

Emerging issues of capacity development in statistics

Integrating geospatial information and technology into official statistics



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Shared Prosperity **Dignified Life**



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Introduction: The Need to Modernize NSSs

- **Increasing demand of data** on small geographic areas to monitor the development goals and indicators at local and community levels;
- **Increasing access to/use of geospatial technology** has drastically increased the quantity and quality of multi-sources geospatial data (e.g. satellite imagery);
- **Technological developments** are revolutionizing the acquisition, management and dissemination of data in fundamental ways;
- **NSOs need to transform** and modernize their statistical systems to use these technologies and provide better access and quality of data at every level.



Benefits of Integration – statistics & geospatial

- Decision making processes at all levels – from local to global
- Global indicator framework for SDGs - 2030 Agenda;
- Supporting data sharing between institutions
- Enhancing the interoperability of geospatial and statistical info.
- Unlocking new insights and data relationships
- Building institutional collaboration between geospatial and statistical communities;

Prospects of Innovation and Technology in Official Statistics



Highlights



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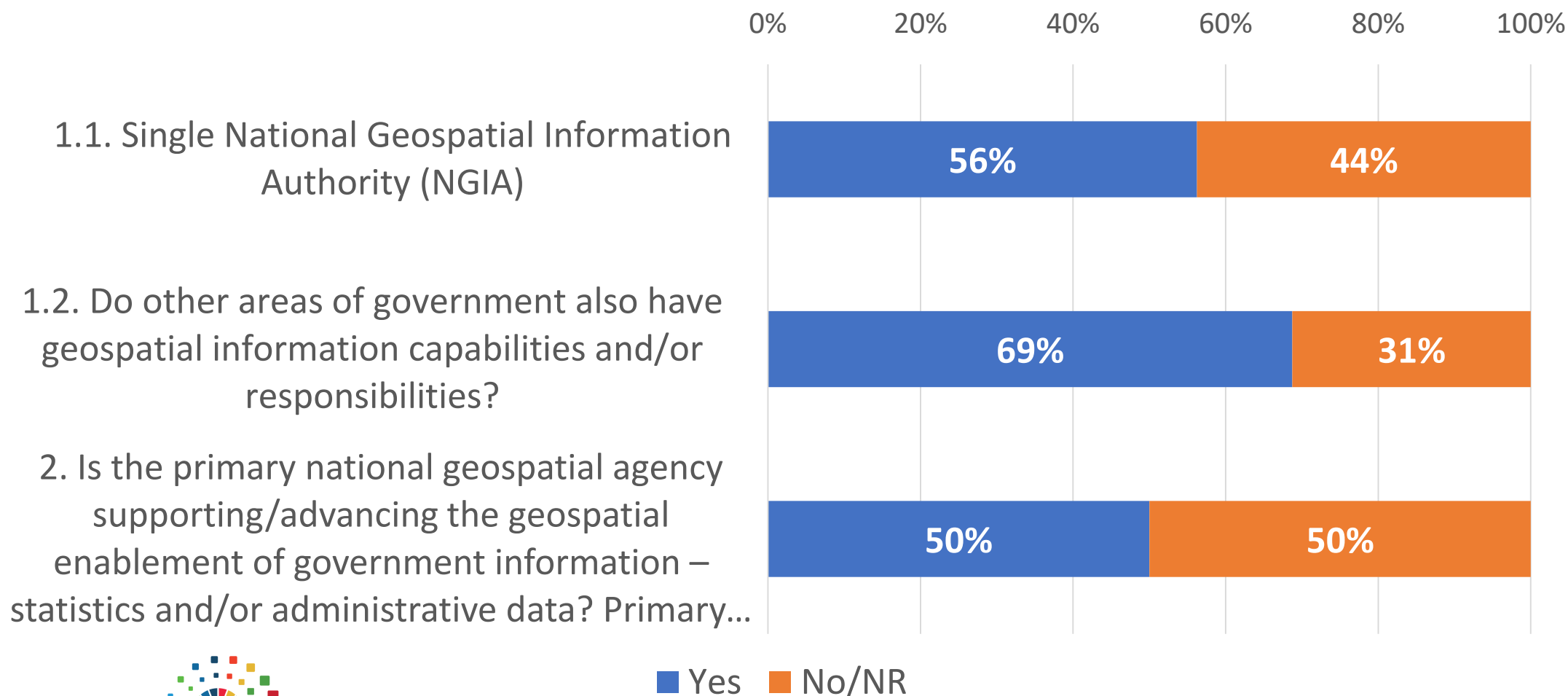
Shared Prosperity **Dignified Life**



