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BigData
UN Global Working Group

Using **Big Data** for the **S**ustainable **D**evelopment **G**oals

Presented by: Amparo Ballivian

Objective:

To provide concrete examples of the use of Big Data for monitoring the indicators associated with the Sustainable Development Goals.

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Task Team Members

- **Chaired by The World Bank and INEGI**
- 7 international agencies and companies
  - WEF, Orange, ODI, Data-Pop Alliance, NASA, Paris 21, Positium
- 6 United Nations agencies
  - UNSD, UNECE, UNESCAP, ITU, Global Pulse, UN Department of Economic and Social Affairs
- 3 universities
  - University of Pennsylvania, MIT, Harvard
- Colombia's National Administrative Department of Statistics

WORLD ECONOMIC FORUM
orange
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ITU
HARVARD UNIVERSITY
Penn University of Pennsylvania
INEGI INSTITUTO NACIONAL DE ESTADÍSTICA Y GEOGRAFÍA
DATA POP ALLIANCE
MIT
United Nations Statistics Division
PARIS21
ODI Climate Change
DANE
UNITED NATIONS ESCAP Economic and Social Commission for Asia and the Pacific
UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE
NASA Jet Propulsion Laboratory California Institute of Technology
United Nations Department of Economic and Social Affairs
GLOBAL PULSE
positium

Plan of Actions:

1. Survey to identify which of the 169 SDG targets could use Big Data, as well as proposals of Big Data-specific indicators related to the SDG targets (which may be different to the current set of indicators based on traditional sources of data)
2. Make an inventory of past and ongoing research work on Big Data and identify those that could be used to calculate one or more SDG targets
3. Pilot research in 1-2 countries on calculating 2-3 SDG indicators using Big Data
4. Presentation at the Big Data Conference of UAE
5. Write report of the Working Group

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Summary status:

1. Research survey of Big Data Initiatives for Sustainable Development Goals (SDGs) conducted and results analysed
2. Consolidated inventory of Big Data projects has been created; linking each project to an SDG target is ongoing
3. Pilot projects: no financing for new projects, selection of projects for task team report ongoing
4. Presentation at Abu Dhabi conference: done
5. Report of the Task Team: Due in December 2015

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1. Survey of SDG-related Big Data projects

Purposes of the survey

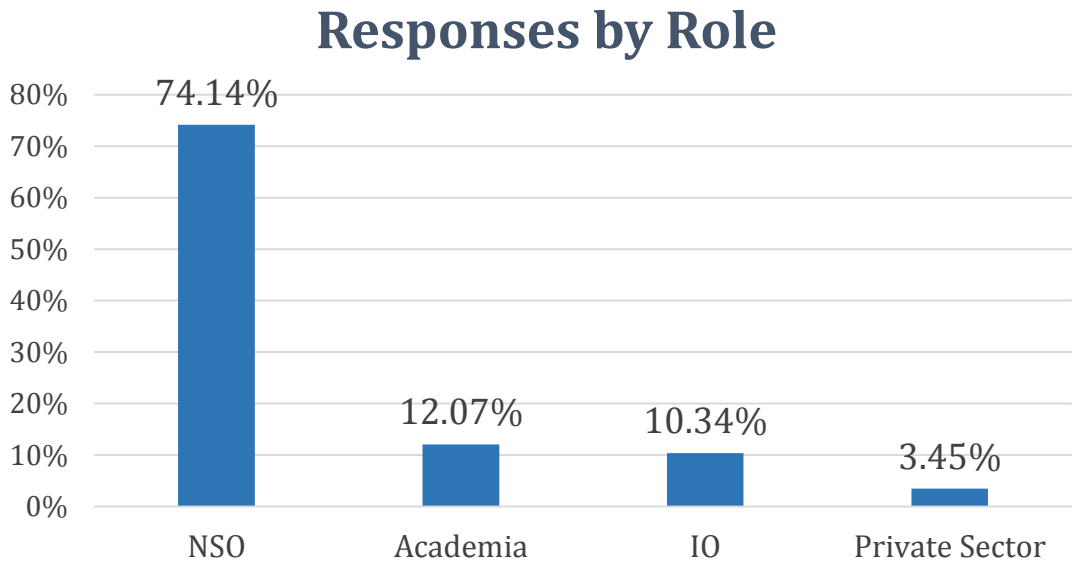
- Identify characteristics of Big Data projects that can be used to monitor and achieve the SDGs
- Learn about SDG areas, data sources, partners and objectives of the Big Data projects
- Understand scope for project replication elsewhere
- Assess the feasibility of proposed projects

