

# Data Innovations for Decision-making



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**SUBREGIONAL CAPACITY BUILDING WORKSHOP ON THE  
ANTIGUA AND BARBUDA AGENDA FOR SMALL ISLAND  
DEVELOPING STATES (ABAS) AND ITS MONITORING AND  
EVALUATION (M&E) FRAMEWORK**



# Why innovative approaches?



Allows integration of non-traditional and traditional data from various entities

Utilizes existing sources of data to produce and disseminate better, more timely and disaggregated data

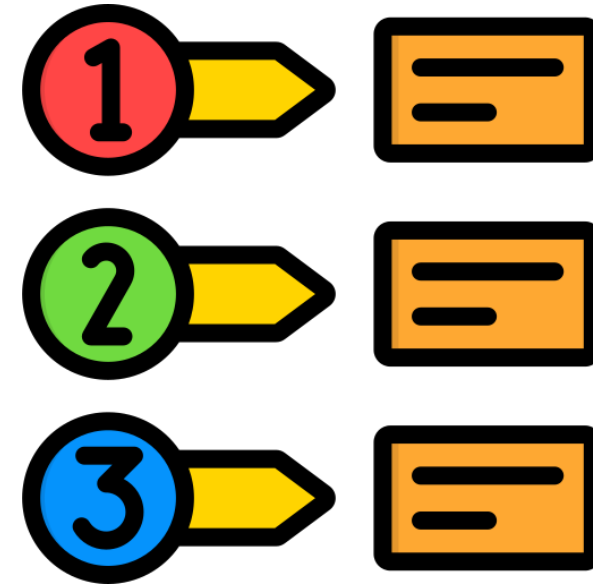
Unlock new data opportunities, uncovering new insights and perspectives

Capitalizes on resources from various entities and new partnerships



# Innovation to address policy priorities

- More granular data to plan targeted programs and policies
- Enables measurement of hard-to-count populations (such as those missed out in traditional data collection methods)
- Provides data with less time lag for timely decision-making (it may be costly to conduct more frequent traditional surveys)





# Do innovative approaches replace traditional approaches?

- Innovative approaches **don't replace** traditional approaches, but support and **complement** official statistics
- They add value by filling gaps, improving coverage, timeliness, availability and disaggregation
- Traditional approaches provide a **good source** for validating and cross-checking data





# Innovative Approaches

## Partnerships

- CSOs
- Academia
- Development partners
- Private sector...

## Data Sources

- Social media data
- Geospatial data
- Mobile phone data
- Citizen generated data
- Admin data...

## Methods

- Probabilistic Record Linkage
- Small Area Estimation
- De-Identification, Privacy Enhancing Technologies/Privacy preserving techniques
- Machine Learning/ Natural Language Processing

## Tools

- Data Integration: ETL, R, Python, Batch/Stream Processing...
- Preparation: Data warehouse, data-lake, ETL, Apache Parquet, R, Python...
- Analysis: Google Earth, QGIS, ArcGIS, R & Python libraries (NumPy, Pandas, BeautifulSoup...)...
- Presentation: Dashboards, DataMarts, DataAPI, ...
- Dataflow Automation....



# Use cases of innovative approaches

**State of Palestine, Jordan, Kyrgyzstan:** Estimations of land consumption and open public spaces using geospatial information (SDG 11)

**Viet Nam:** Estimation of child poverty and food insecurity using small area estimation methods (SDG 1)

**Kyrgyzstan:** Use of citizen data for Voluntary National Review (VNR) reporting

**Tunisia, Maldives:** Insights into internal migration using mobile network data (SDG 8)

Tunisia: Analysis of CPI using web scraping techniques and scanner data

**Tunisia, Philippines:** Estimation of environment indicators using geospatial information (SDG 13, 14, 15)

**Jamaica:** Use of administrative to measure international migration

**Sierra Leone, Ghana:** Marine litter data using citizen science (SDG 14)

**Fiji:** Crime statistics (SDG 16) using administrative data





## Ensuring Data Quality, Privacy, Ethical Use and Other Considerations

### Challenges:

- Validating accuracy and reliability of non-traditional data sources.
- Ensuring data privacy and adhering to ethical standards.
- Addressing biases that may exist in some non-traditional data sources.

