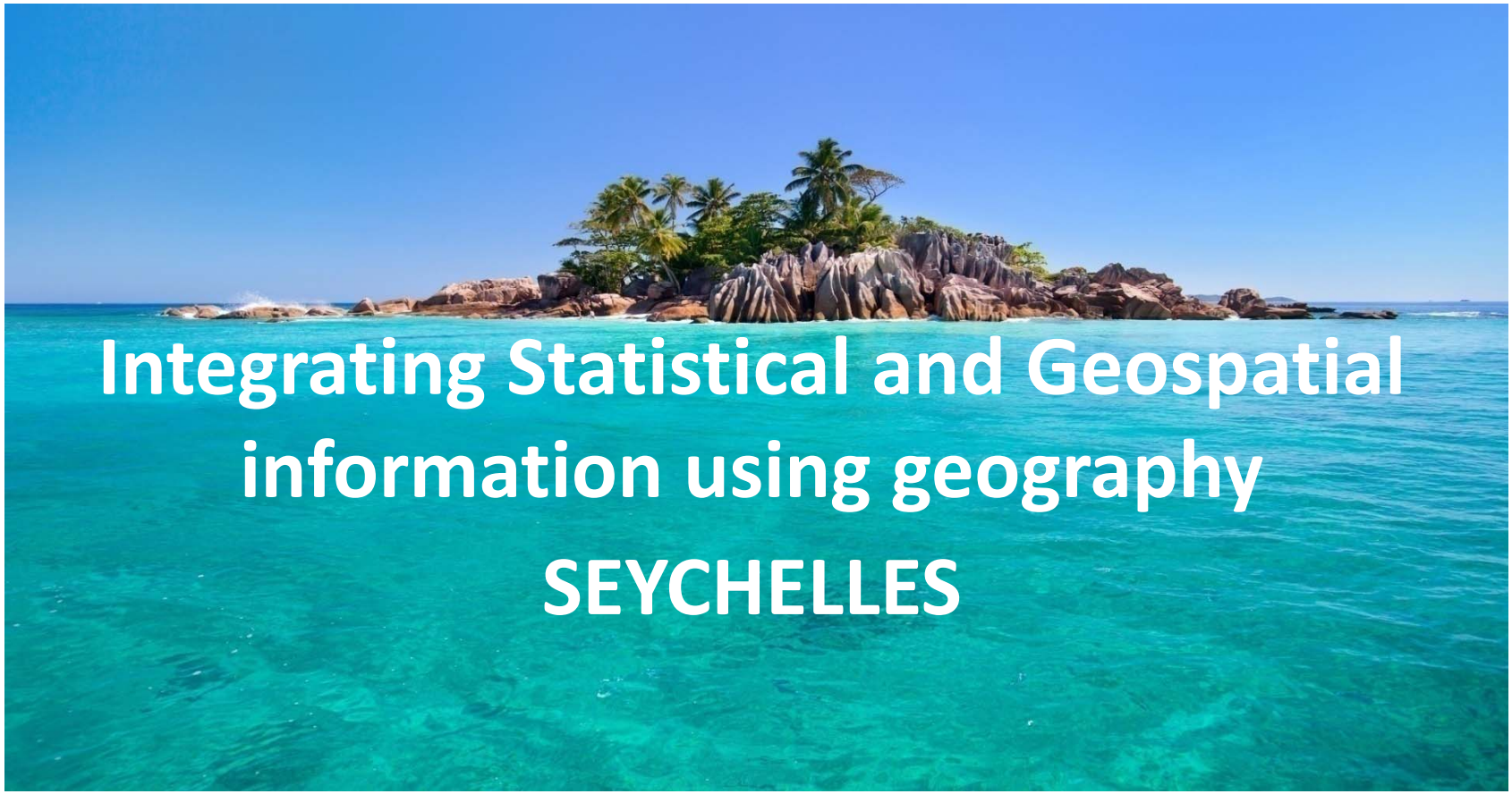


Integrating Statistical and Geospatial information using geography

SEYCHELLES

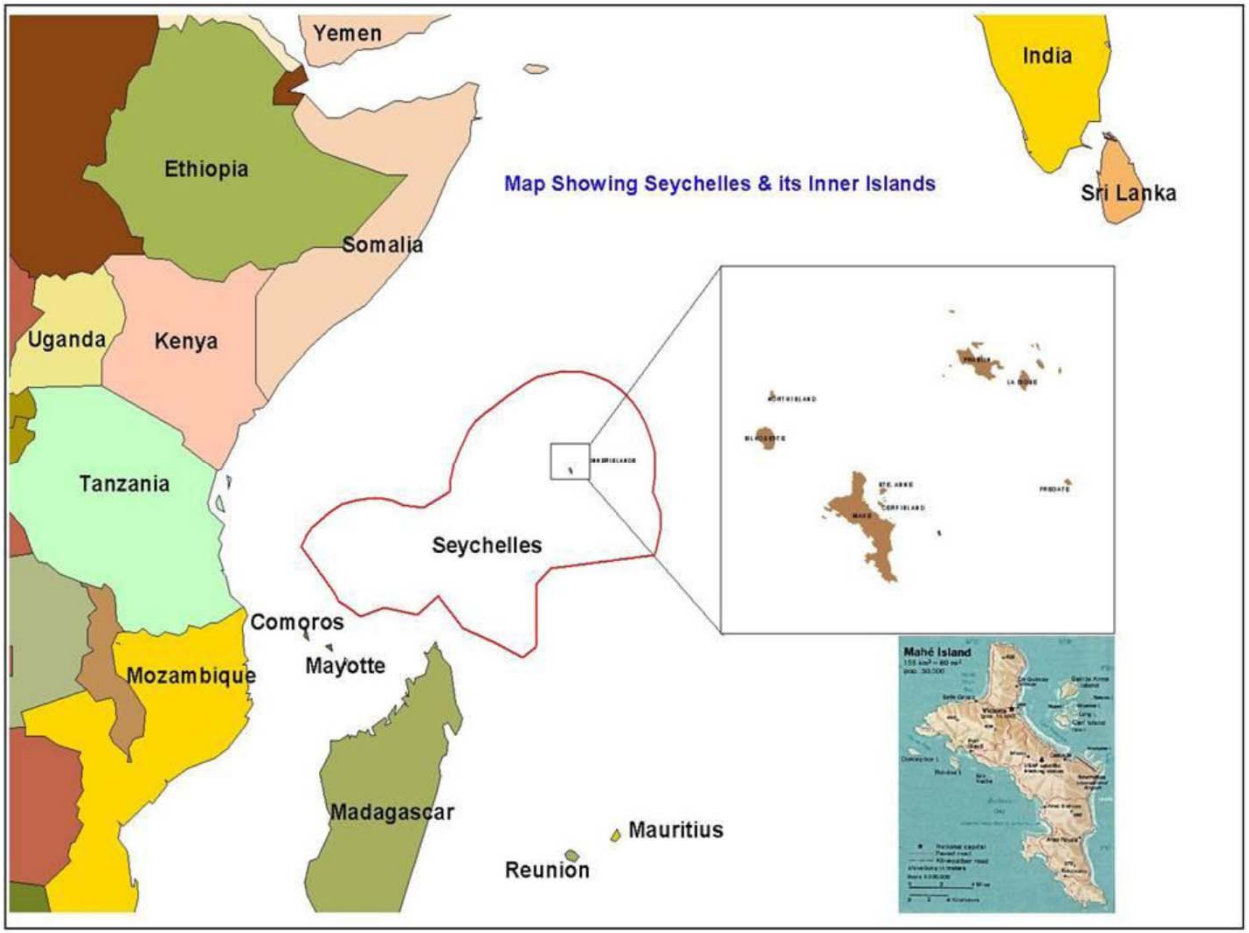
Presented at the International Workshop on Integrating Geospatial and Statistical Information

Beijing 9-12 June 2014

Therese Gopal

National Bureau of Statistics - *Seychelles*

Location Seychelles



Facts of Seychelles

- Comprises: 116 islands
- Land Area: 456 km^2
- Capital: Victoria
- Population: 89,949 (Mid 2013 estimate)
- Population Density: 197 persons per km^2
- Main Economic sectors: Tourism and Fisheries
- Monetary unit: Seychelles Rupee
- Languages spoken: English, French and Seychellois Creole

Overview

- The National Bureau of Statistics (NBS) is the official authority for collecting, processing and dissemination of statistical data in Seychelles

- Our **Vision** is:

