

Keywords

Theme: Geospatial, platform, mesozones, socio-economic, employment, population.

Description

Abstract

The *mesoframs* are irregular, meso-scale zones that was developed as the primary component of what has become the **Geospatial Analysis Platform (GAP)**.

Purpose

The key focus of GAP is referring particularly to the “**how much is where?**” type of question – is mainly on *human/ economic activity and population variables* (such as volumes of economic activity or persons below the minimum living level) and derived indicators such as *demands on infrastructure and ecosystem services*. In order to also address relevant *explanatory questions* (e.g. why does this area seem to have the highest concentration of employment opportunities?) or *derived demand questions* (e.g. what are the cumulative human activity related demands for infrastructure and ecosystem services in this region?), the range of estimated mesozone indicators is extended via linkages with other domain-specific information systems (such as AGIS – the SA Agricultural Geo-referenced Information System), models and/or web-linked analysis services (planned to be a key feature of future GAP deployments).

Status of the data

The present dataset was updated in 2010 using dysemetric mapping methods.

Time period for which the data is relevant

The update of the data depends on user needs as well as the frequency and availability of data such as the census data.

Publication Information

The CSIR Build Environment Unit created the data set and related platform and in 2007 version 2 was released to the public.

For reference purposes the creation data of the dataset is Nov 2007.

Data storage and access information

| | |
|------------------------------|---|
| File name: | Meso_2010 |
| Type of data: | vector digital data |
| Location of the data: | \\ :PSS\Projects\..\Geospatial\GAP_project\Meso_2010.shp |
| Data processing environment: | Microsoft Windows Vista Version 6.1 (Build 7600) ; ESRI ArcCatalog |
| | 9.3.1.3000 |
| Size of the data: | 28.282 MB |
| Data transfer size: | 28.282 MB |
| Access constraints: | No constraints – CSIR BE need to be acknowledged upon using the data. |
| Use constraints: | No constraints |

Details about this document

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Standard name: FGDC Content Standards for Digital Geospatial Metadata

Standard version: FGDC-STD-001-1998

Time convention used in this document: local time

Metadata profiles defining additional information

ESRI Metadata Profile: <http://www.esri.com/metadata/esriprof80.html>

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Horizontal coordinate system

Projected coordinate system name: Africa_Albers_Equal_Area_Conic

Geographic coordinate system name: GCS_WGS_1984

Details

Map Projection Name: Albers Conical Equal Area

Standard Parallel: -18.000000

Standard Parallel: -32.000000

Longitude of Central Meridian: 24.000000

Latitude of Projection Origin: 0.000000

False Easting: 0.000000

False Northing: 0.000000

Horizontal Datum Name: D_WGS_1984

Ellipsoid Name: WGS_1984

Semi-major Axis: 6378137.000000

Denominator of Flattening Ratio: 298.257224

Bounding coordinates

Horizontal

In decimal degrees

West: 16.048265
East: 33.499903
North: -21.986354
South: -34.883275

In projected or local coordinates

Left: -733665.040591
Right: 876930.465075
Top: -2400192.515904
Bottom: -3807145.000000

Details for Meso_2010

Type of object: Feature Class
Number of records: 25001

Attributes

FID

Alias: FID
Data type: OID
Width: 4
Precision: 0
Scale: 0
Definition:

Shape

Alias: Shape
Data type: Geometry
Width: 0
Precision: 0
Scale: 0

AREA

Alias: AREA
Data type: Float
Width: 19
Number of decimals: 11

PERIMETER

Alias: PERIMETER
Data type: Float
Width: 19
Number of decimals: 11

FIELD NAMES:

| | |
|----------|-------------------------------|
| MESO_ID | ID number of zone |
| Area_TOT | Area of polygons |
| HH01 | Number of households per zone |
| Pop07 | Population per zone |
| GVA09 | GVA total for 2009 |
| S1 | GVA for sector 1 |
| s2 | GVA for sector 2 |
| S3 | GVA for sector 3 |
| S4 | GVA for sector 4 |
| S6 | GVA for sector 6 |
| S7 | GVA for sector 7 |
| S8 | GVA for sector 8 |
| S9 | GVA for sector 9 |
| S6_S8 | GVA for sector 6-8 |
| X | X-coordinate |
| Y | Y-coordinate |
| CODE | Code |
| EMP09_S1 | Employment for sector 1 |
| EMP09_S2 | Employment for sector 2 |
| EMP09_S3 | Employment for sector 3 |
| EMP09_S4 | Employment for sector 4 |
| EMP09_S6 | Employment for sector 6 |
| EMP09_S7 | Employment for sector 7 |
| EMP09_S8 | Employment for sector 8 |
| EMP09_S9 | Employment for sector 9 |
| Emp09 | Employment total for 2009 |
| EmpIndex | Employment index |
| PopIndex | Population index |

Data source

- Quantec 2009 employment figures at the Local Municipal (LM) level
- Quantec 2009 GVA figures per sector (nine sectors) for each LM