### Other Considerations:

Technical capacity, Data governance, resource requirements and coordination complexities

## Collaborations for Effective Data Integration

### Key Partnerships:

International organizations, private sector, academic institutions, and civil society.

### Examples:

- Collaborations with space agencies for satellite data.
- Public-private partnerships with tech companies for mobile and social media data.
- Joint initiatives with universities for data innovation and methodological development.
- Collaborate with civil society organizations for citizen-generated data



# Tourism planning in Indonesia

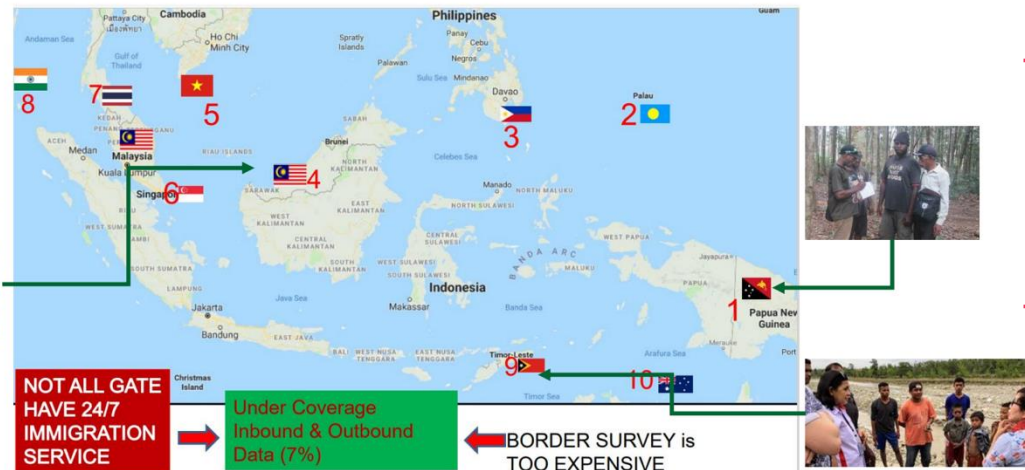
- **The data need:**

- Increase timeliness and coverage of tourism data to monitor cross-border movements and support national policy decisions for sustainable tourism



- **The response:**

- Since 2016, Statistics Indonesia (BPS) has used mobile phone data from the largest mobile network operator to estimate cross-border international visitor arrivals (foreign sim cards owners)
- Since 2018, the use of MPD has been expanded to measuring domestic tourism and people's mobility in metropolitan areas
- BPS followed a collaborative approach, working with MNO, private companies and key ministries to access and analyze large-scale MPD and institutionalizing agreements

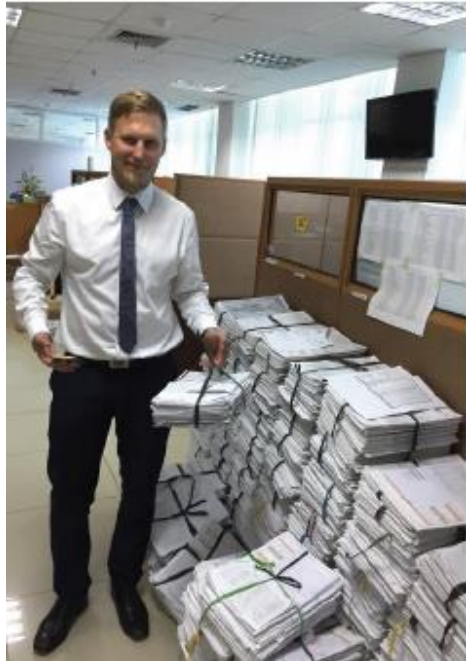




# Tourism planning in Indonesia

- **The outcome:**

- MPD enabled more accurate, timely, and granular measurement of tourism
- Before MPD, tourism data covered 34 provinces using surveys of 50,000 households and 8,000 enumerators; with MPD, data now covers 514 regencies and cities using 140 million subscribers' records processed by just 8 data scientists.
- Successful integration with other data sources such as immigration data and digital surveys to obtain additional information such as purpose of the travel, expenditure etc.
- The initiative highlighted the urgency of Big Data Governance to ensure legal compliance, data security, and long-term sustainability





