# Regional virtual seminar series on the GSGF and its five principles

First seminar

**Principle 1**

Use of fundamental geospatial infrastructure and geocoding



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## First seminar

## Principle 1

### Use of fundamental geospatial infrastructure and geocoding

**Virtual Meeting facilitated by the Working Group on Integration of Statistical and Geospatial Information of UN-GGIM: Americas and ECLAC**

May 15, 2025 | 10:00 AM to 11:00 AM (GMT-5)

Statistical Institute of Jamaica

# Jamaica's Use Case:

## STATIN'S General Approach and Progress in the Implementation of GSGF Principle 1

**Simone M. Lloyd, GISP**

*Senior GIS Manager & Trainer,*

*National Spatial Data Management Branch*

*Ministry of Economic Growth & Infrastructure Development, Jamaica*

National Spatial Data Management Branch

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# Outline

- Overview of Jamaica
- Statistical Geography Framework
- Use of Geospatial Technologies in Data Collection
- Integration of Statistical and Geospatial Information
- Challenges and Lessons Learned
- Future Priorities

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# CARIBBEAN SUB-REGION



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# CARIBBEAN SUB-REGION

**Comprised of 16 Member States & Territories of UN-GGIM:Americas**




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# Jamaica

- A Small Island Developing State (SIDS) within the Greater Antilles, occurring in the northwestern section of the Caribbean.
- Third-largest island in the Caribbean after the islands of Cuba and Hispaniola (Haiti and Dominican Republic).
- **Size:** 10,990 square kilometres (4,240 sq mi)
- **Capital:** Kingston (largest city), hub of business and commerce. Montego Bay (second city), Tourism mecca of the Caribbean.
- **Population: 2,774,538** (2022 Census, STATIN)
- **Population growth rate:** 2.84 % between 2011 and 2022, the slowest rate of growth in four decades.

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## Principle 1

## Use of fundamental geospatial infrastructure and geocoding

- The **Statistical Institute of Jamaica (STATIN),** is the National Statistics Office (NSO).
- It is the leading provider of official statistics on Jamaica's **economic, social, demographic, and environmental conditions**.
- Through its **Geographic Services Unit (GSU) and survey operations**, has been advancing the integration of statistical and geospatial information in support of evidence-based decision-making and national development planning.
- The **Institute's work aligns with Principle 1** of the Global Statistical Geospatial Framework (GSGF), which focuses on **strengthening geospatial infrastructure and geocoding capabilities.**

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# Statistical Geography Framework

A key component of Jamaica's implementation approach has been the **continued use and maintenance of Enumeration Districts (EDs)** as the **country's primary statistical geography framework**.

ED boundaries are used across censuses and household surveys and provide a **standardised geographic structure for the collection, analysis and dissemination of official statistics.**