1. Survey of SDG-related Big Data projects

Sample and representativeness of responses

Survey population:

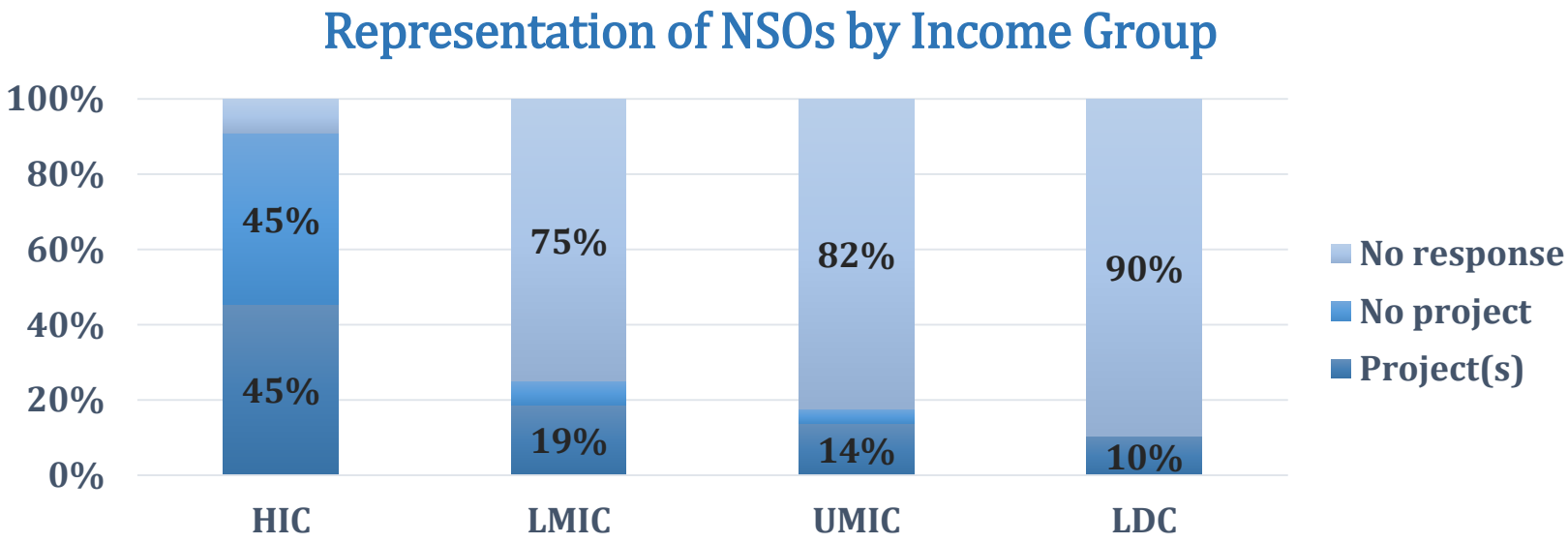
- World Bank (47)
- UNECE Big Data Project (52)
- Heads of Statistical Departments of IOs (46)
- Heads of International Relations Departments (74)
- DGs of NSOs (141)



58 Responses out of **360** Surveyed

1. Survey of SDG-related Big Data projects

Sample Representativeness



- 90% of High Income Countries replied, from which 50% had at least one big data for SDG project and the rest did not.
- Response rate of other countries is lower but HIC is where innovation is to happen anyway.