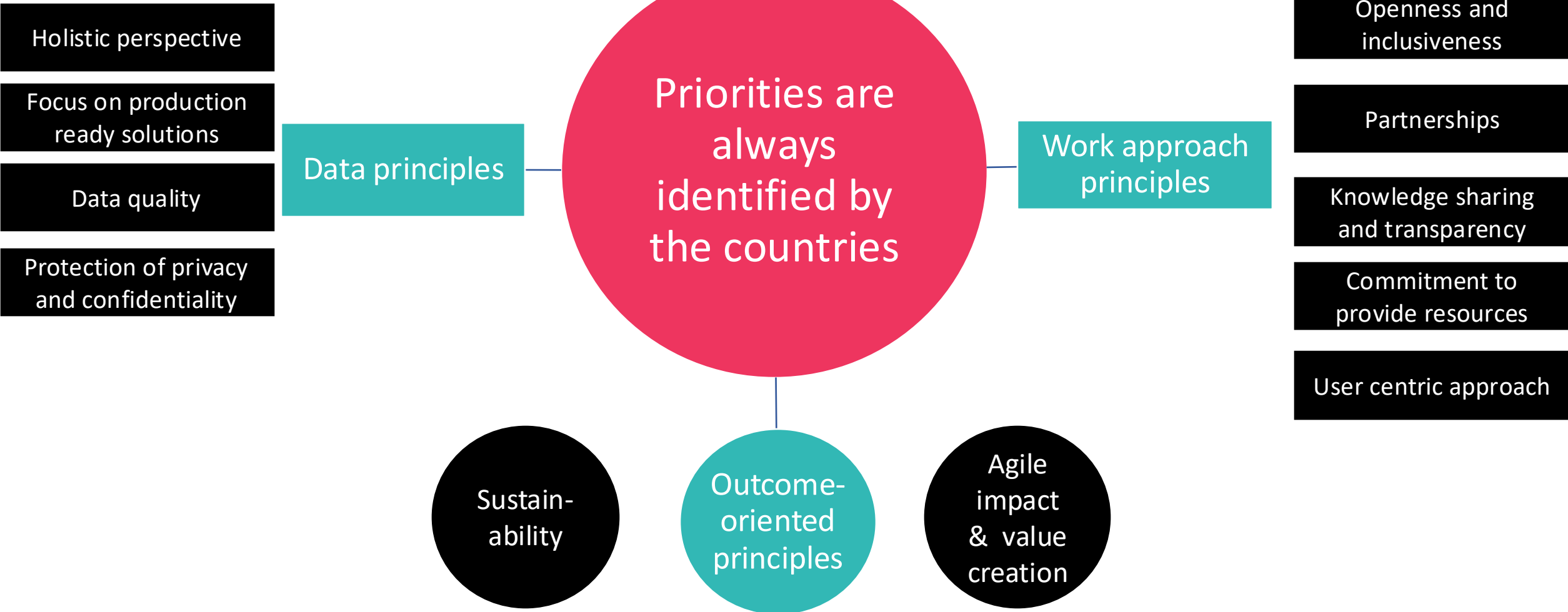
# Capacity development support to countries by DESA's Statistics Division



# The Data for Now initiative

- Launched by UN Deputy-Secretary General Amina Mohammed on the sidelines of the UN General Assembly, in September 2019
- Supports countries in the **use of innovative sources, technologies and methods for the streamlined production and dissemination of better, more timely and disaggregated data** for sustainable development
- Develops countries' capacities to **deliver the information needed by local and national policy and decision makers** to design effective development strategies and policy programmes
- Is co-led by the United Nations Statistics Division (UNSD), United Nations Development Program (UNDP), the World Bank, the Global Partnership for Sustainable Development Data (GPSDD), and the Sustainable Development Solutions Network (SDSN)