  "Become the centre of excellence in production and dissemination of Statistics in Seychelles"

- Our **Mission** is:

  Continuously build and develop a coherent, reliable efficient and demand driven "National Statistical System" to encourage and support informed decision and policy making

- One of the primary objectives of NBS is to keep up with the rapid developments in all fields, especially in **GIS**

Brief History of the Cartography/GIS Unit

- The cartography unit was set up in 1993 in preparation for the 1994 census
- Seychelles Census Geography was created as maps were being considered crucial field tools for
    - Data Collection
    - Ensure complete enumeration in censuses
- In 1994, the Bureau received TA from UNFPA to conduct a comprehensive mapping exercise for the 3 main islands
- Using the existing Administrative structure of the 3 main islands, topographic maps at a scale of 1:2500 were used to demarcate:

    23 Electoral Boundaries

    400 Enumeration areas (created within the Electoral boundaries)

Brief History of the Cartography/GIS Unit

- Two years later we were introduced to GIS technology
- In 1996 the Canadian government assisted the Seychelles with training in GIS technology in order to build capacity in government agencies that wanted to use this technology in their organizations
- The NBS participated in the training and ATLAS GIS was the first software learnt
- The EA topographic maps that had been demarcated in 1993 were digitized and the Census geographic frame spatially captured.
- From 2002 to date the latest GIS software is used to produce digital EA maps
    - ArcMap 10.2
    - Quantum Gis 2.0

Seychelles Census Geography

- Integration of geographic data with statistical data requires
    - Proper geo referencing and coding of census data

- This is important for:
    - Data Collection
    - Data representation

- The Census geographic frame was created based on the administrative structure
    - It has Electoral districts and enumeration areas
    - EA's are demarcated within the electoral district boundaries
    - EA's are assigned with a unique code
    - Electoral districts are also coded

- Due to the rapid increase in population and households, the enumeration areas boundaries are continuously reviewed and re-demarcated.

Seychelles Census Geography cont..

Geocode

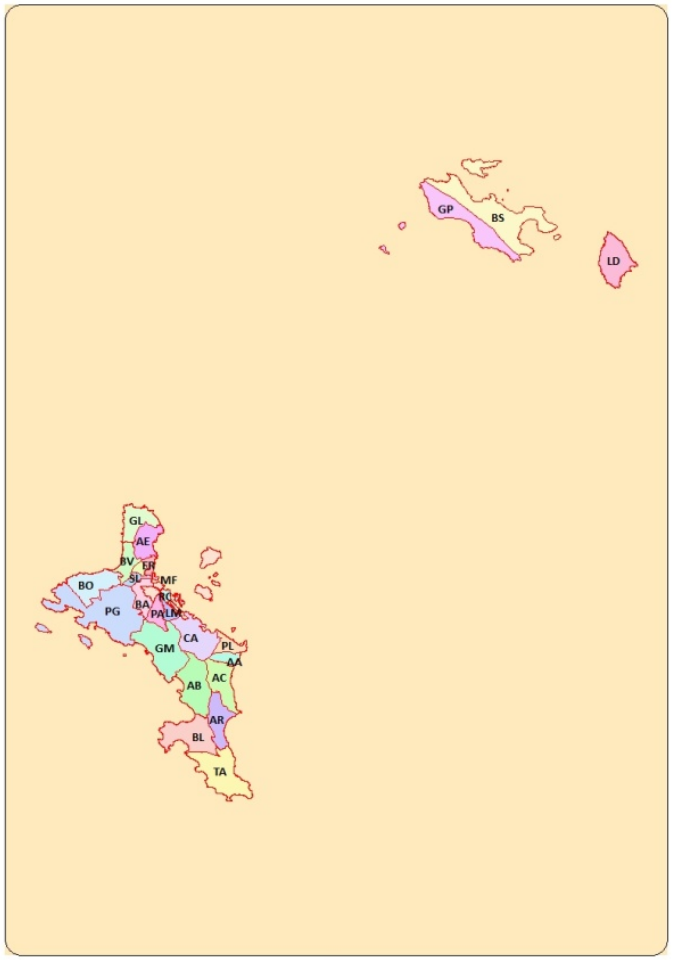
- The coding system of the EAs is of a hierarchical nature and comprise of four digits
    - The first and second digit represent the **district**
    - The last two digits represents the **EA** within the district