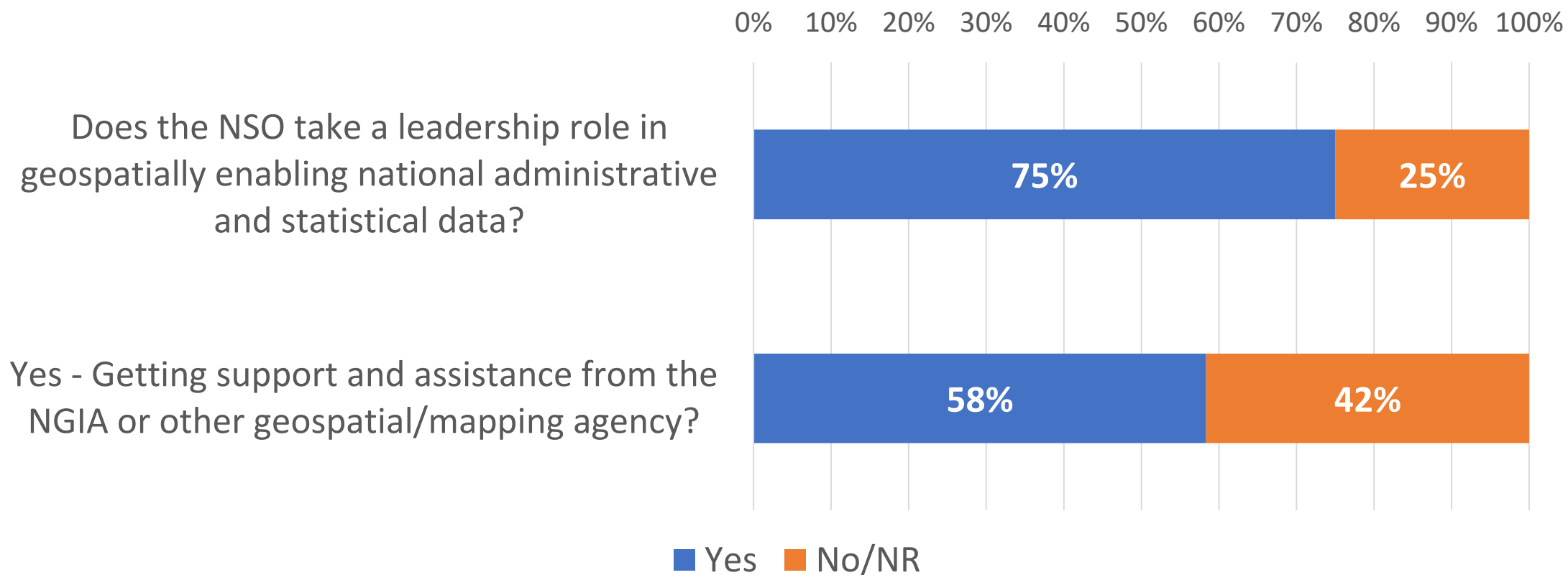
Questionnaire methodology

- Questionnaire sent to 18 ESCWA countries (NSOs)
- Main areas covered by the questionnaire:
 - Geospatial infrastructure
 - GIS, GPS and technology for Data collection
 - Dissemination methods and technology
 - Census and technologies
- 16 countries filled the questionnaire
- Some fields have been left empty

Organizational structure of geospatial information



NSO leadership in geospatially enabling data



Geospatial Framework

Response	Number of countries
YES – Basic layers:	
1. Administrative boundaries/Hydrography/Roads Blocks/Establishments/Land Parcels	9
2. Administrative boundaries/Hydrography/Roads Buildings/Establishments/Urban areas/Slums/Rural Settlements	2
3. Administrative boundaries/Settlements/Urban and populated areas/Roads Blocks/Buildings/Land Parcels Landmarks/Industrial Establishments/Farms/	1
4. WGS84/Imagery	3
5. National Statistical Spatial Framework (NSSF)/Global Statistical Geospatial Framework (GSGF)	2
NO – Geospatial Framework	1

Use of Satellite Imagery

- Only 3 countries mentioned imagery as basic layer of their geospatial framework (19%).
- Imagery is generally considered as a fundamental layer of any national spatial data infrastructure.
- Sometimes the only relevant data sources!
- Example: (SDG) Indicator 15.1.1:
 - **Forest area as a percentage of total land area**
 - Indicator = Geospatial data