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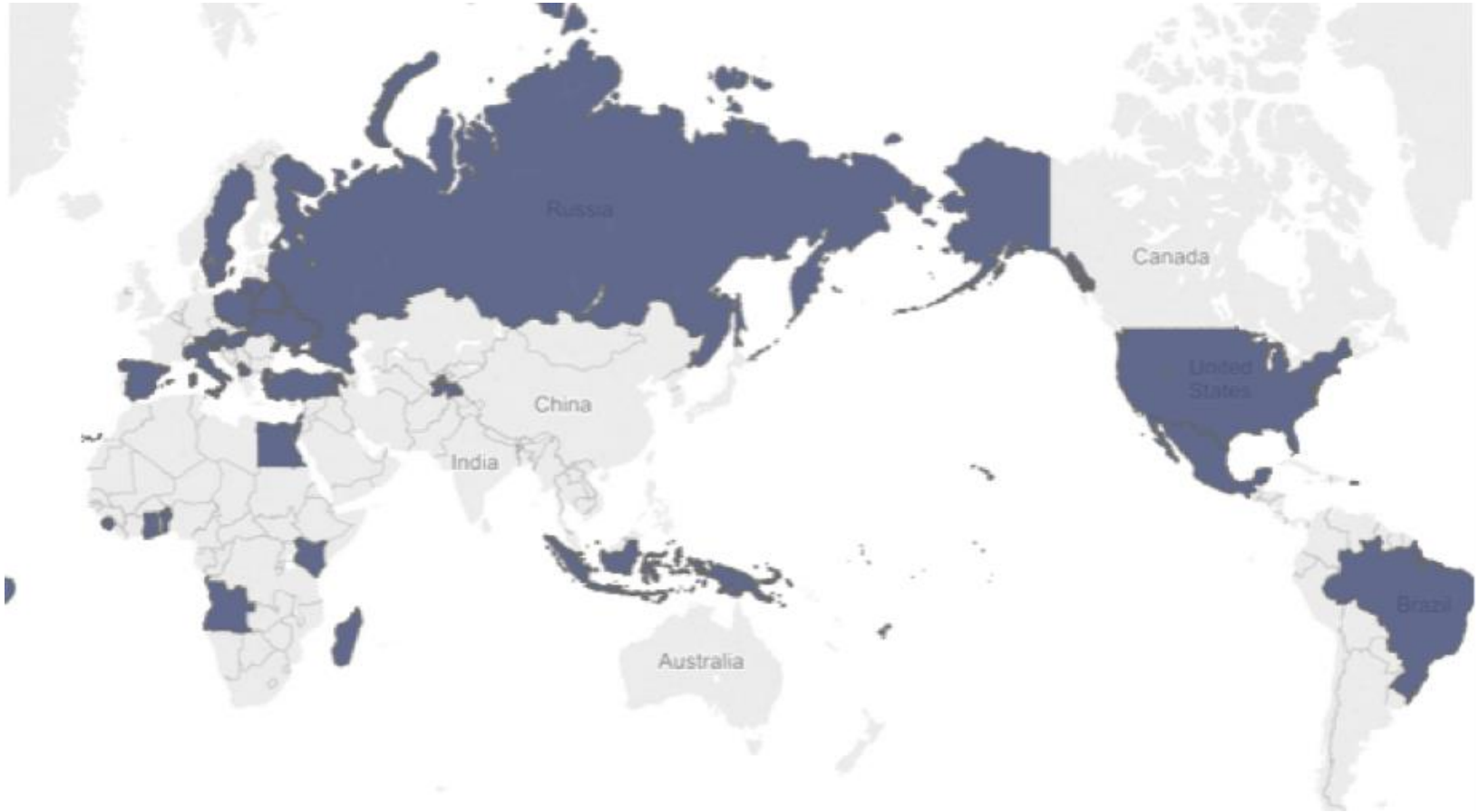
1. Survey of SDG-related Big Data projects

