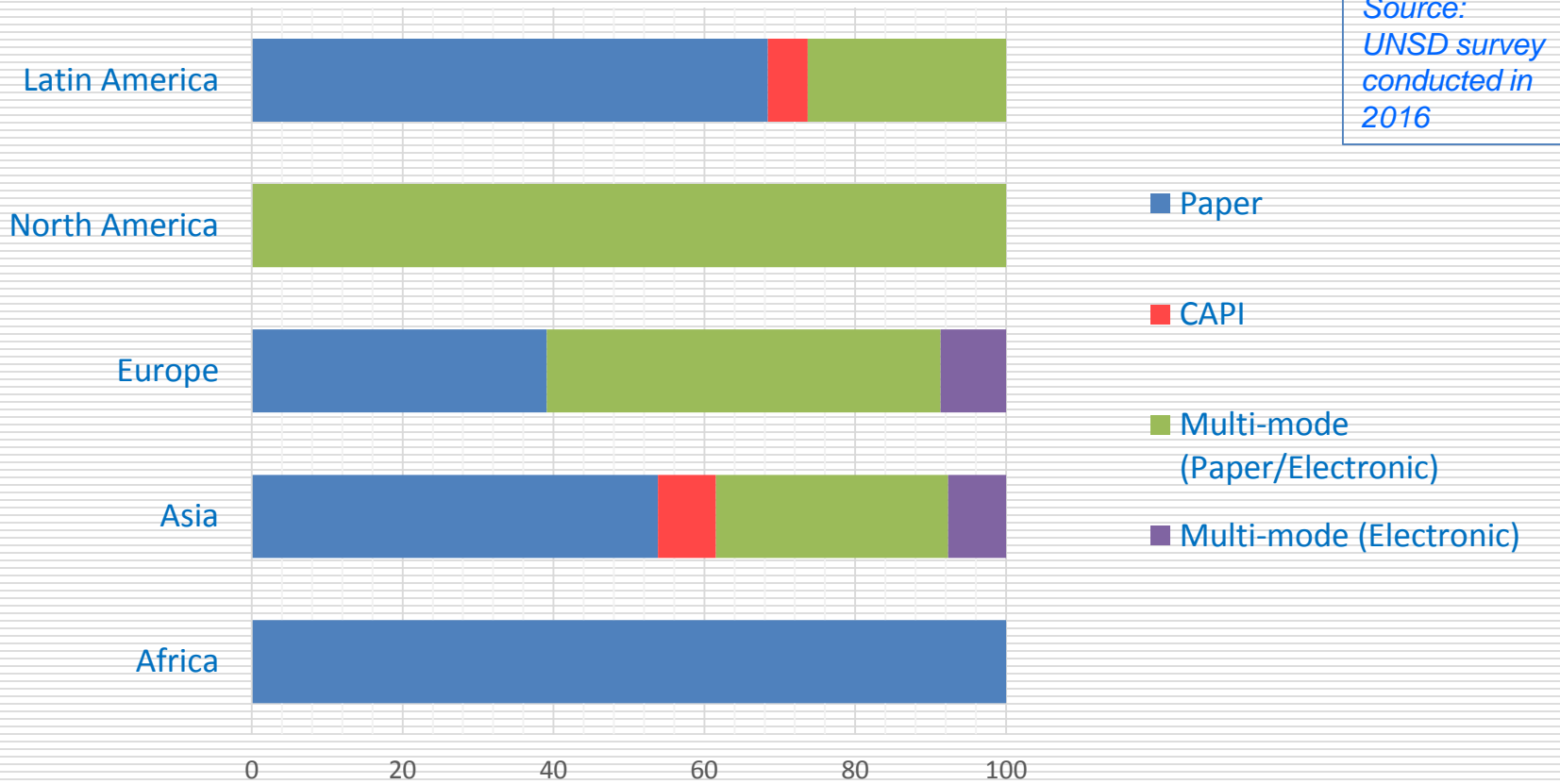


Use of technology for data collection-2010 round

Percent

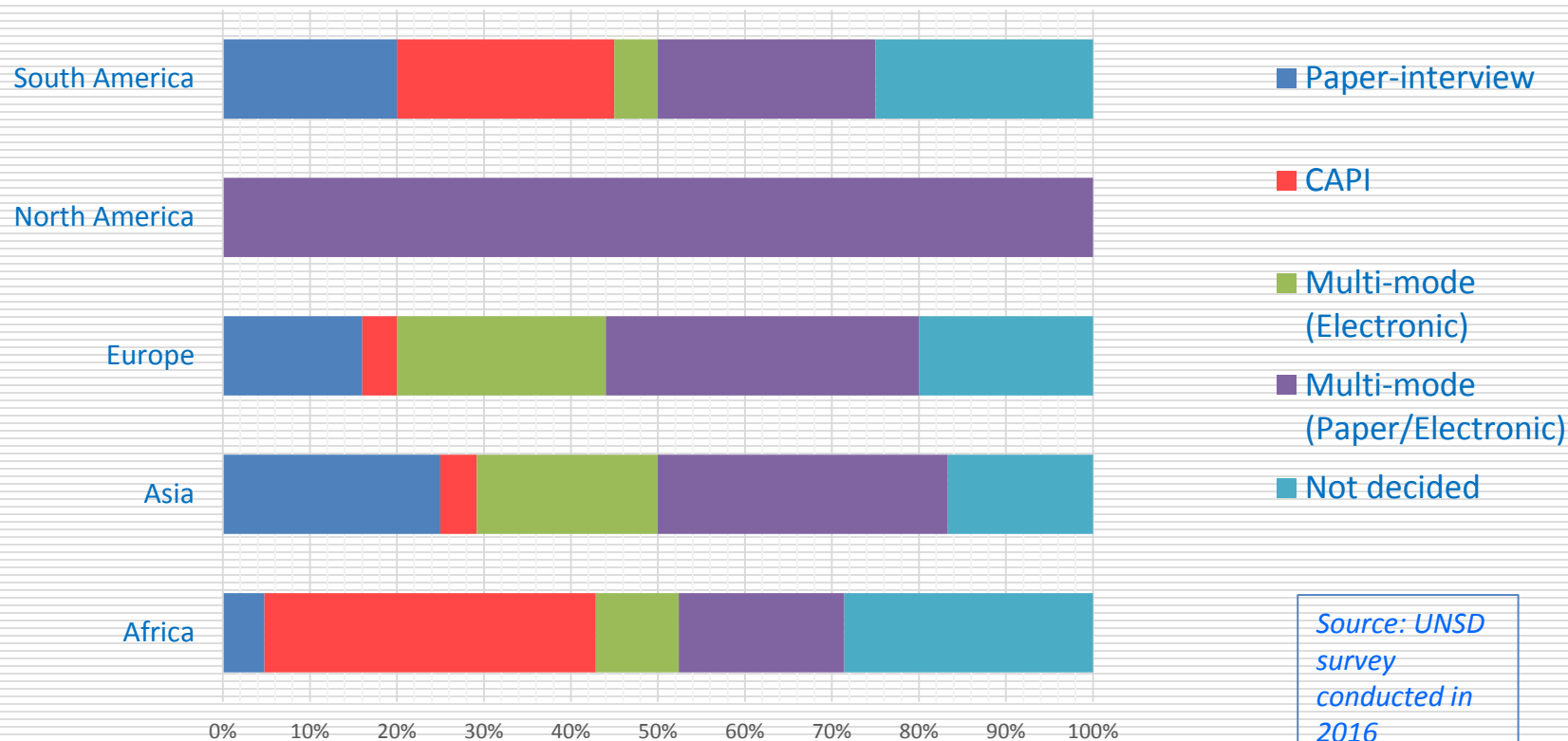


Source:
UNSD survey
conducted in
2016



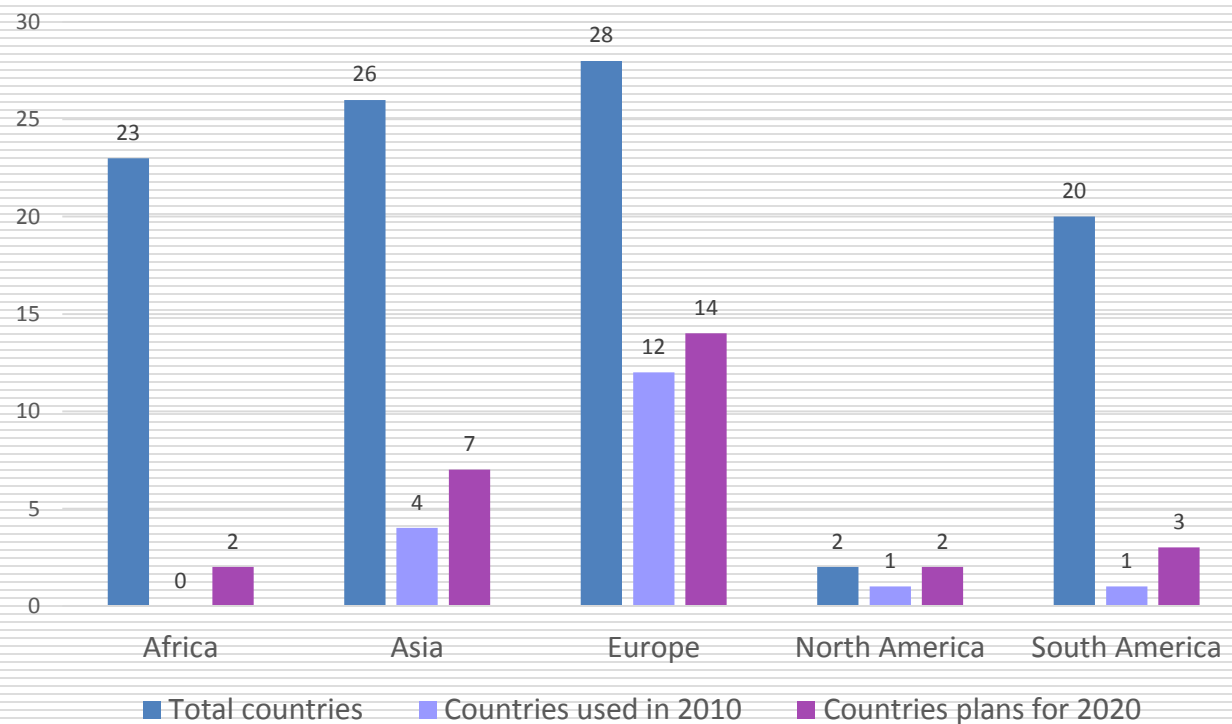


Method of data collection-Plans for 2020 round



