INTEGRATING AND RE-PURPOSING INFORMATION SYSTEMS AND INFRASTRUCTURES FOR THE FUTURE WE WANT

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TOPICS

- Why data integration is important
- Benefits from data integration
- UN response to the need for data integration
- The data disruptors
- Lots of data ----- now what?
- A national case study

Why Information Integration is Important

- Increasing amount of data and data types
- Statistical data often applies to location
- Together, statistical and geospatial information lead to better understanding
- Together, integration expands the value and use of statistical and geospatial information in a national, regional, and local context
- Addresses the evolving proposition of modern, agile, policy-oriented, collaborative, integrated national information systems

Why Information Integration is Important

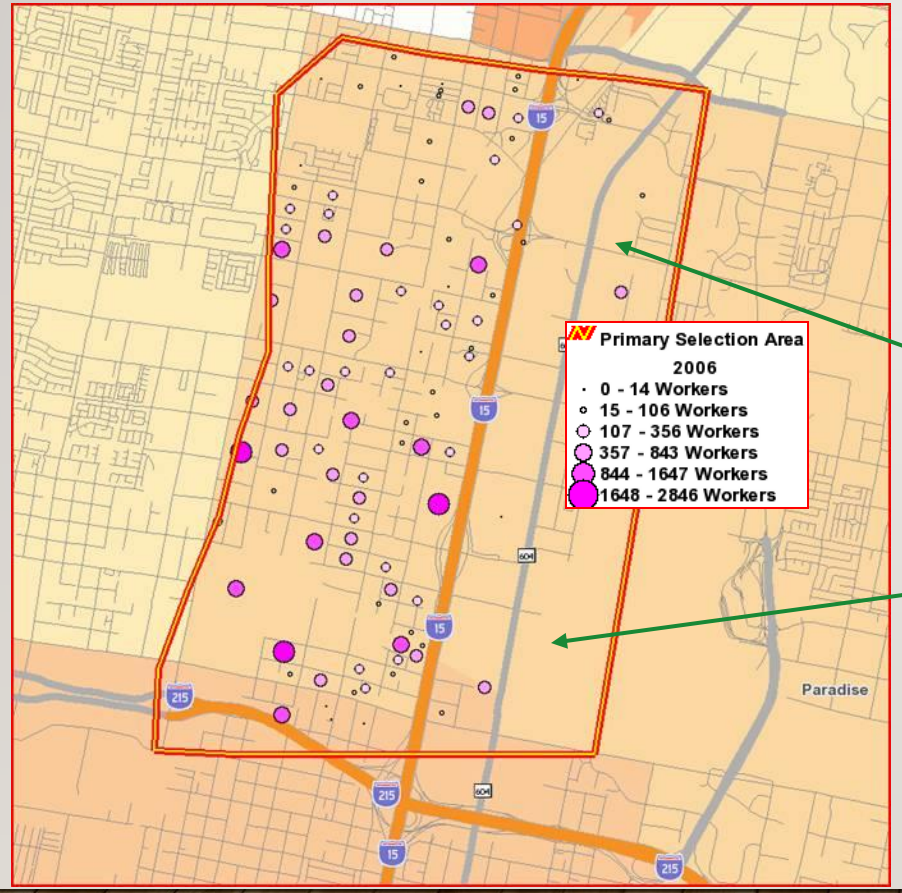
- Accurately locating information on people and businesses can result in a fuller understanding of social, economic and environmental issues than is possible by viewing statistical or geospatial information in isolation.

- To make progress on the 17 Sustainable Development Goals, targets, and global indicator framework requires new data acquisition and integration approaches to improve the availability, quality, timeliness and disaggregation of data at all levels.