World map of countries with reported projects



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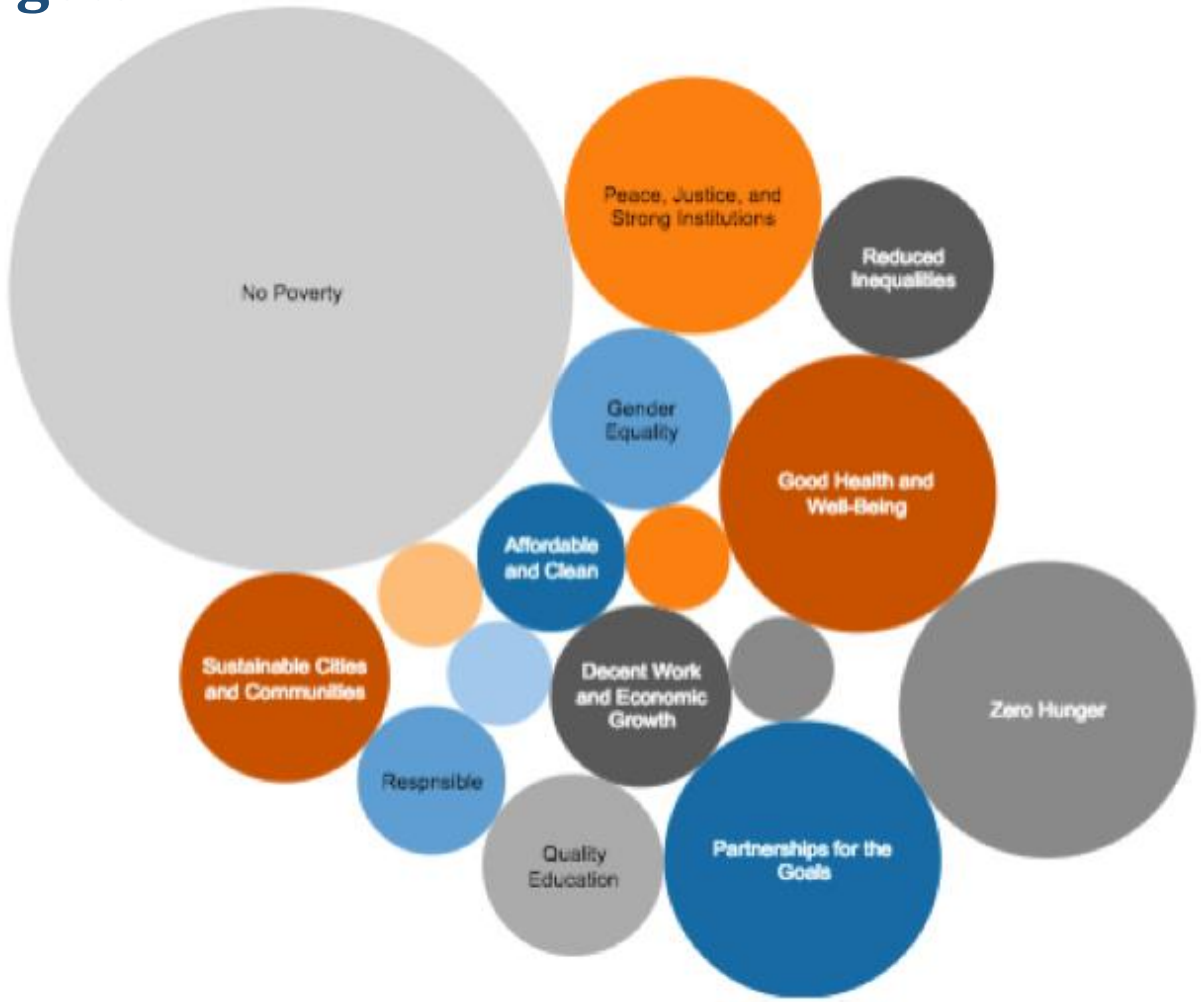
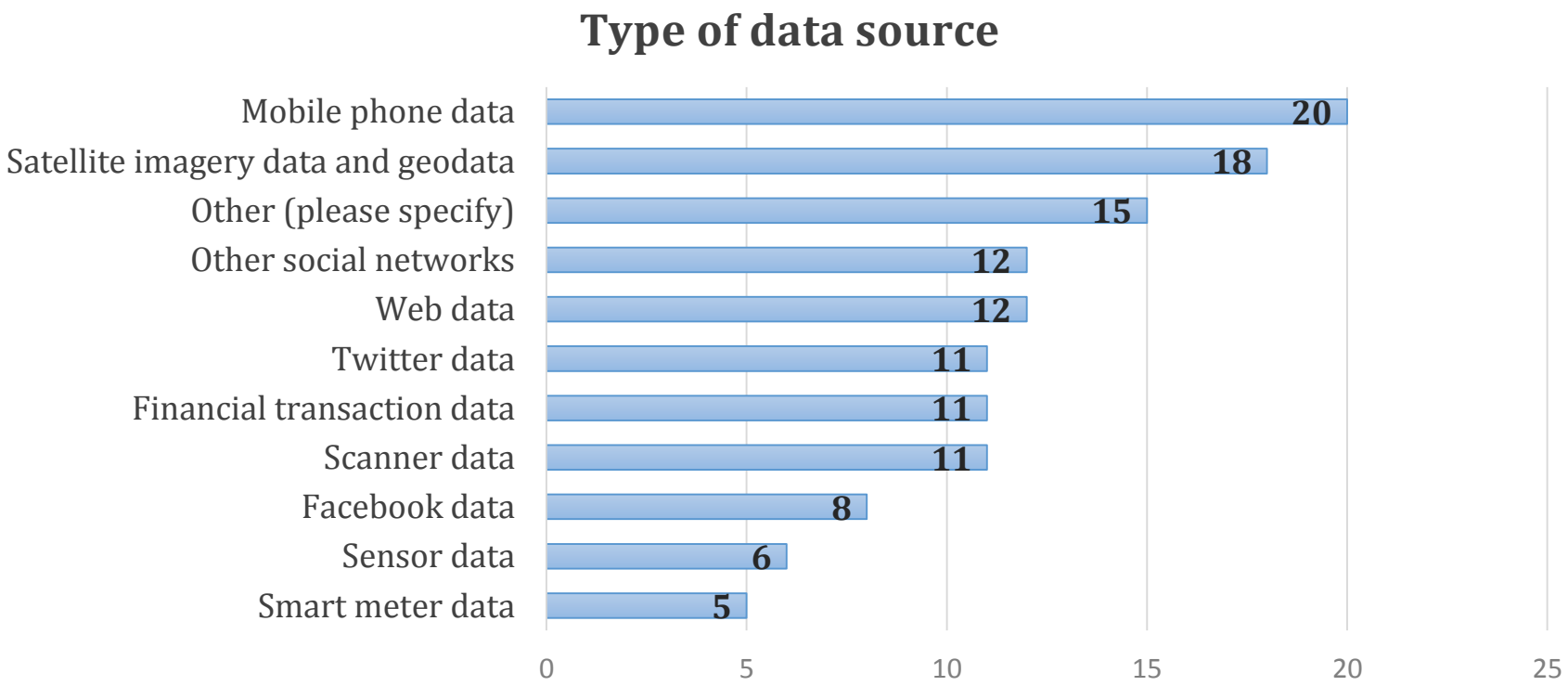
1. Survey of SDG-related Big Data projects