Priority technologies / methodologies

- Building a Statistical-Geospatial Infrastructure
- Use of Satellite imagery/Earth Observations Data
- Point-based Data Collection method
- Mobile Technology / Hand-held Devices
- Internet-based Technologies

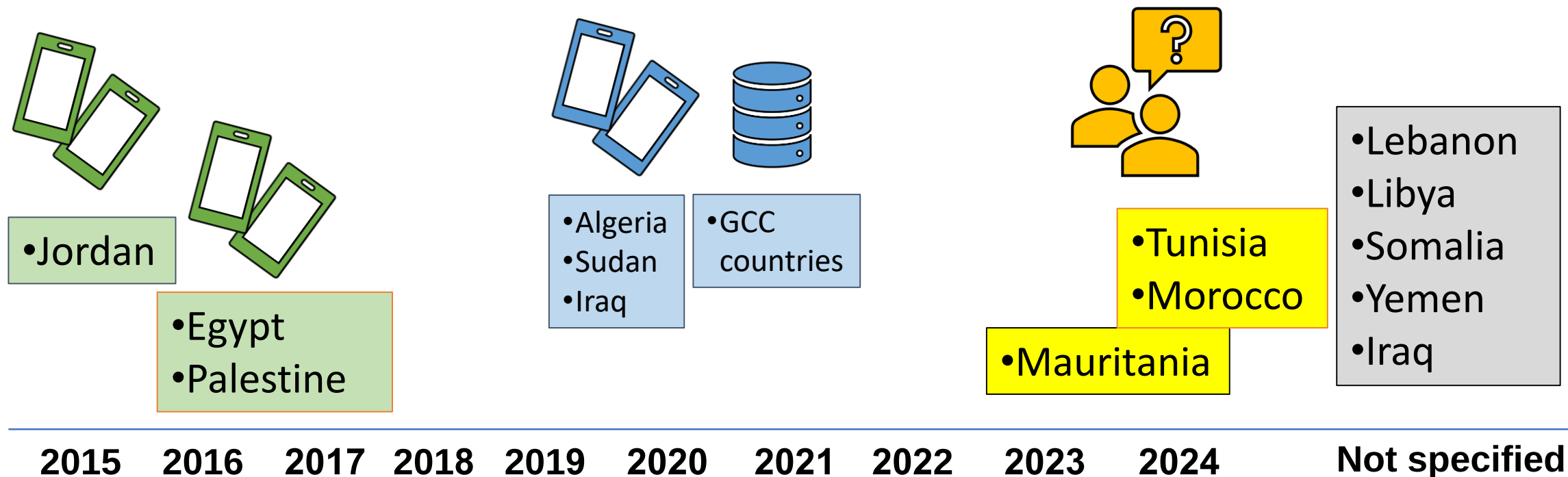
Institutional Coordination/Partnerships

- Institutional arrangements
 - data standards and interoperability
 - data access and sharing;
- Statistical-geospatial information infrastructures
 - effective partnerships and co-operation
 - multi-disciplinary stakeholders
- National Mapping Authority - National Statistical Office:
 - with base maps for census
 - field work improvements
 - geographic products derived from the census.

ESCWA's engagement

- Working Group on Population and Housing Censuses
- Bilateral technical cooperation with national statistical offices
- Workshops on the use of technology in censuses and HH surveys

Population censuses in Arab countries, 2020 round



Population statistics in crisis affected countries

- Special HH surveys and Census 2020
 - Large socioeconomic survey and Census
 - Socioeconomic survey in Libya and planning for census.
 - Socioeconomic survey in Sanaa and Yemen using GIS but not GPS
- Iraq
 - Syria
 - Libya
 - Yemen

Research of leading practices

- Geospatial Technologies

- RS: Satellite Imagery/Aerial Photography
- GPS/GNSS
- GIS
- Web Mapping / Web GIS
- Geo-Portals

- Mobile Technology

- Handheld-devices/CAPI
- Mobile Apps

- Internet-based Data Collection

- Cloud-Computing

- Open Data / Big Data

Future capacity development work

- Self enumeration
- Geocoding and geospatial technologies
- Sharing electronic devices (example: ECA – African census)
- Conflict affected areas
- Training agenda for NSOs
 - electronic questionnaire in tablets
 - validation rules for data entry and data checks
 - GIS for census and SDGs (workshop 2020)
 - data disseminations methods including interactive tables and maps
- Register based censuses and surveys

Partnership



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