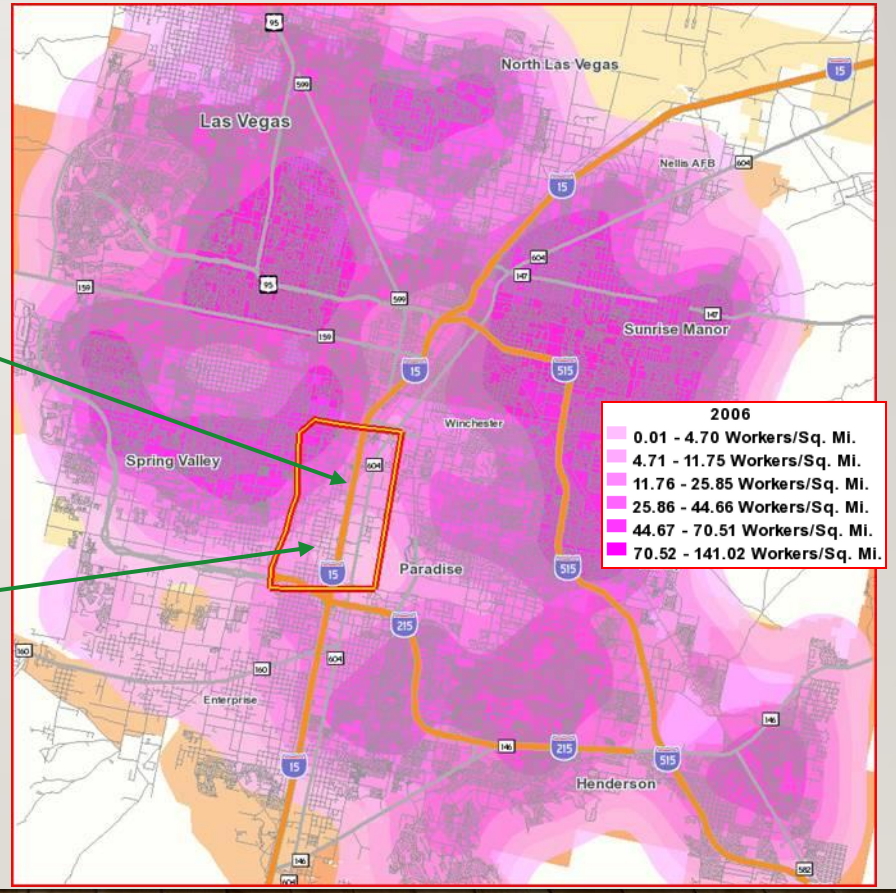
On the Map:

Visualizing Employment in Paradise

Where Workers are Employed



Where Workers Live



Benefits of Integration

- Improve planning for regional and local economies and communities

- Better target service delivery at the local-area level

- Meets citizen expectations for benefits and services such as:

  - health care
  - tax refunds or
  - social benefits

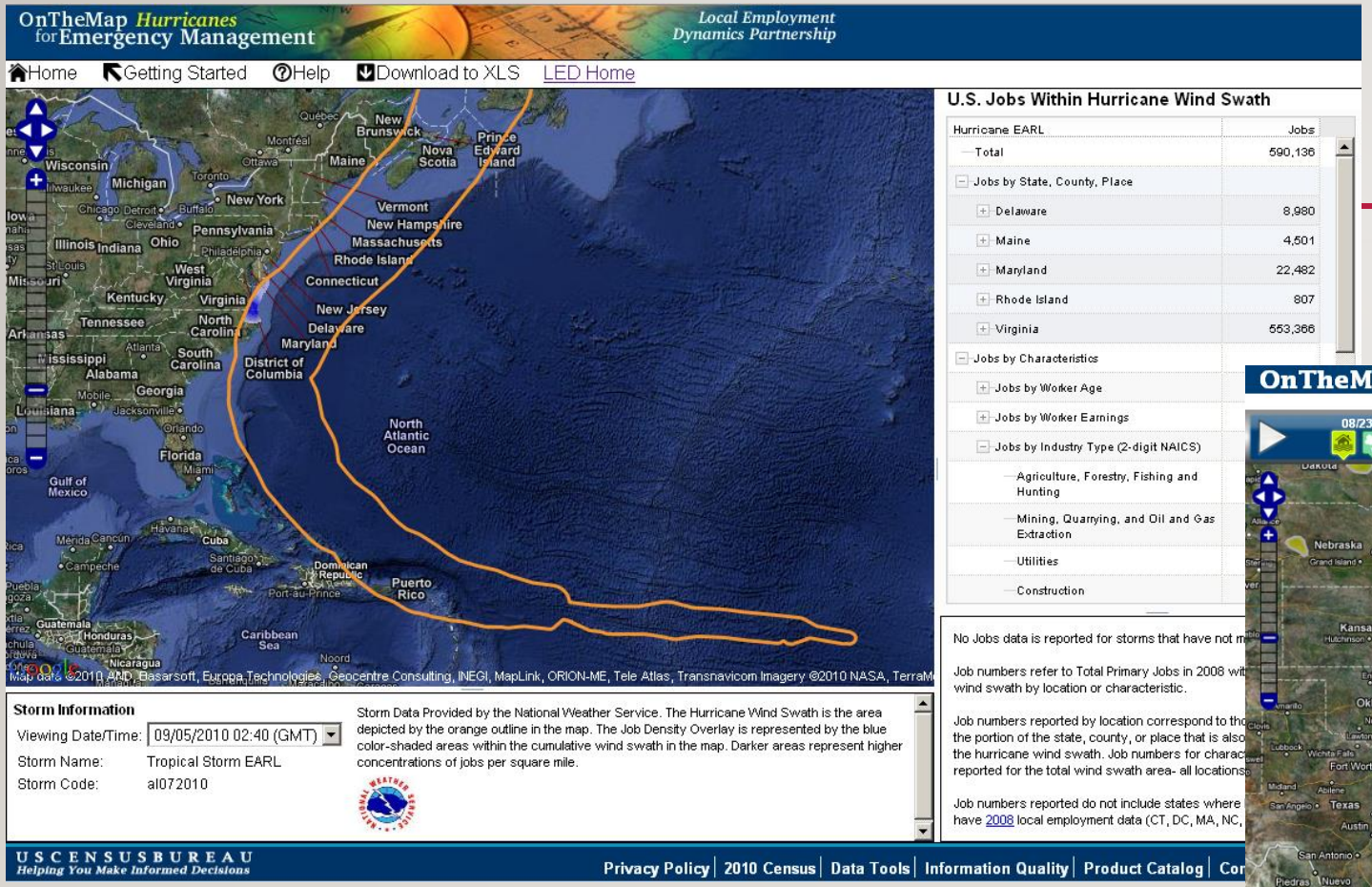
Benefits of Integration

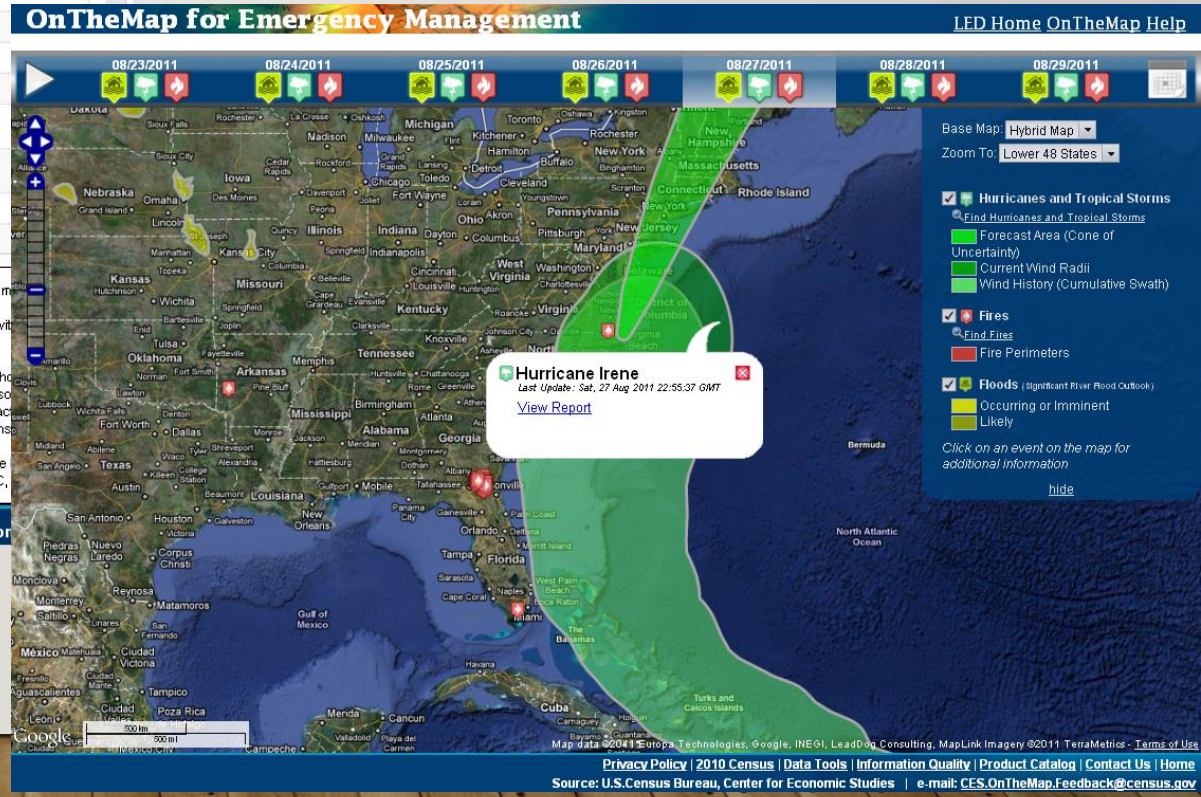
- Direct impact on improving lives for citizens
- For example, providing health facilities and access to education, clean water and sanitation improves the social well-being of citizens
- Economic development
- Industrial development and energy transition
- Tourism

More Benefits of Integration

- Public safety
- Transportation planning
- Smart cities
- Site location of schools and hospitals
- Risk management
- Crime activity and investigation
- Utilities planning for electric and water services

OnTheMap





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Linking geospatial information to statistics through geocoding.