Descriptives: Frequency of SDG targets

- Affordable and Clean Energy
- Clean Water and Sanitation
- Climate Action
- Decent Work and Economic Growth
- Gender Equality
- Good Health and Well-Being
- Industry, Innovation, and Infrastructure
- Life below Water
- Life on Land
- No Poverty
- Partnerships for the Goals
- Peace, Justice, and Strong Institutions
- Quality Education
- Reduced Inequalities
- Respnsible Consumption and Production
- Sustainable Cities and Communities
- Zero Hunger

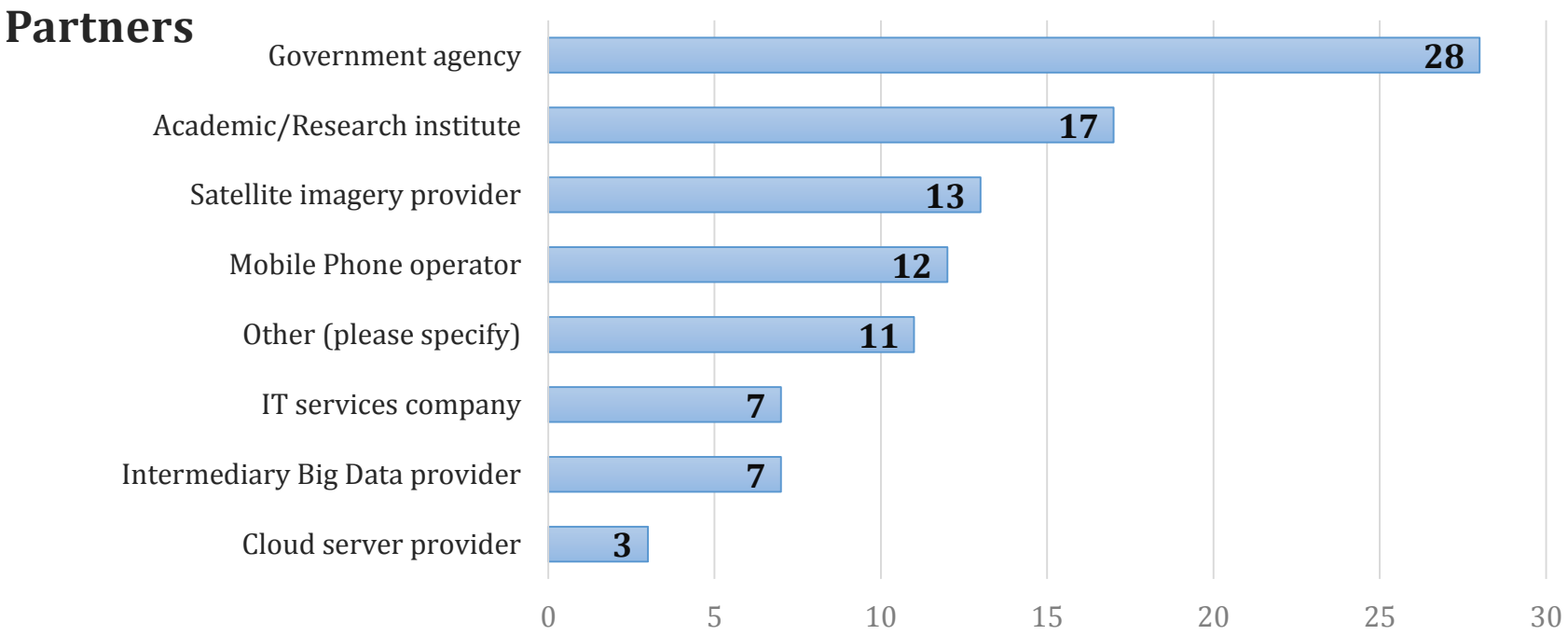


1. Survey of SDG-related Big Data projects



- Mobile phones (20), satellite imagery (18) and social media (11+8) are the most prominent sources
- Otherwise, wide range of sources

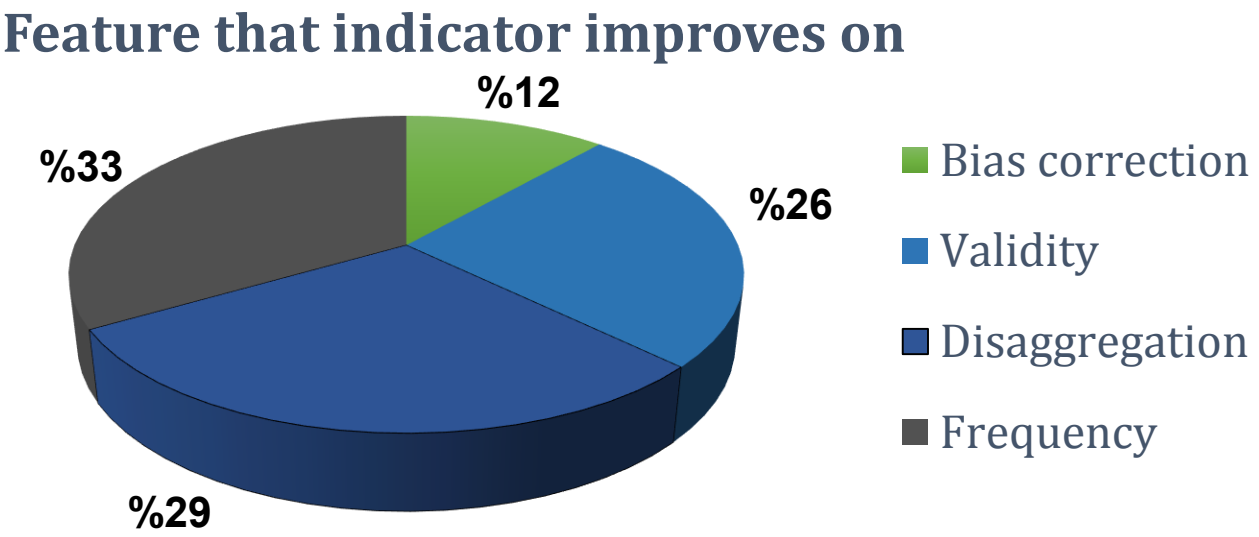
1. Survey of SDG-related Big Data projects