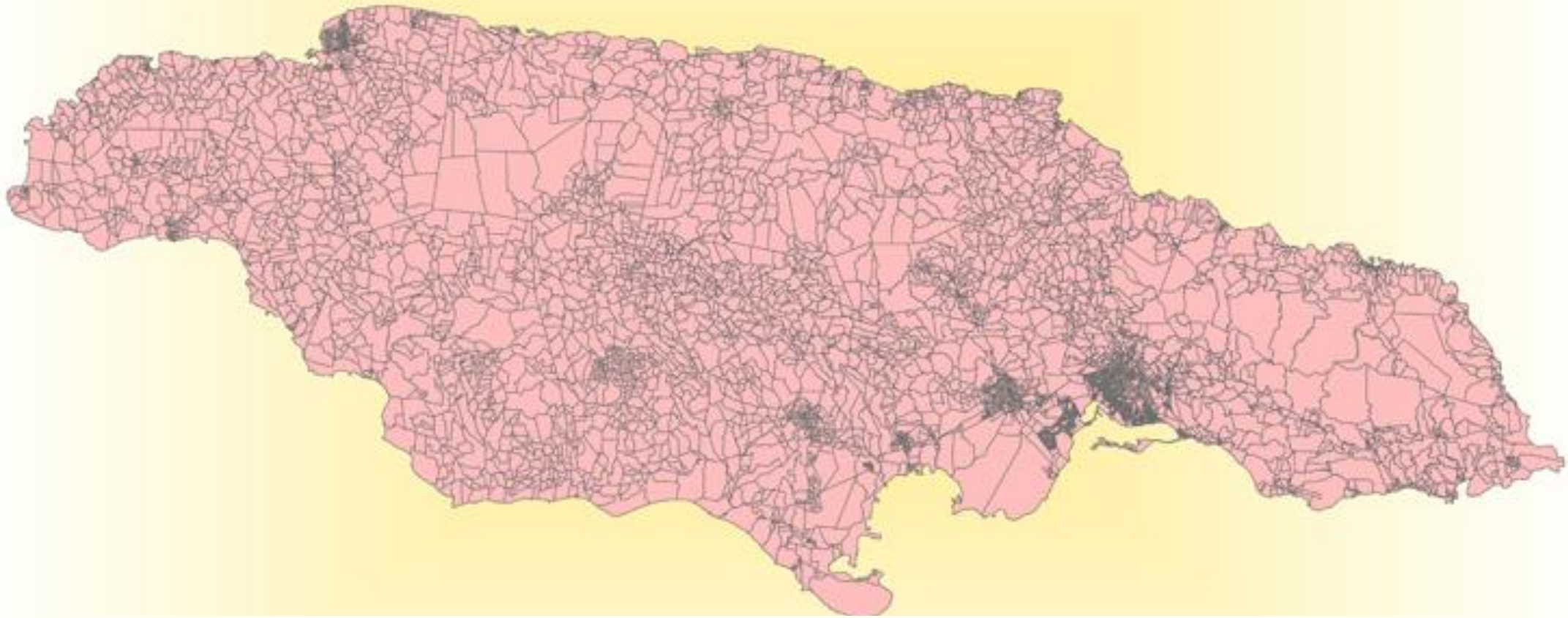
The development and dissemination of digital maps have improved operational efficiency and support more accurate geographic referencing of statistical data.

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# 2011 Jamaica Enumeration Districts



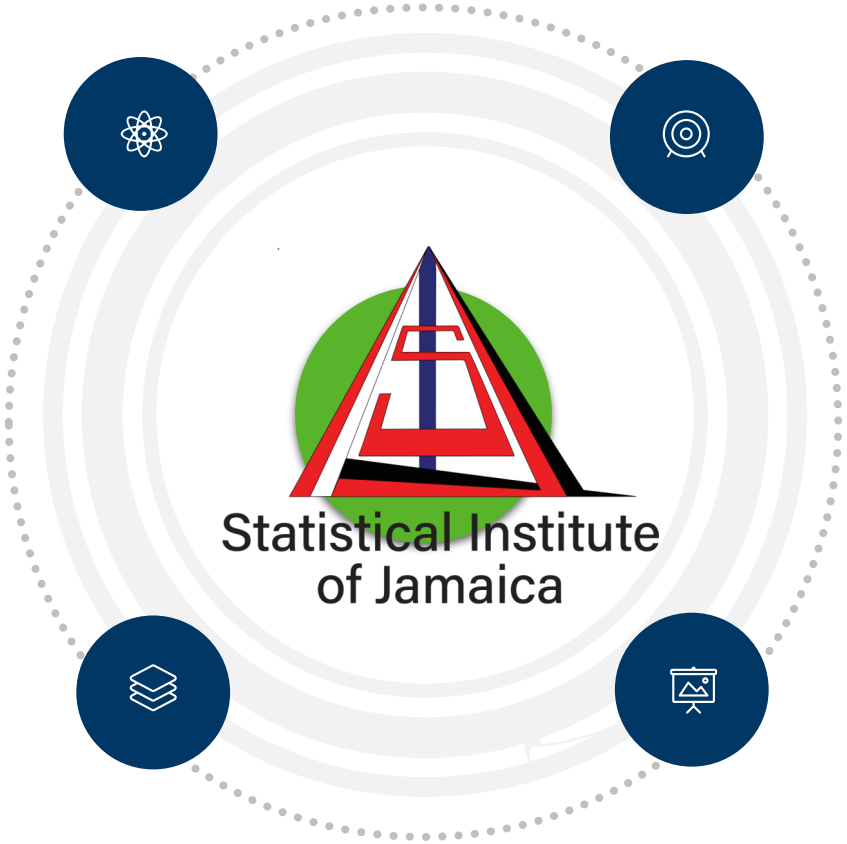
Source: 2011 Population and Housing Census, Statistical Institute of Jamaica.