e.g. EA 4312

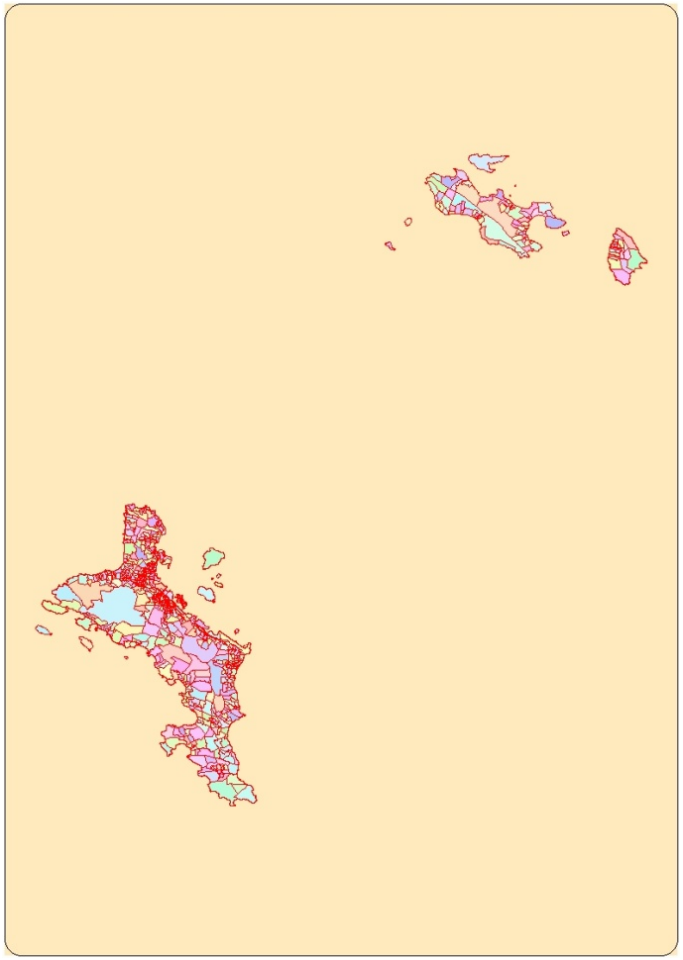
Number of Units - Census			
Census Year	Number of Electoral Districts	Number of Enumeration areas	Number of Households
1994	23	350	17,107
2002	25	479	20,993
2010	25	686	24,770