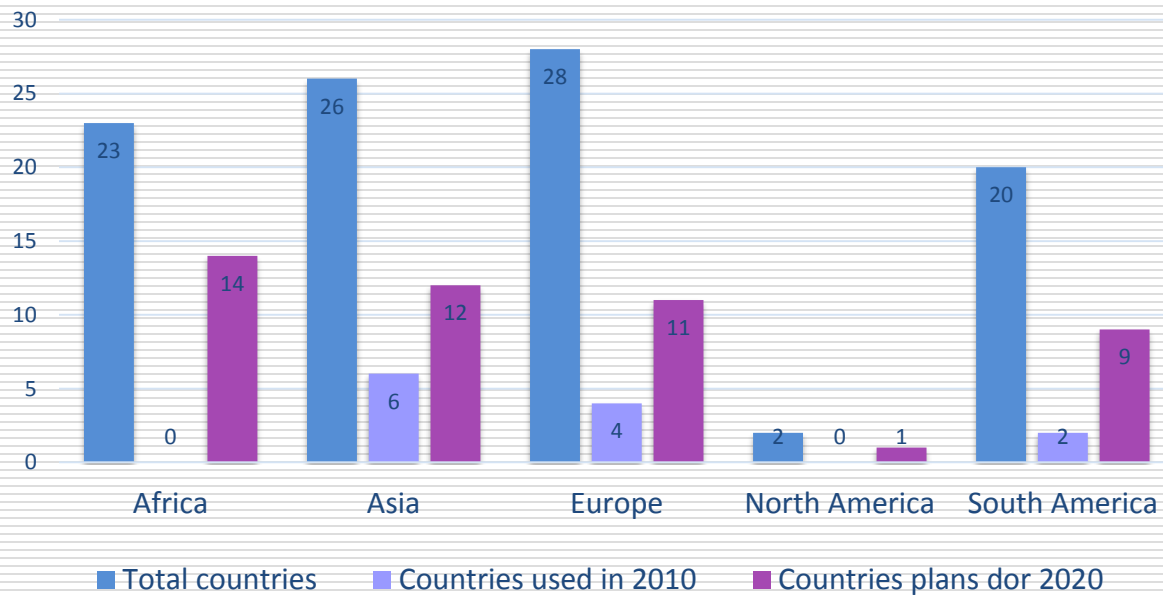


Use of Internet in 2010 and Plans for 2020





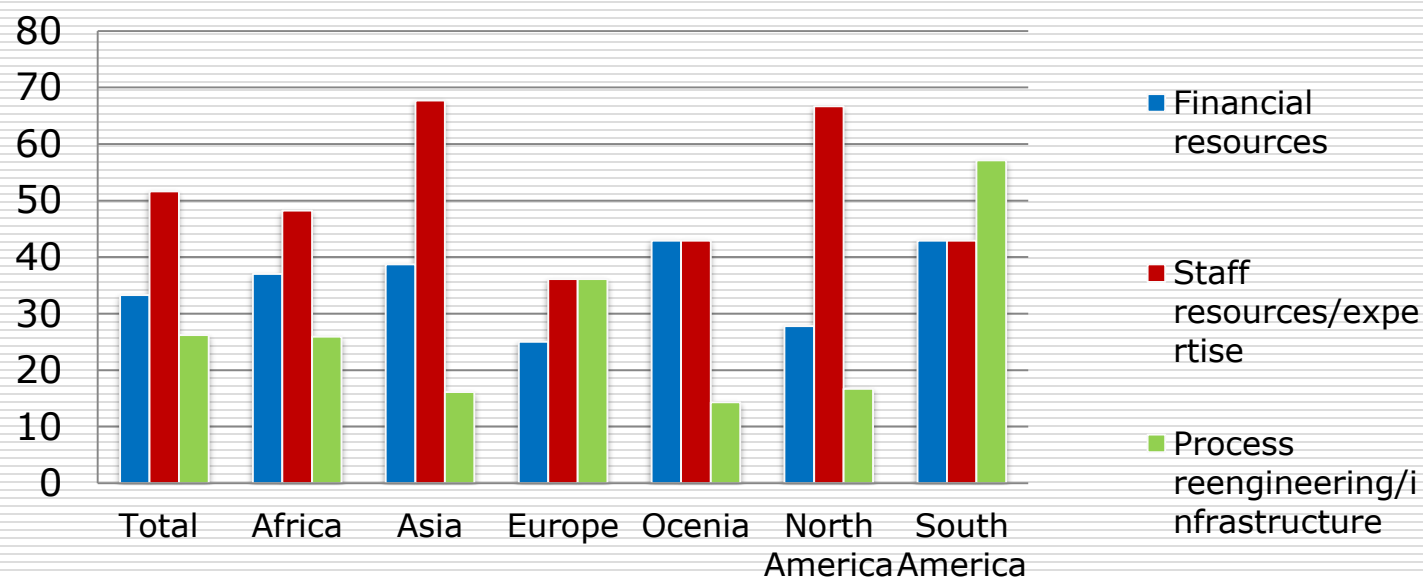
Use of CAPI in 2010 and Plans for 2020





Lessons learned from the 2010 round

Percentage of countries by obstacles faced in the use of new technologies during the 2010 census round (%)