30 15 0 30 60 90 Kilometers

# Statistical Geography Framework

STATIN has continued to strengthen this framework through:

- **Updating and maintaining ED boundaries**
- **Production of digital geospatial products including GeoPDF ED maps**
- **Integration of geographic coding systems into statistical operations**
- **Enhancing accessibility and usability of spatial products for field and office operations**




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*The development and dissemination of digital maps have improved operational efficiency and support more accurate geographic referencing of statistical data.*

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# Statistical Geography Framework

- STATIN has increasingly integrated geospatial technologies into field operations through the use of **tablet-based data collection systems**.

- Using platforms such as **Survey Solutions**, geographic coordinates can be captured during field interviews, supporting **improved location verification and quality control processes.**

- The use of **GPS-enabled data collection** has also enhanced the Institute's ability to produce geographically disaggregated statistics.

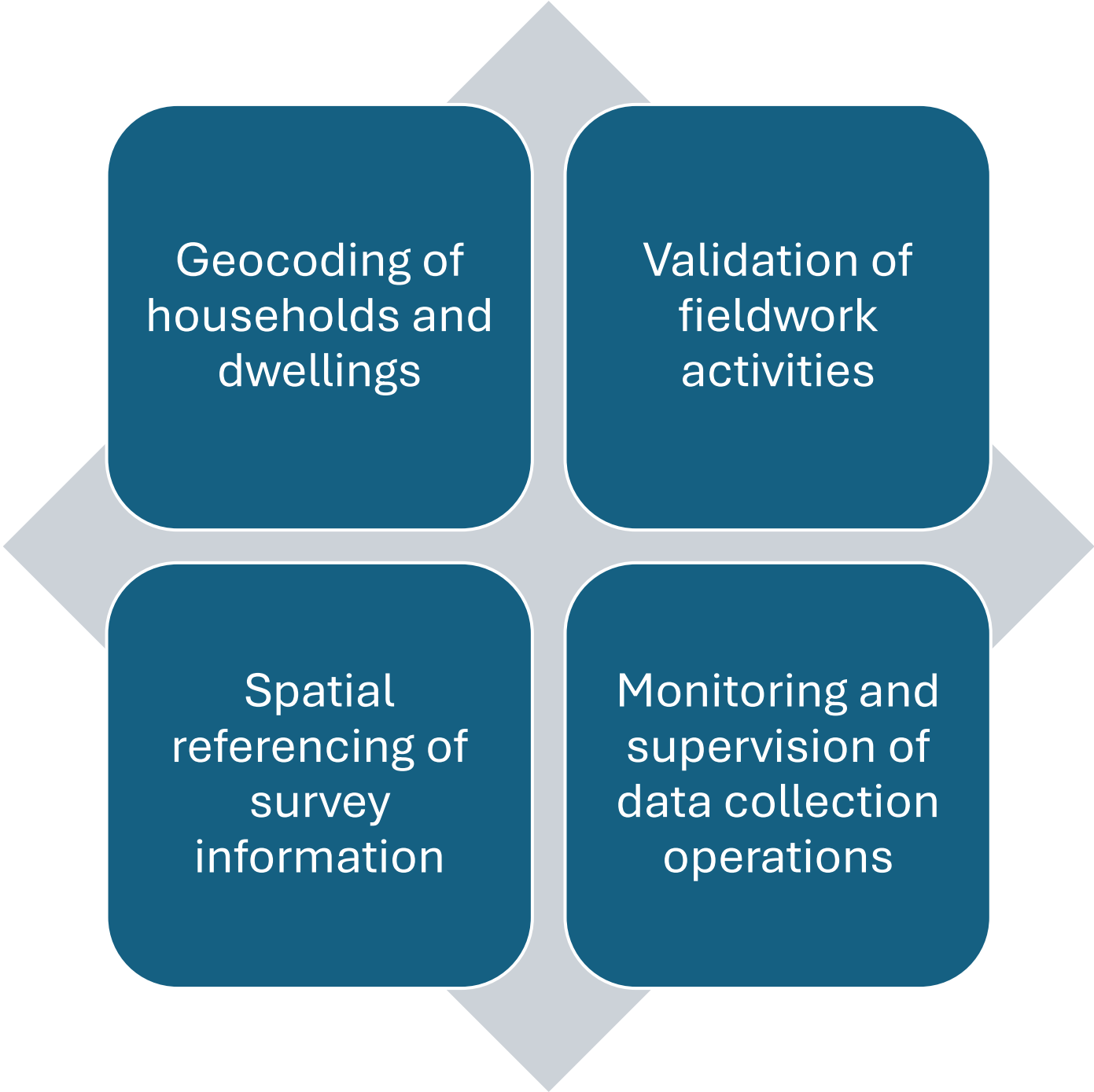
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**Use of Geospatial Technologies in Data Collection has strengthened:**