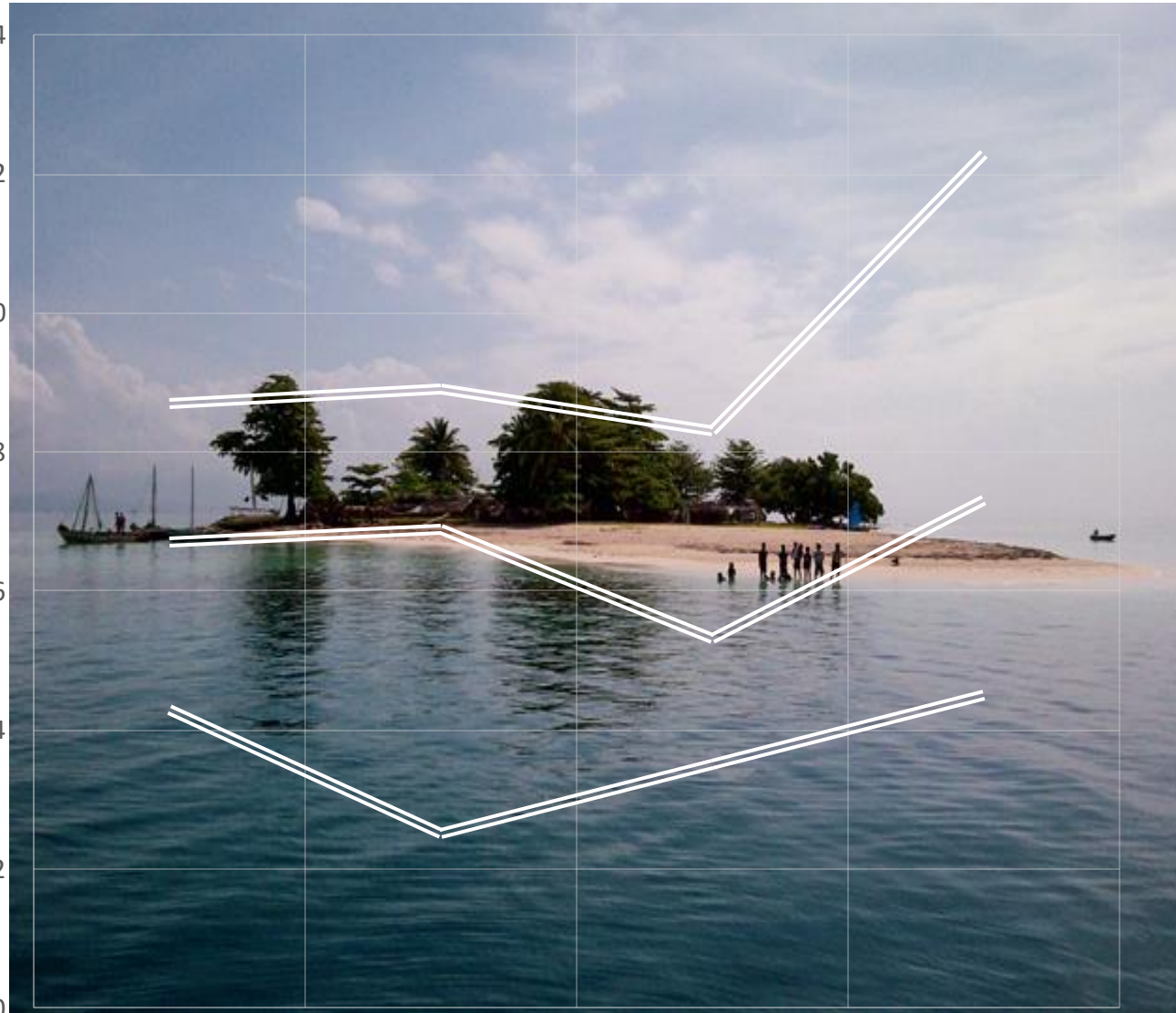
# Guiding principles



# DATA for SIDS - DATAS -

SUPPORTING SIDS NATIONAL STATISTICAL SYSTEMS' CAPACITIES AND ENHANCING INFORMED-DECISION MAKING, SDGs IMPLEMENTATION AND MONITORING THROUGH:

- DATA GOVERNANCE,
- DATA PRODUCTION,
- DATA DISSEMINATION
- SIDS-SIDS COLLABORATION



# Other DESA/Statistics Division initiatives

- Collaborative of Administrative Data
- Collaborative of Citizen Data
- Global Network of Institutions for Statistical Training
- Inter-Secretariat Working Group on Household Surveys