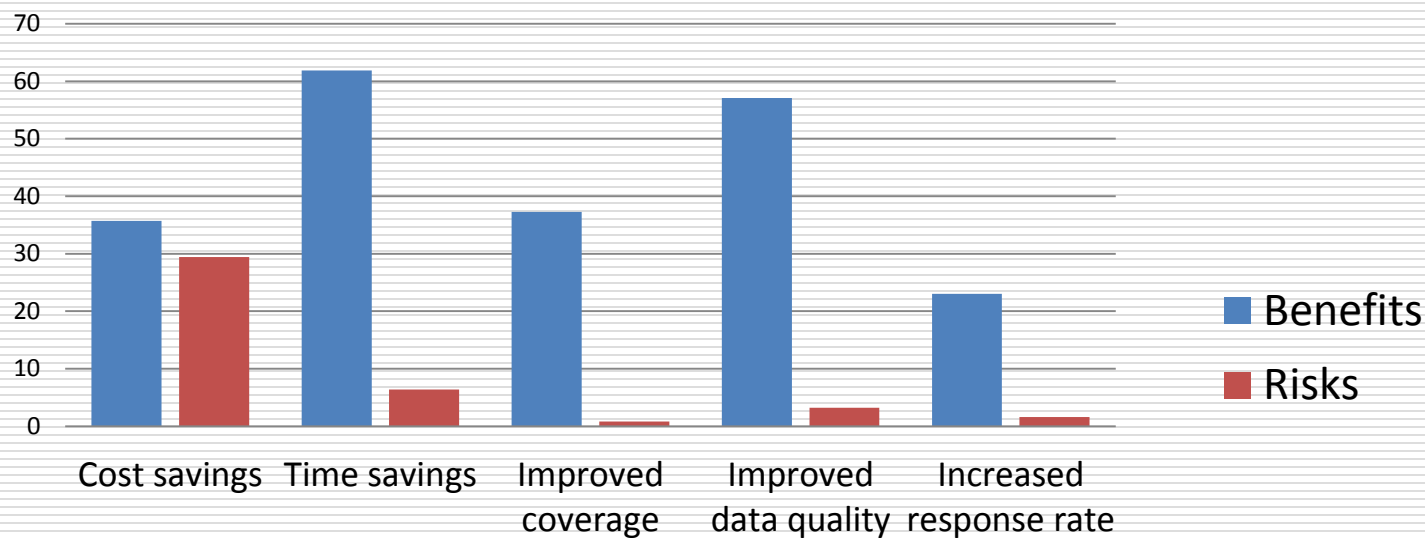


Source: UNSD survey conducted in 2012



Lessons learned from the 2010 round

Benefits and risks of using new technology in census operations (%)