[2nd Session of UN-GGIM, August 2012]

Stronger interoperability and integration, between geospatial and statistical authorities.

[Future trends in geospatial information management:
the five to ten year vision, July 2013]

International standard for linking socio-economic information to location—an **international statistical geospatial framework.**

[UNSC Programme Review. February 2013]

UN-GGIM | United Nations Commitee of Experts on Global Geospatial Information Management

Bridging between two communities

Statistical Community

Socio-Economic Datasets

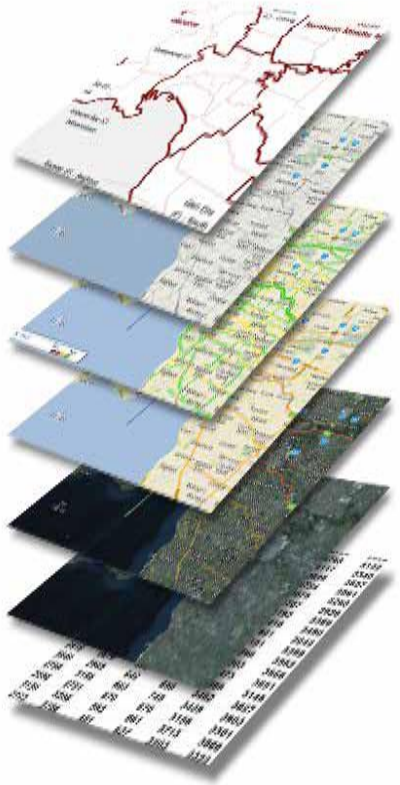
- **Core Statistical** — Census, Demographics, Agriculture, Building, Labour Force, etc.
- **Tax** — Income and Business Tax
- **Immigration**
- **Health** — Medicare, Pharmaceuticals, Workforce
- **Land** — Valuation and Use
- **Social Welfare** — Unemployment, Disability, Family Support
- **Others ...**

