Integrating Statistical and Geospatial information using geography

SEYCHELLES

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Location Seychelles
Facts of Seychelles

• Comprises: 116 islands

• Land Area: 456 km²

• Capital: Victoria

• Population: 89,949 (Mid 2013 estimate)

• Population Density: 197 persons per km²

• Main Economic sectors: Tourism and Fisheries

• Monetary unit: Seychelles Rupee

• Languages spoken: English, French and Seychellois Creole
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
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.
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 represent the EA within the district
  e.g. EA 4312

<table>
<thead>
<tr>
<th>Census Year</th>
<th>Number of Electoral Districts</th>
<th>Number of Enumeration areas</th>
<th>Number of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994</td>
<td>23</td>
<td>350</td>
<td>17,107</td>
</tr>
<tr>
<td>2002</td>
<td>25</td>
<td>479</td>
<td>20,993</td>
</tr>
<tr>
<td>2010</td>
<td>25</td>
<td>686</td>
<td>24,770</td>
</tr>
</tbody>
</table>
Seychelles Census Geography, Mahe, Praslin and La Digue, Census 2010
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

Interensal Population Change, Mahe
Thematic maps from Census Atlas 2010

Working Expatriate population by selected economic activities Mahe

Housing conditions of Mahe

Note: (1) Only the three largest economic activities are represented in this map.
• 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

“Discovering the World through GIS”
World GIS Day 20th November 2013
THANK YOU, 
MERCI

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