Seychelles Census Geography, Mahe, Praslin and La Digue, Census 2010

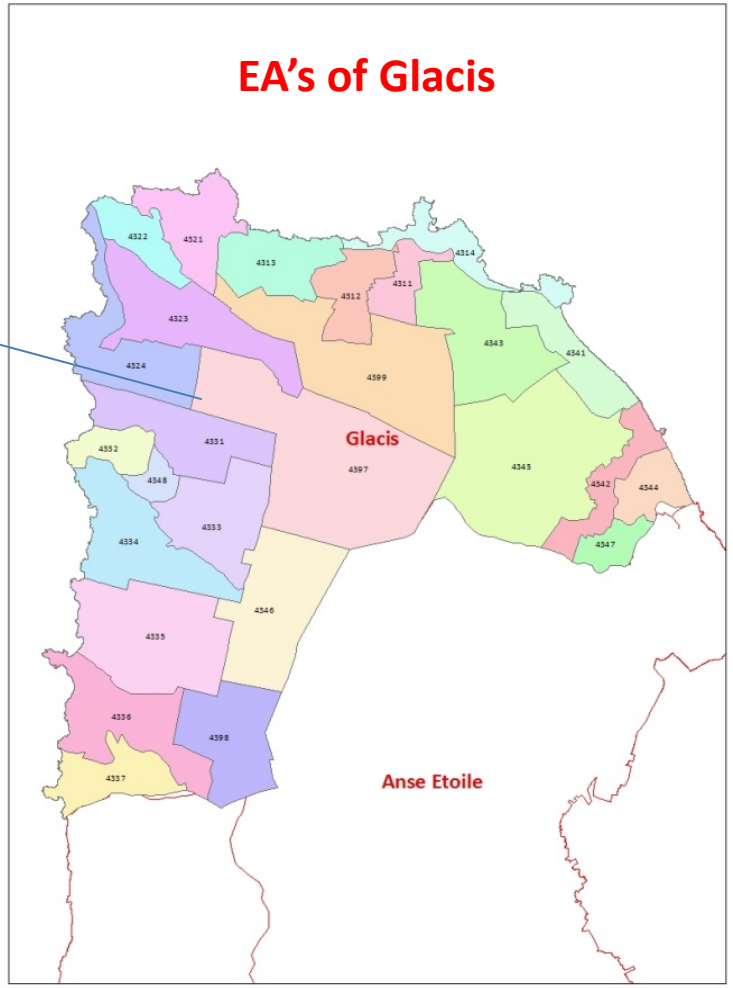
District



Enumeration area



Data unit Hierarchy, Glacis district - Census 2010



Why Spatially enabled statistics?

- Spatial Data is the Key for
  - Collection
  - Processing
  - Analysis & Dissemination of Statistical Data

- Spatial Analysis of Statistics
  - Transforms data into Information and
  - Presents users with results in a **concise** and **easy** to understand manner

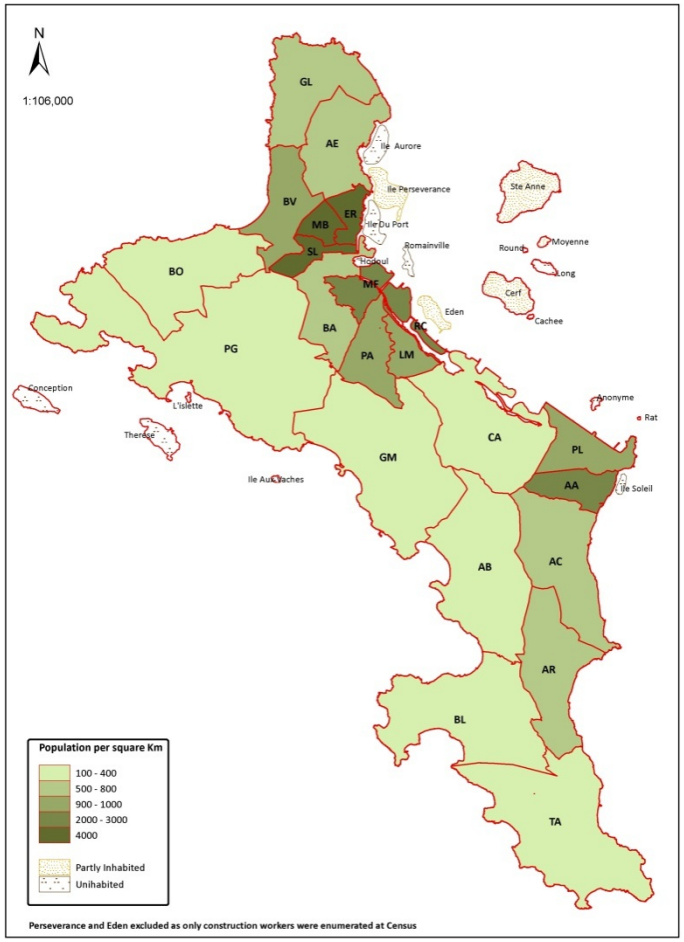
Benefits of linking geospatial data to statistics

Provides:

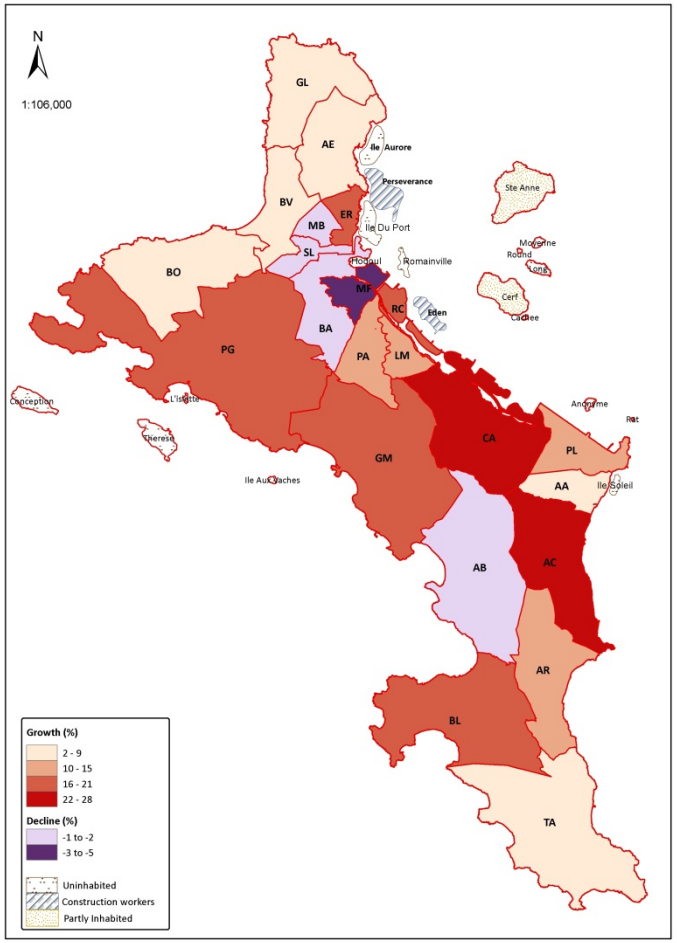
- Improved information for sound decision making and policies by the government, the commercial sector and research communities
- Ability to make comparisons on geographic areas
- More easily recognised patterns and trends presented in thematic maps