GSGF bridge

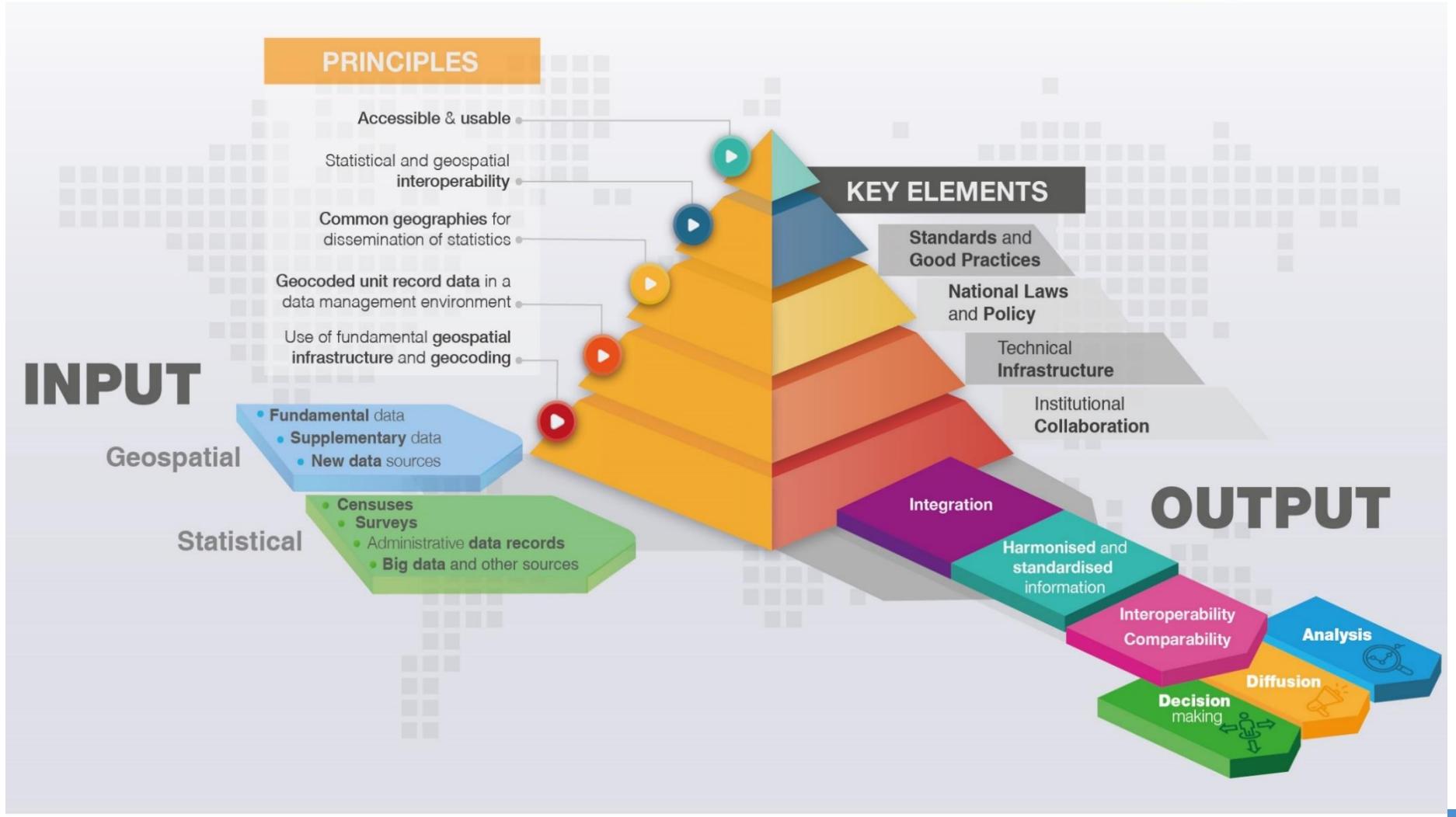
Spatial Community

Fundamental Geospatial Datasets

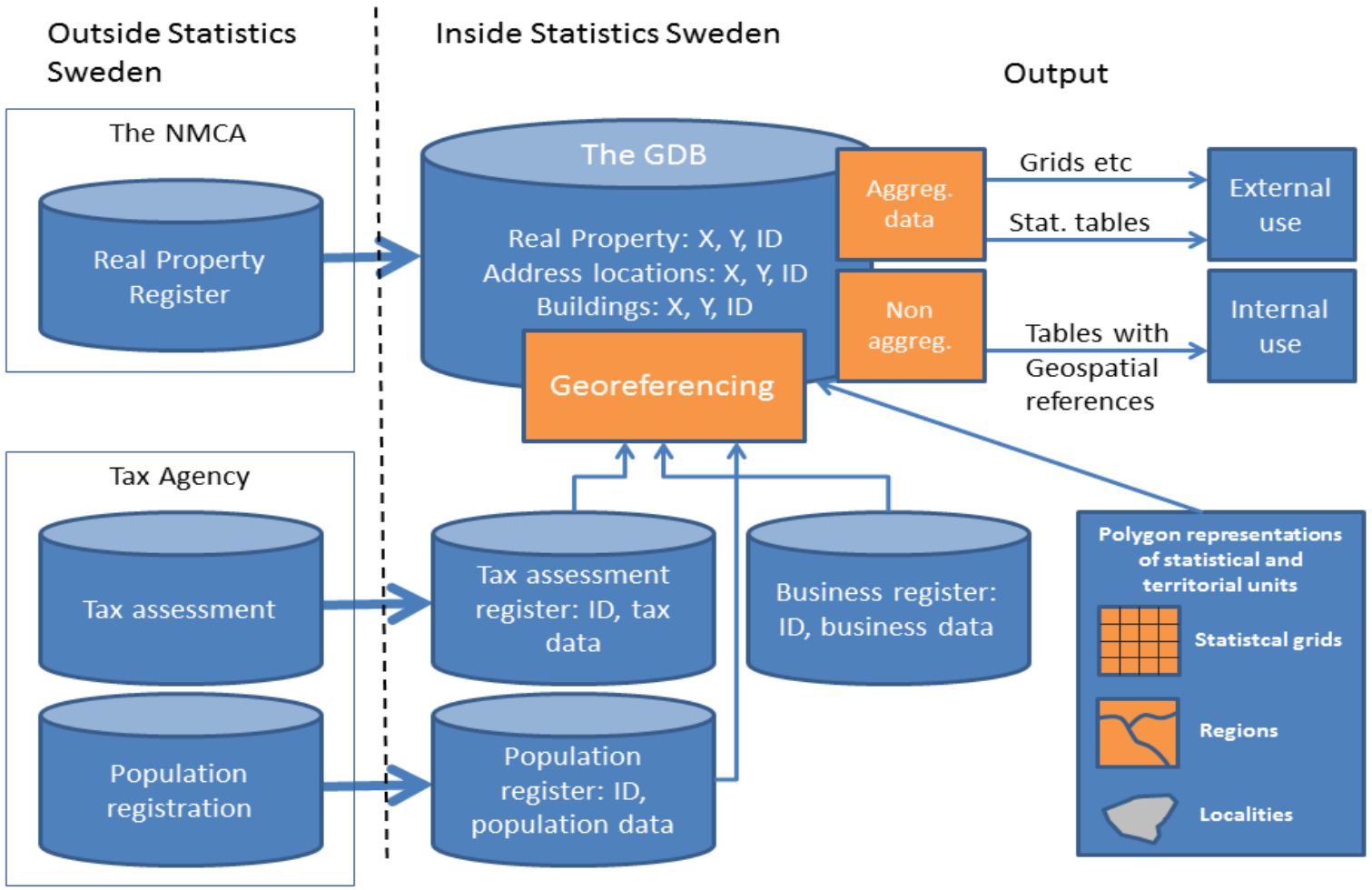
- Admin. & statistical boundaries
- Addressing, Place Names
- Transport, Water
- Land and Property
- Elevation and Depth
- Imagery
- Positioning