- Most projects partner with the public sector
- Among private sector partnerships, mobile phone operators and IT services dominate

1. Survey of SDG-related Big Data projects

Descriptives: Big Data projects' objectives



- The main objectives are improvements in data frequency and disaggregation
- This is consistent with the demands of the SDGs

2. Inventory

- We have a consolidated inventory of projects from: UNECE, Global Pulse, World Bank, Sandbox and Positium.
- We have started identifying projects that are linked to one or more of the SDG targets. Work is concluded for UNECE projects, but needs to be completed for other projects.
- Next steps:
  - Conclude the mapping of projects to SDG targets
  - Keep including other projects into the consolidated inventory
  - Coordinate/join forces with the inventory proposed by the TT on Cross-Cutting issues

Big Data projects by main area of use

Contents

A. UNECE

	Title	Organization	Sector	Overview	Indicator/topic [potential indicator]	Potential SDG/Target (G.T) [potential Goal/Target]
1.	Developing a Curriculum and Training Modules on Using Big Data for Official Statistics	ESCAP	General/ Cross-cutting	To use "big data" in producing official statistics, statisticians and managers in national and local statistical systems need to closely examine and understand the potential use of various types of big data as well as the issues and limitations of their usage for producing official statistics and indicators. Statisticians and managers also need to gain and/or improve their knowledge and skills for working with such data and integrating such work in the standard statistical business processes. This project aims to develop a training curriculum to address capacity-building requirements on understanding and assessing the potentials for utilizing big data for official statistics, particularly in developing statistical systems of Asia and the Pacific,	NA	

1.	**Automatization data recovering and integration**		**General/ Cross-cutting**			
2.	Use of web activity data for the production of flash estimates		General/ Cross-cutting		Unemployment data [other socio-economic indicators]	8 8.5
3.	Harvest statistics based on satellite images counts of individuals held on a major commercial marketing database comparison to Census data estimates	UK Office for National Statistics	Agricultural Statistics Demographic and social statistics (including subjective well-being)	Counts of individuals by age band and sex were obtained from the data provider Experian. The counts were based on their commercial marketing database - a foundation of edited electoral roll plus various other data sources including large scale continuous surveys fielded by Experian. The counts were compared with Census data	Agricultural productivity [Food security/availability & location]	2 [14.4]
4.	Smart meter type data for household structure/size and occupancy	UK Office for National Statistics	Demographic and social statistics (including subjective well-being)	This is exploratory research, commissioned out to academia, into the potential of electricity smart meter type data to identify household structure and size. A second objective is to research models to see if probability of occupancy by time of day might be derived. Smart meter data will be collected on all households in England by 2020. The minimum specification is energy usage every 30 minutes per meter. Data will be centralised and might be available for research (details/legislation still to be formally agreed). This research is being conducted on data from trials of energy use.	Household structure/types, occupancy by time	
5.	Smart meter data potential for detecting unoccupied dwellings	UK Office for National Statistics	Demographic and social statistics (including	Very much exploratory research. ONS has acquired electricity smart meter data from trials of energy usage. This data has various potential uses within official statistics - the focus for our work is currently on occupancy. Another objective is to familiarise ONS with the	See 11 [energy use/efficiency if combined with housing	7.3

3. Pilot Projects

- We intended to do new pilot research in 1-2 countries on calculating 2-3 SDG indicators using Big Data. The funding requests did not materialize.
- As an alternative, we have selected 10 big data projects that are closely related to SDG targets (out of which 2 are new pilots to be started by Postium in Estonia).
- These projects were selected based on their close links to SDGs and are either completed or will have substantive results that can reported by December 2015.
- Next steps:
  - Collect details for each of the pilots to be included in the report.
  - Consult with other TTs to determine if they have identified other pilots that could be included in our report.