# Other DESA initiatives

- Integration of **statistical and geospatial information**
- Modernization of **IT architecture/infrastructure** to effectively manage and analyze a diverse range of data types, encompassing both traditional and unconventional sources
- Strengthen capacity of national staff for improved and institutionalized **engagement with users**
- Development of the **conceptual framework for citizen data** and the roadmap for its implementation
- Use of **administrative data**
- Operationalize the **UNODC statistical framework to measure corruption,**
- Improving the **development on metadata**
- Guidance to **make surveys more accessible**
- Development of a road map for **NSO-academia collaboration**
- Strengthening capacity of countries to **make data openly available and accessible** and on **data visualization and communication**

# Countries supported (not exhaustive)



**Colombia**



**Morocco**



**Ethiopia**



**State of Palestine**



**Senegal**



**Sierra Leone**



**Jordan**



**Tunisia**



**Jamaica (DATAS)**



**Viet Nam**



**Fiji (DATAS)**



**Comoros (DATAS)**



# Countries supported (not exhaustive)



**Bangladesh**



**Kyrgyzstan**



**Chile**



**Namibia**



**India**



**Seychelles**



**Indonesia**



**Maldives**




**Kenya**



**Dominican Republic**



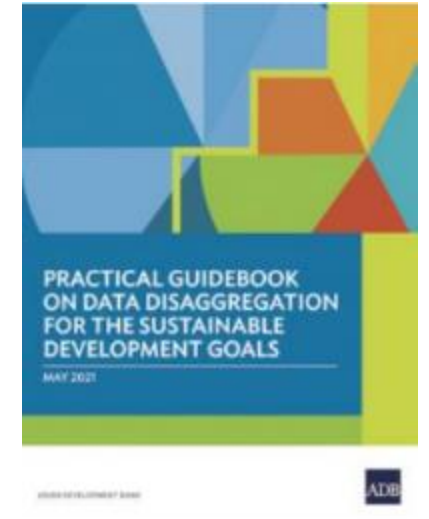
# Support on cross-cutting themes

- Integration of **statistical and geospatial information**
  - Modernization of **IT architecture/infrastructure** to effectively manage and analyze a diverse range of data types, encompassing both traditional and unconventional sources
  - Strengthen capacity of national staff for improved and institutionalized **engagement with users**
  - Development of the **conceptual framework for citizen data** and the roadmap for its implementation
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# Useful resources

1. Wiki Site on Good Practices and Resources on Sustainable Development Goals Monitoring (<https://unstats.un.org/wiki/display/sdgGoodPractices>)
2. Data Disaggregation for the SDG Indicators (<https://unstats.un.org/sdgs/iaeg-sdgs/disaggregation/>)
3. United Nations National Quality Assurance Frameworks Manual for Official Statistics (<https://unstats.un.org/UNSDWebsite/data-quality/user-manual>)
4. Data for Now Initiative (<https://unstats.un.org/capacity-development/data-for-now>)
5. Collaborative on Administrative Data (<https://unstats.un.org/UNSDWebsite/capacity-development/admin-data/>)
6. Collaborative on Citizen Data (<https://unstats.un.org/UNSDWebsite/citizen-data/>)
7. Small Area Estimation for SDGs Toolkit (<https://unstats.un.org/wiki/display/SAE4SDG/>)



Collaborative  
on Citizen Data

# THANK YOU!

For resources, visit:

<https://unstats.un.org/UNSDWebsite/capacity-development/data-for-now/>

Contact:

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**Unlocking Access to Mobile Network Data for Public Good – Lessons Learned**

26 November 2024 - Tunisia



**Scan me!**



**Enhancing Quality of Life in Cities: Palestine's Data-Driven Approach**

17 October 2024 - Palestine



**Addressing Homicide: How Cameroon is Closing the Data Gap**

3 September 2024 - Cameroon



**Moving beyond traditional censuses: Chile's collaborative approach to administrative data**

21 January 2025 - Chile



**Modernizing Sierra Leone's IT Infrastructure for Data-Driven SDG Progress**

3 September 2024 - Sierra Leone



**Official statistics benefit from partnerships between national statistical offices and academia**

3 September 2024 - Colombia Norway  
Brazil Ghana



**Bridging Data Gaps: Enhancing Geo-Statistical Capacity for Sustainable Development**

27 August 2024 - Thailand

Read our stories to learn more about how countries are leveraging innovative methods, tools, and approaches through support from the Data For Now initiative

<https://unstats.un.org/UNSDWebsite/capacity-development/data-for-now/stories>