BETTER DATA BETTER LIVES
unstats.un.org
@UNStats #UNStatCom


PRINCIPLES
Accessible & usable
Statistical and geospatial interoperability
Common geographies for dissemination of statistics
Geocoded unit record data in a data management environment
Use of fundamental geospatial infrastructure and geocoding
INPUT
Geospatial
Fundamental data
Supplementary data
New data sources
Statistical
Censuses
Surveys
Administrative data records
Big data and other sources
KEY ELEMENTS
Standards and Good Practices
National Laws and Policy
Technical Infrastructure
Institutional Collaboration
OUTPUT
Integration
Harmonised and standardised information
Interoperability Comparability
Analysis
Diffusion
Decision making

Sweden: Data Integration on Property



Summary of Benefits of Integration

BIG DATA
STAKEHOLDERS
DATA ANALYST
DIRECTOR OF RESEARCH
BUSINESS SOLUTION ARCHITECTS
DATA WAREHOUSE
CUSTOMER SERVICES
DATA SCIENTIST
DATA INTEGRATION DEVELOPERS
CHIEF EXECUTIVE (CEO)
CLIENT PROJECT TEAM
BIOINFORMATICS SCIENTIST
ANALYTICS MANAGER
DATABASE ADMINISTRATOR
CHIEF INFORMATION OFFICER (CIO)
CAMPAIGN EXPERTS
BIOSTATISTICIAN
CHIEF TECHNOLOGY OFFICE (CTO)
BIG DATA
BUSINESS SMES
SUPPLIERS
CHIEF SCIENTIST
CUSTOMERS
ACTUARY
COMPETITORS
BUSINESS ANALYSTS
DATA MANAGER
COMPUTER SYSTEMS ANALYST
CHIEF CREATIVE OFFICER (CCO)
BUSINESS INTELLIGENCE CONSULTANT
DOMAIN EXPERT
DATA SCIENTIST
DATA MINER
DEPARTMENT HEADS
ACTUARY
BIG DATA PROGRAMMER
BI DEVELOPERS
DATA ENGINEER
DATA HYGIENISTS
DATA ARCHITECTS
PROJECT BOARD

Data &
the Crowd
Impact and Opportunity

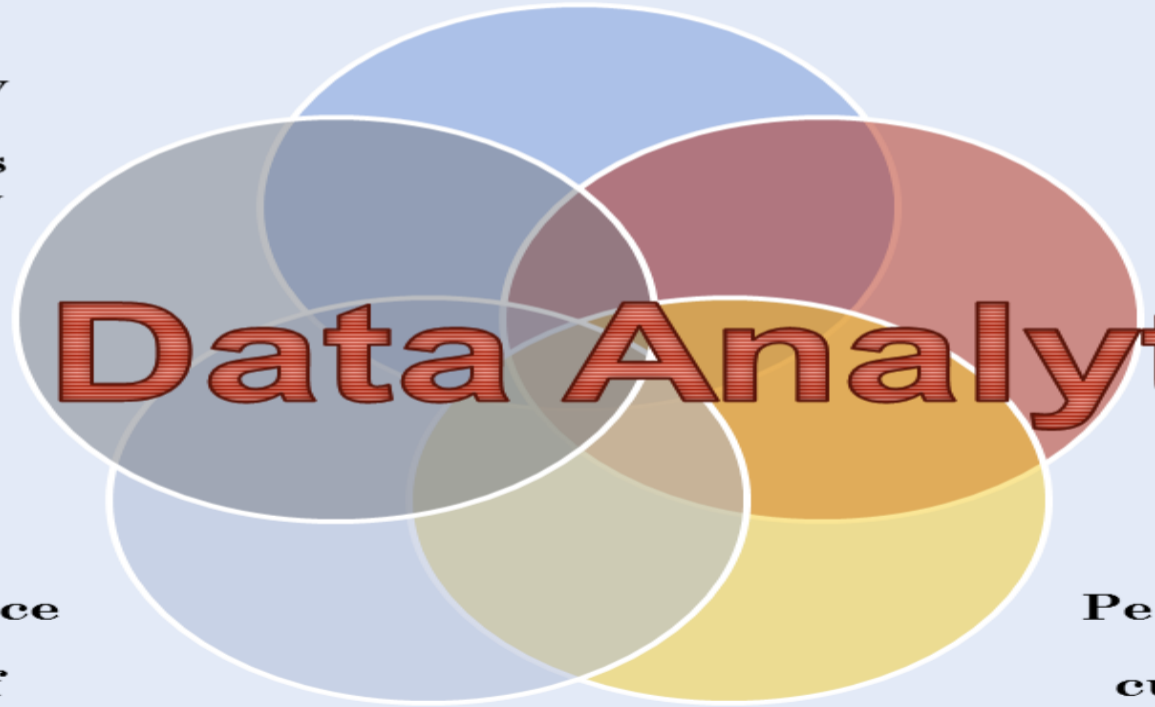
WHY IS
BIG DATA
ANALYTICS
SO IMPORTANT?