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# Integration of Statistical and Geospatial Information

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STATIN continues to work towards **greater integration of socio-economic statistics with geospatial information** to support national planning and policy development.

This includes:

- Production of statistics at small geographic levels
- Support for Sustainable Development Goal (SDG) monitoring
- Use of spatially enabled data for social and economic analysis

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# Enterprise GIS Implementation

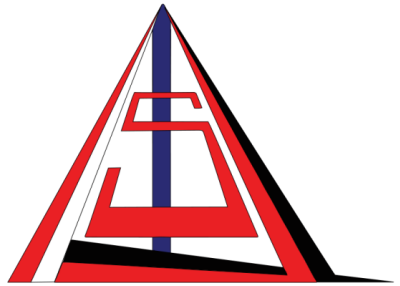
To further strengthen the framework, STATIN will be implementing an Enterprise Geographic Information System (**Enterprise GIS**).

This system will **enhance the management, integration and dissemination of geospatial and statistical data** across the Institute by providing **a centralized and secure platform for spatial data storage, analysis and sharing**.



STATIN's Enterprise GIS will be implemented in collaboration with **Jamaica's National Spatial Data Management Branch (NSDMB**), within the **Ministry of Economic Growth & Infrastructure Development** (MEGID), under the **GOJ/ESRI Enterprise Agreement (EA).**

The NSDMB through its GIS Infrastructure Unit is the administrator of the EA.



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The Enterprise GIS System will further support the implementation of GSGF Principle 1 by:

- Improving geospatial data governance and standardization
- Enhancing geocoding accuracy and spatial referencing capabilities
- Supporting real-time access to geospatial information for statistical operations and decision-making
- Strengthening interoperability and data sharing across departments and external stakeholders
- Increasing the efficiency of spatial analysis, mapping and dissemination of official statistics

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ArcGIS Enterprise

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ArcGIS Enterprise

Enterprise GIS System implementation

Modernize Jamaica's national geospatial statistical infrastructure

Strengthen the integration of geospatial information within the national statistical system.

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# Available Map Products

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Enumeration District Maps & Descriptions
Enumeration District Shape files (1991, 2001 and 2011)
Special Area Shapefiles (1991, 2001, 2011)
Parish Shapefiles (1991, 2001, 2011)
Parish shapefiles with census data
Special Area Shapefiles with census data
Parish and Special Areas Mylars