Source: UNSD survey conducted in 2012

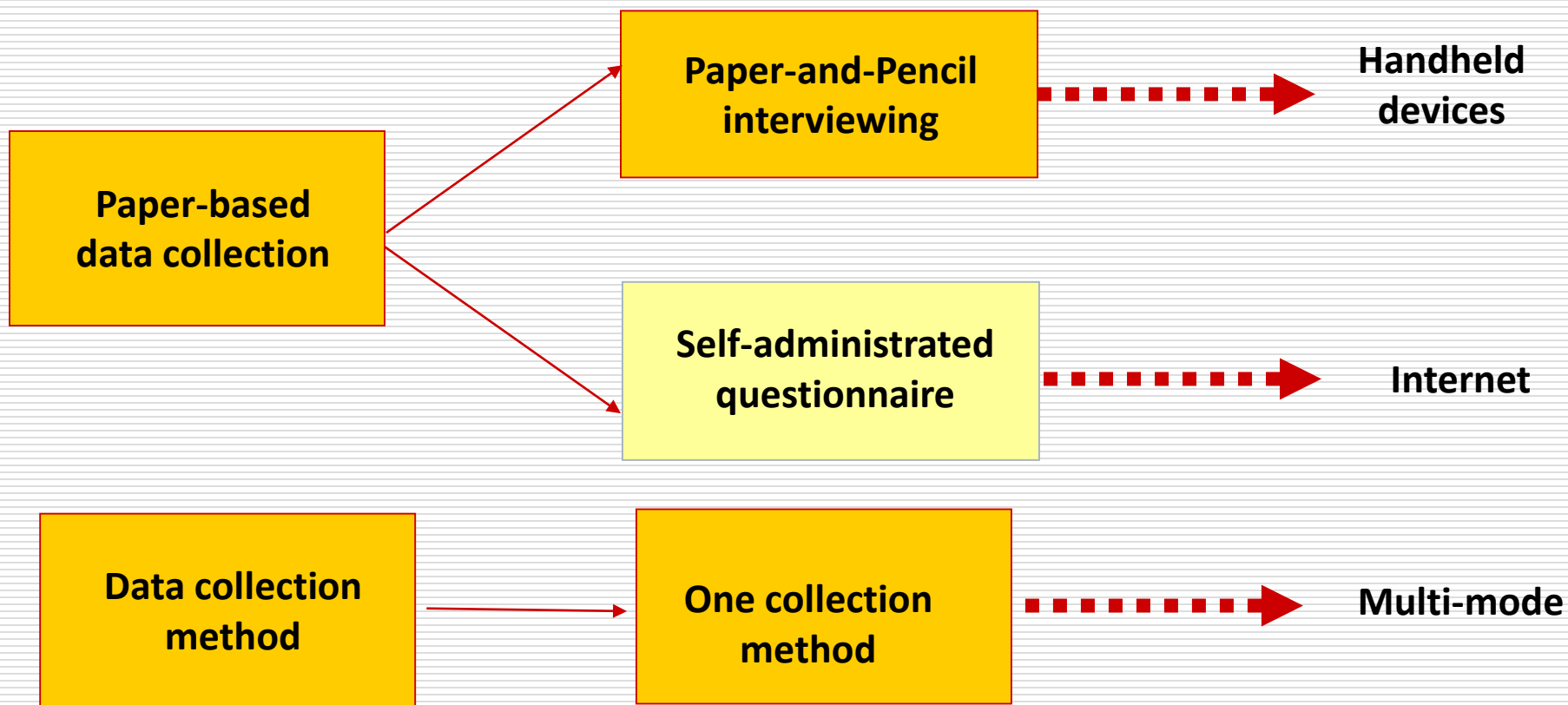


Guidelines on the Use of Electronic Data Collection

- DA10 project –UNSD and UN Regional Commissions (ECLAC, ECA, ECE, ESCAP, ESCWA)
 - Aims to strength a capacity of national statistical offices on:
 - Identifying key factors for making sound decision on the use of electronic data collection technologies
 - Designing census processes with the use of hand-held devices and/or Internet
 - Developing strategies for maximizing the benefits from this investment
 - ✓ Target audience: National Statistical Offices and Census Authorities
 - ✓ Task Force: Country Representatives, UNSD, UN Regional Commissions, UNFPA, WB
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Transitioning from paper to electronic data collection





Guidelines on the Use of Electronic Data Collection

- ❑ The guidelines discusses :
 - **Overview of drivers of technological innovation and data collection methods** including multi-mode data collection approaches
 - **Decision-making in adoption of electronic data collection technologies**
 - *Process of decision-making*
 - *Key determinants*: institutional, technological, operational, economic, social/cultural factors
 - *Information required for decision making* (cost estimates, benefits, risks, timetable, plans for reuse/disposition, success criteria, assumptions,
-



Guidelines on the use of electronic data collection technologies

- ❑ The guidelines discuss :
 - **Data collection with handheld devices**
 - Important features of handheld devices
 - Data transmission and security
 - Use of geospatial technology during enumeration
 - Testing data collection systems
 - Field operation, management and monitoring
 - Reuse/disposition of devices
-



Guidelines on the use of electronic data collection technologies

- ❑ The guidelines will discuss :
 - **Data collection with Internet**
 - Requirements for adoption – high literacy, internet access, public trust, quality of address frame
 - Data collection portal
 - Contact and communication strategies
 - Identification of respondents (unique access code)
 - Management and monitoring
 - Security
 - Support for respondents
-



Guidelines on the use of electronic data collection technologies

- ❑ The guidelines discuss :
 - **Management and Planning considerations**
 - Institutional capacity development
 - IT acquisition management
 - IT systems development
 - Use of geospatial technology for census preparation
 - Supportive systems- Call center, MIS,..
 - Testing IT systems and processes
 - Information and system security
-



Guidelines on the use of electronic data collection technologies

- ❑ Collaborative approach for drafting the guidelines with the participation of countries and international organizations
 - First draft by Dec-2017
 - Final draft by March 2018 based on regional consultations

 - ❑ Live document be updated for:
 - significant changes in adoption of the technology
 - technological changes
 - good country practices
-



THANK YOU..