Proxy data

- 2009 Gross Value Add (GVA) per mesozone (refer to 2010-2011 PG report on process [add doc nr](#))

Dasymetric process

A standard process was followed to determine the employment totals for each of the following sectors:

- Primary sector
 - Agriculture, forestry and fishing
 - Mining and quarrying
- Secondary sector
 - Manufacturing
 - Electricity, gas and water
- Tertiary sector
 - Wholesale and retail trade, catering and accommodation
 - Transport, storage and communication
 - Finance, insurance, real estate and business services
 - Community, social and personal services; as well as general government

The GVA for each of these sectors was used as the proxy variable for employment. This was done by following the process shown in Figure 1. This involved the following steps:

1. Obtain the GVA for the sector in question at the LM level;
2. Obtain the employment figures per LM;
3. Calculate the ratio between GVA and employment, in essence the production value per individual for the sector;
4. Apply this ratio (as calculated above) to the GVA figures per mesozone, i.e. the data that was prepared in a previous process which yielded the GVA production per mesozone for each of the sectors as mentioned earlier.
5. The result is an approximation of the number of employed people per sector in each mesozone.

Note: This employment figure is indicative of employment at place of work and not place of residence as the GVA figures per mesozone are based on whether there is activity for that sector present in the specific mesozone, e.g. a mine or factory.

As mentioned earlier, the process was repeated for each relevant sector.

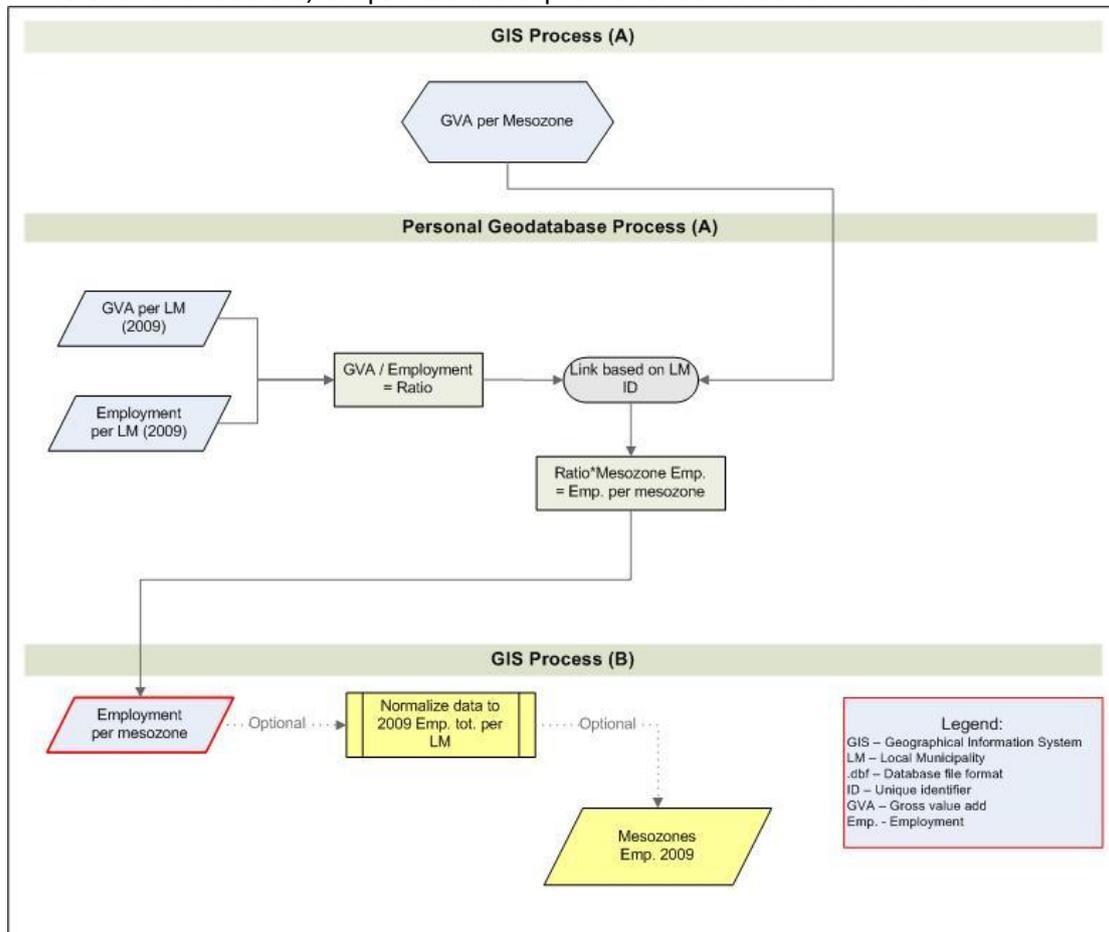


Figure 1: Dasyetric mapping – Employment per sector