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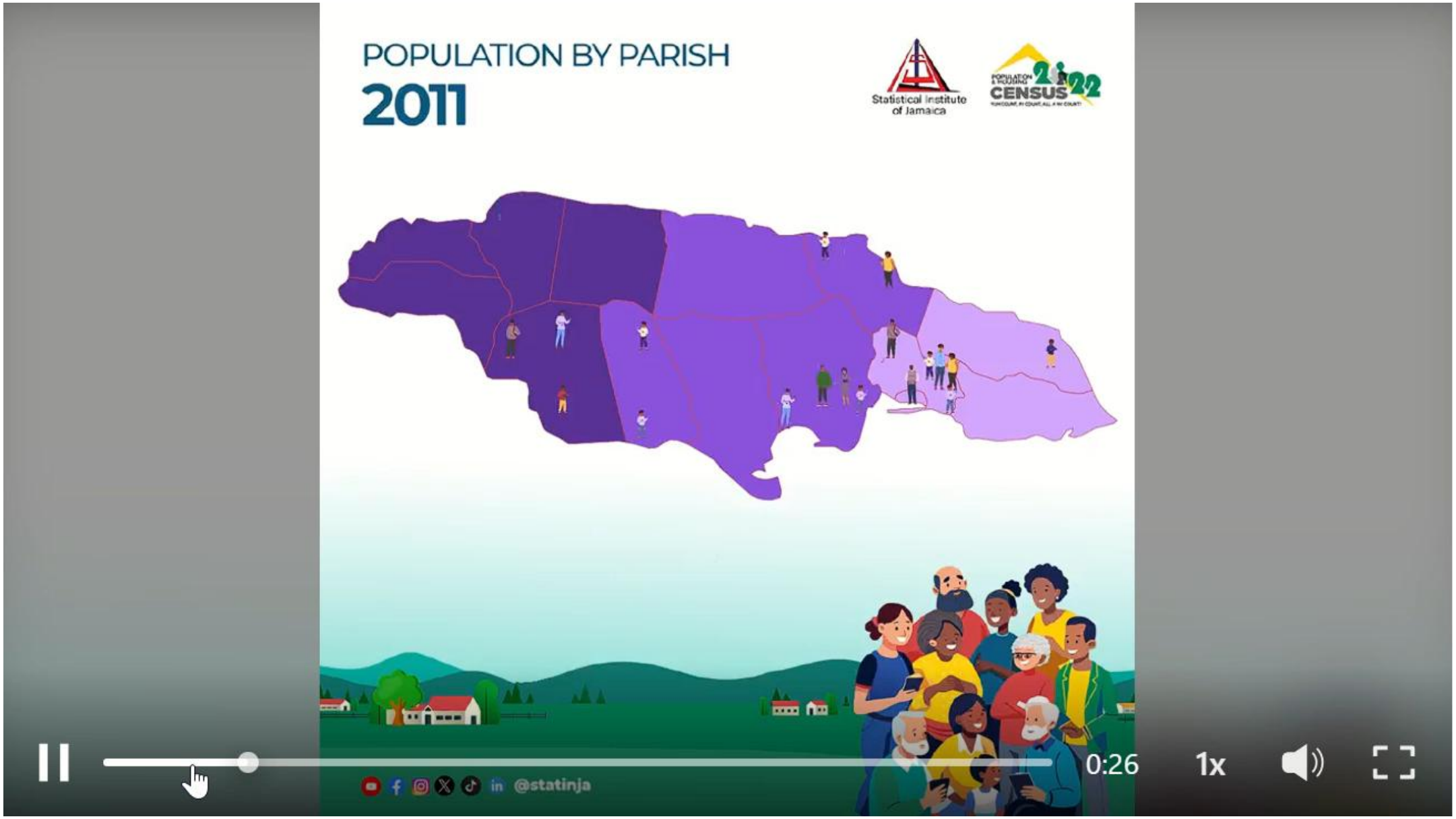
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# Available Services