Thematic maps from Census Atlas 2010

Population Density, Mahe

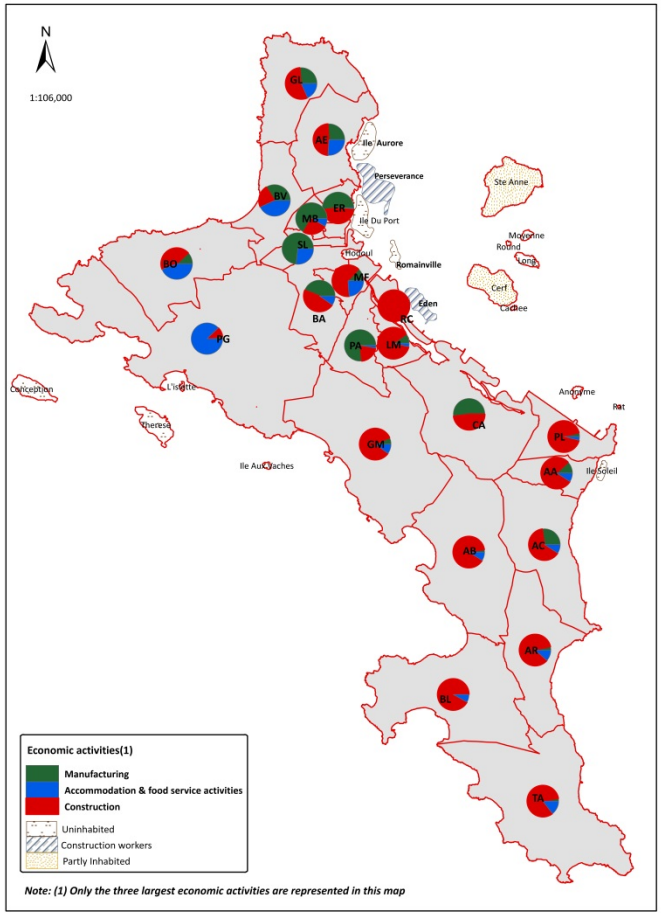


Intercensal Population Change, Mahe

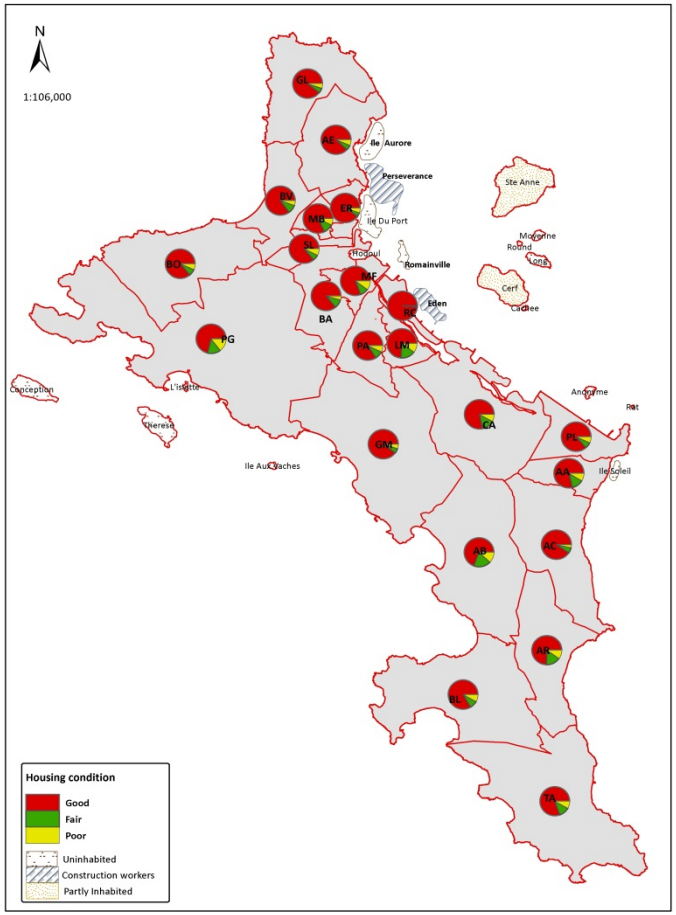


Thematic maps from Census Atlas 2010

Working Expatriate population by selected economic activities Mahe



Housing conditions of Mahe



Our Partners

- The Ministry of Land Use and Housing (MLUH)is the **lead** agency for geospatial data in Seychelles
- It is the custodian of Geographical datasets which includes:
  - topographic maps
  - orthophotos and,
  - other geographic layers
- Currently there is no Data Sharing policy with regards to GIS in Seychelles, and **NO** National Spatial Data Infrastructure **(NSDI**)
- This Ministry has recently launched a **WebGIS** service, through which the public can access land information and lodge applications for building permits
- The Ministry of Health, Ministry of Environment, Public Utilities Corporation also use GIS in their line of work

Future Plans of the NBS

- Conduct a mapping and house listing exercise for the three main islands in 2014/2015.
- The mapping exercise will serve as the basis for the update of the dwelling frame used to sample households for ongoing surveys.
- GPS devices will be used to capture the location of dwellings that are difficult to locate from the orthophotos.
- From this update, the dwelling frame GIS database will be populated.
- Adopt the web as part of the dissemination strategy through integration of interactive maps.

Conclusion

I would like to commend the UN Statistical Commission and GGIM on:

- Having recognized the need for NSOs to meet the challenges of managing and effectively integrate geospatial and statistical information.

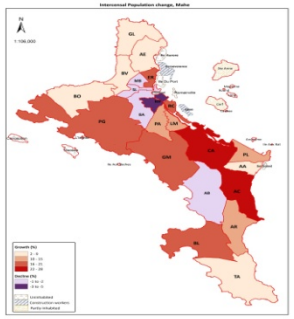
- Acknowledging the importance of integrating geospatial information with statistics and socio-economic data for the 2020 round of Censuses.

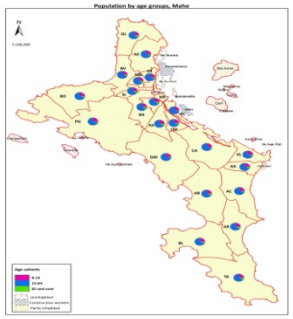
- The initiative to develop a global statistical-geospatial framework as a standard for the integration of statistical and geospatial information.

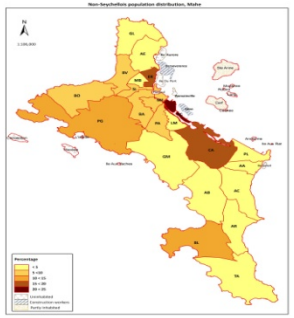
GIS day Exhibition

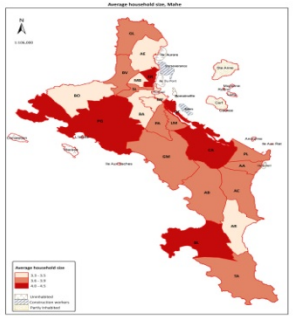
Presenting numerical data spatially using GIS

National Bureau of Statistics









"Discovering the World through GIS"
World GIS Day 20th November 2013


THANK YOU,
MERCI
SEYCHELLES