Intent - context of strategic, tactical, and operational decision management

Technology — priority focus on hardware, software, and services for economical supply of relevant Big Data and analytics

Process — relevancy of Big Data and analytics to roles, responsibilities, and outcomes

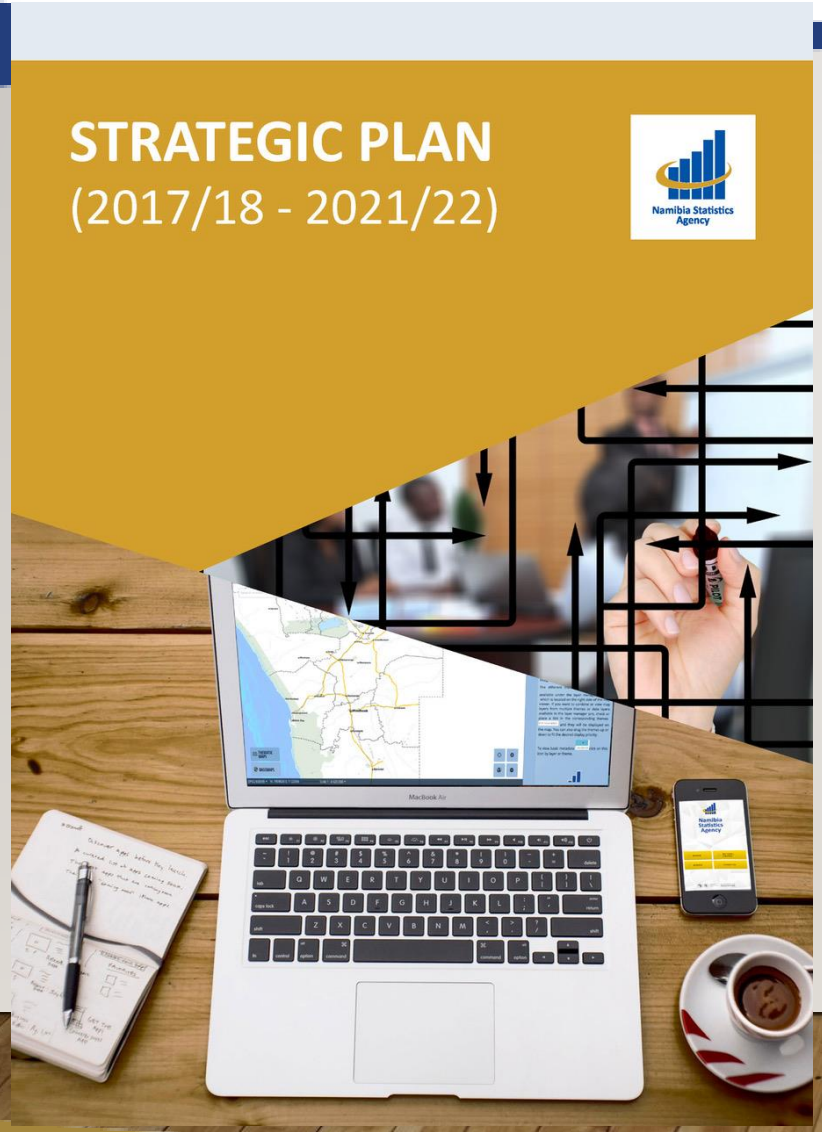
Big Data Analytics



Data — governance and life-cycle management of voluminous, varied, and high-velocity data