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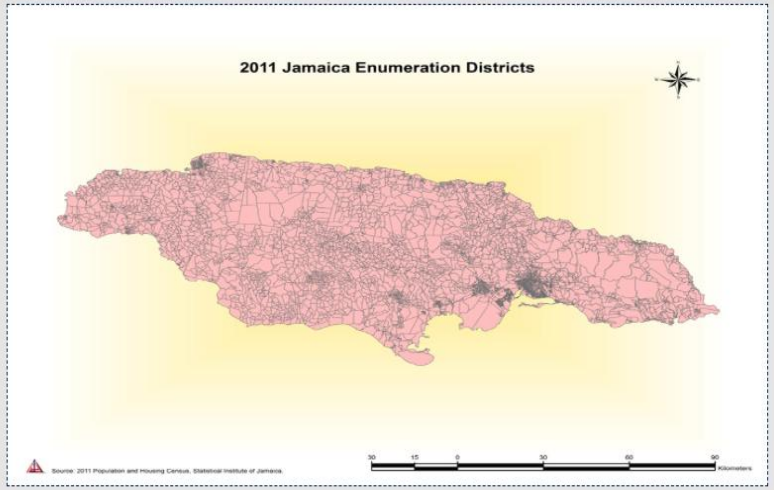
Joining of census data to EDs and Special Areas
Query aspects of Census data by Parish, Constituency and EDs
Extract census data by ED relevant to projects
Create boundaries for Special Projects using ED's
Create and provide KML files and maps with census data
Hotspot Analysis
Regression Analysis
Community Map

# STATIN's 2011 Population and Housing Census

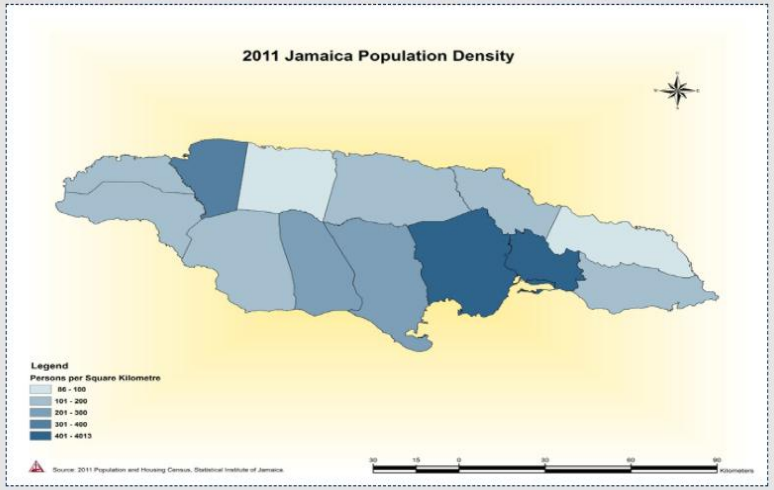


# STATIN's 2022 Population and Housing Census

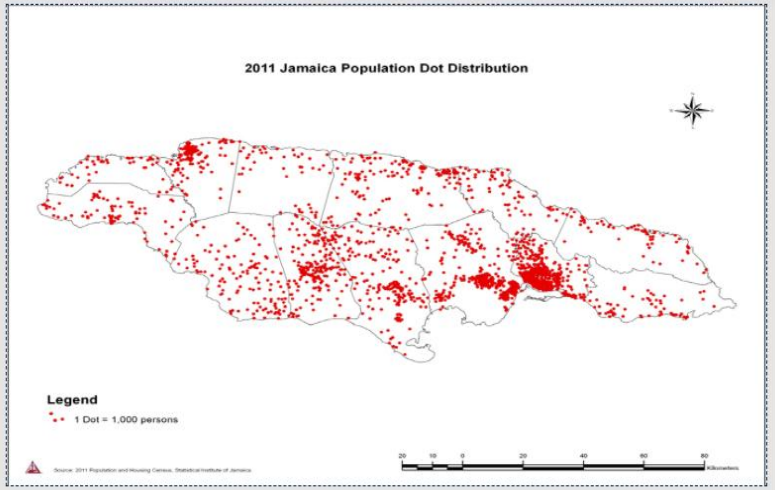




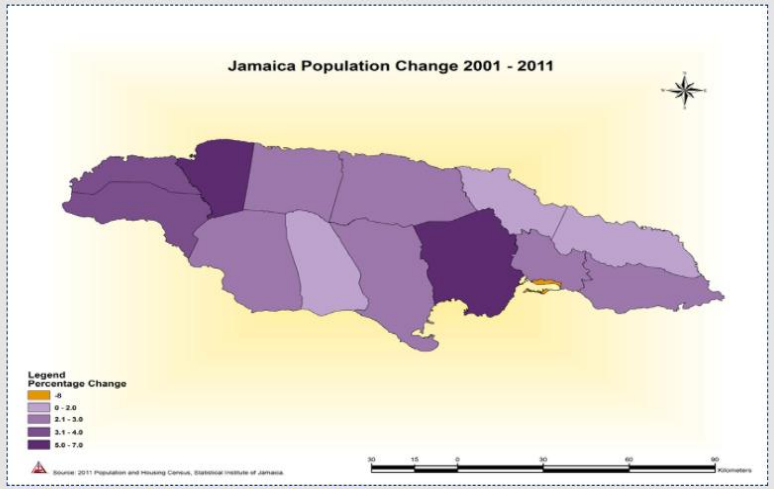

Jamaica EDs 2011



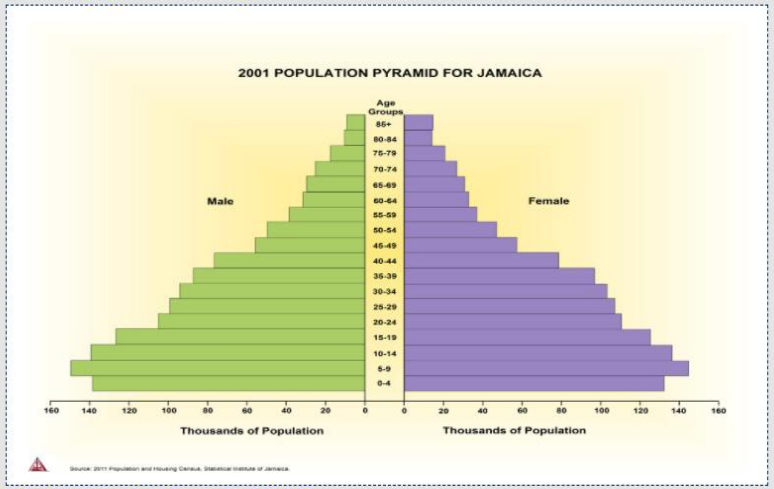

Jamaica population density 2011



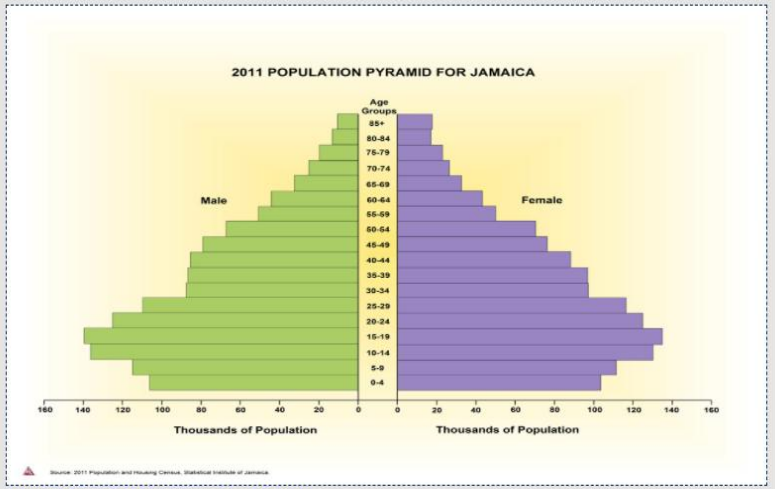

Jamaica distribution 2011




Jamaica population change 2001 - 2011




Jamaica population pyramid 2001




Jamaica population pyramid 2011

statinja.gov.jm/maps.aspx

- The need for continued modernization of geospatial infrastructure
- Resource and capacity constraints
- Addressing inconsistencies in location and addressing systems
- Maintaining updated geographic boundaries
- Challenges associated with natural disasters and their impact on field operations and geographic comparability

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**While progress has been made, several challenges remain.**

***The passage of Hurricane Melissa(October 2025) highlighted the importance of resilient geospatial systems and the ability to rapidly assess and respond to changing geographic and socio-economic conditions.***