People — alignment of organization and cultural norms with the use of Big Data and analytics

NSDI NAMIBIA ON THE NSA 5 YEAR STRATEGIC PLAN



GOAL 3: REALISE A SPATIALLY-ENABLED SOCIETY:

SO1: Enhance a nation-wide infrastructure of digital spatial data, tools and services

- Develop a responsive NSDI coordination framework
- Spatial data production and management
- Develop data dissemination tools and services to users and conduct advocacy work

SO2: Improve statistical integration with spatial data

- Advocate for common geographies for the dissemination of statistics
- Develop a geocoded register of dwellings and other structures in the country

Partnerships are the glue of the IGIF*

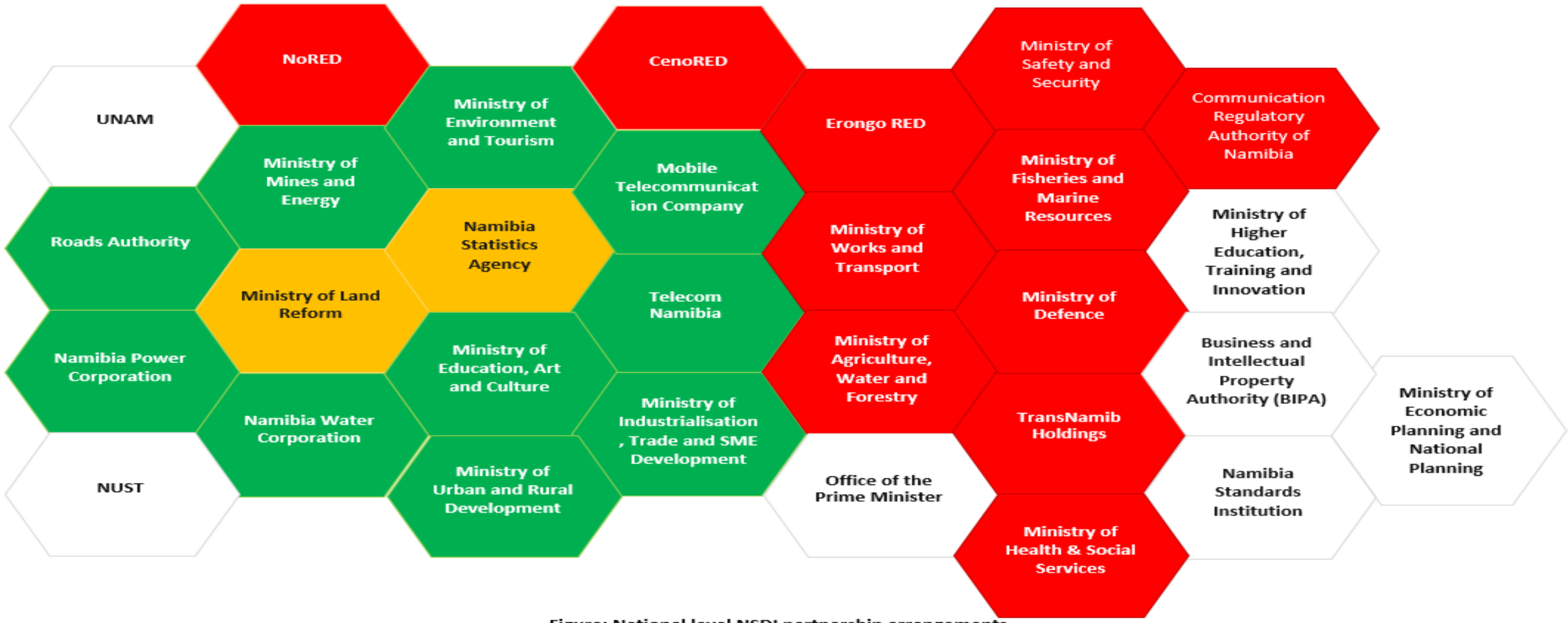


Figure: National level NSDI partnership arrangements

Data custodian signed MoU

Data custodian not yet signed MoU

NSDI Coordinating Bodies

Participation by virtue of mandate

FROM NAMIBIA – OPPORTUNITIES (*MODIFIED)

1. Building a spatially-enabled society and e-government
2. Raising public awareness (accountability and transparency)
3. Orderly spatial planning, decision making and policy design
4. Building new markets, results in increased government revenue through taxation
5. Leveraging government resources, avoidance of duplication
6. Shared competence across government
7. IGIF* is an international best practice.

CONCLUSION

- Now it is up to each of us to respond and contribute