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# Future Priorities

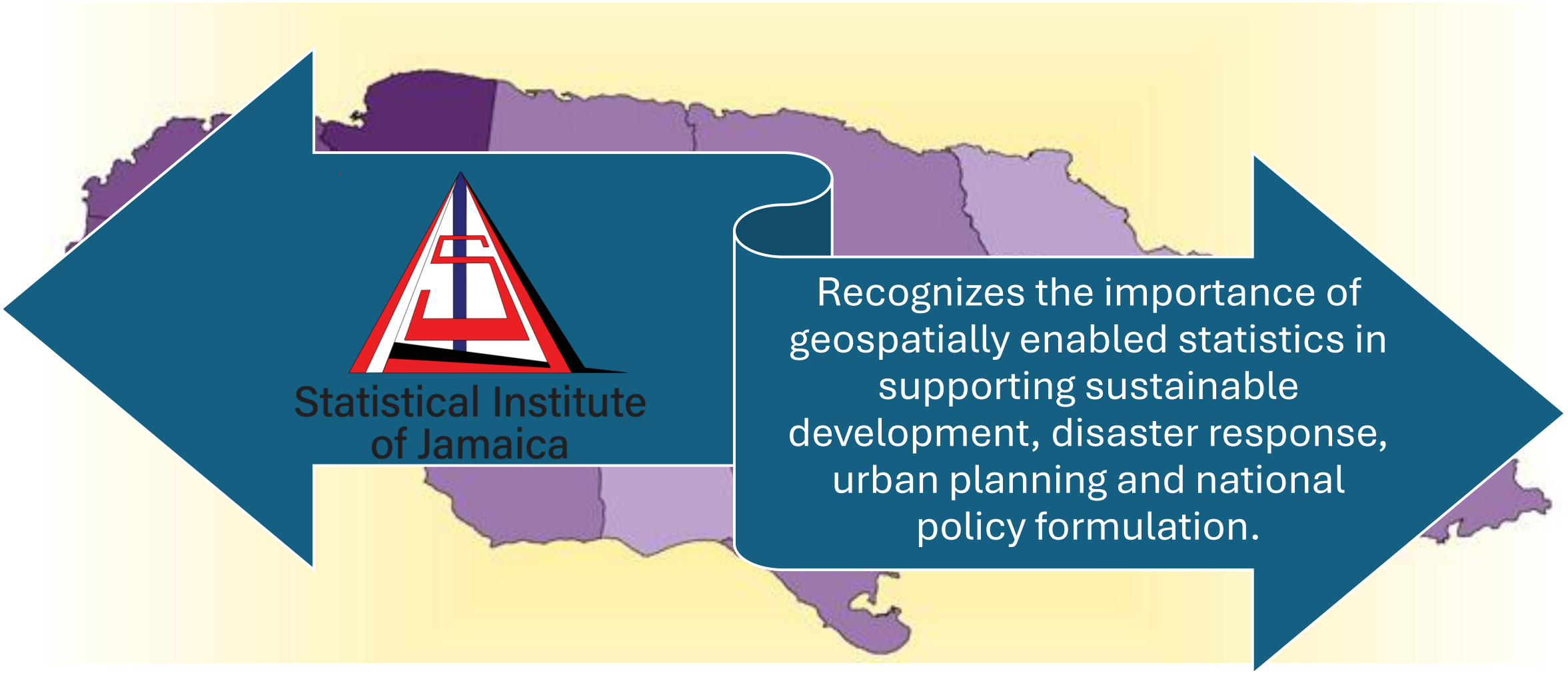
Expanding **geocoding and spatial analysis** capabilities

**Enhancing interoperability** across national datasets

Continued **modernization of statistical Geography products**

Supporting **development of national addressing initiatives**

Further **alignment with the principles of the Global Statistical Geospatial Framework**


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Recognizes the importance of geospatially enabled statistics in supporting sustainable development, disaster response, urban planning and national policy formulation.

# Acknowledgement


**Ms. Philone Mantock**
Director
Field Services
STATIN

**Mr. Mirko Morant**
Geographer
Geographic Services Unit
STATIN




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# Thank You

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