

# **Describing Mexican Population: *GIS in census***

*Data dissemination and making decisions*

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# About INEGI

- ① **National Institute of Statistics and Geography (INEGI) is, from 2008, an autonomous institute in Technical and Managing matters.**
- ① **According to Mexican Statistical and Geographical Information Act, INEGI it is the responsible for making the Population and Housing Census every decade**
- ① **Being the responsible for the Statistics-Geography couple, it gives institute significant technical, operational and statistical data dissemination advantages.**



# Census 2010

- ① Traditional census.
- ① Field work in the Mexican 2010 Population and Housing Census was undertaken from May 31<sup>st</sup> to June 30<sup>th</sup>, 2010.
- ① 32 million of dwellings were visited and 112.3 million of inhabitants were enumerated.
- ① Interviews were held using printed forms.



# Census 2010

One important goal set for 2010 Census was to provide information with greatest opportunity without affecting the quality of data.

🏠 Preliminaries results : November 2010

🏠 Definitive results : March 2011.

Another important goal was the broad dissemination of census results to contribute to research and policy making



# SCINCE 2010

The SCINCE 2010 (“Sistema para la Consulta de información Censal”) was developed by INEGI in order to disseminate census information through a GIS system.

Similar systems were previously developed in the Institute for the 2000 census. The lowest geographical level available in the previous system was the municipality level.



# SCINCE 2010

## Two different versions:

- Web based
- Desktop

## Release dates:

- February 2012
- May 2012

## Available online with no cost and no registration





# Information content

## 624 indicators (Absolute and relative)

Theme	Indicators
Population	156
Fertility	3
Mortality	1
Migration	31
Indigenous language	40
Disability	28
Education	99
Work	90
Health coverage	12
Marital Status	24
Religion	8
Census households	50
Dwelling characteristics	80
Social development indexes	2
<b>Total</b>	<b>624</b>



# Geographical levels

- 🏠 Entity
- 🏠 Municipality
- 🏠 Metropolitan areas
- 🏠 Locality
- 🏠 AGEB\*
- 🏠 Block (urban areas)\*

\*Due to confidentiality issues or a very high frequency of zero some indicators are not presented for those levels.





# Features

Thematic Map



The screenshot displays the INEGI web application interface. At the top left is the INEGI logo and the text 'INSTITUTO NACIONAL DE ESTADÍSTICA Y GEOGRAFÍA México'. The main area features a thematic map of Mexico with various states shaded in different colors. Below the map is a data table with the following content:

Entidad federativa -- Población -- Población total		
Área geográfica	Valor del indicador	Ubicación
(01) Aguascalientes	1,184,996	Ver D
(02) Baja California	3,166,070	Ver D
(03) Baja California Sur	837,026	Ver D
(04) Campeche	822,441	Ver D

To the right of the map is a configuration panel with a red border, containing various settings for the thematic map, including indicators, aggregation levels, and filters. A red arrow labeled 'Configuration' points to this panel. Below the map and table is a 'Grafica' section with a line chart. At the bottom center, a green arrow labeled 'Data' points up towards the data table.

Configuration



# Features

## Mapping utilities



# Features

**SCINCE** Sistema para la Consulta de Información Censal 2010  
Versión 05/2012

**Población y vivienda**

Mapa temático

Indicador: Población total

Desagregación: Entidad federativa

Corte: Nacional

Calculo de nuevo Indicador

Para obtener un mapa temático, escriba el nombre del indicador o una palabra clave

Transparencia

Filtro de datos

Método de estratificación

**Univariado**

Cuantiles  Dalenius - Hodges

N.E.I.  Personalizado

Cuantiles relativos

Estratos 2

	Lim. Inf.	Lim. Sup.	Frec.
<input checked="" type="checkbox"/>	> 2,706,704.50	<= 15,175,862.00	16
<input checked="" type="checkbox"/>	>= 637,026.00	<= 2,706,704.50	16

Datos reservados por confidencialidad

Cociente indefinido

Sin viviendas y sin Población

Áreas sin viviendas particulares habitadas pero con residentes habituales

**Multivariado**

Componentes principales y Dalenius-Hodges

K-medias

Capas de información

Límites (Marco Geostatístico)

Localidades

Indicator and geographical level

Univariate stratification methods

Legend and stata limits

Multivariate stratification methods

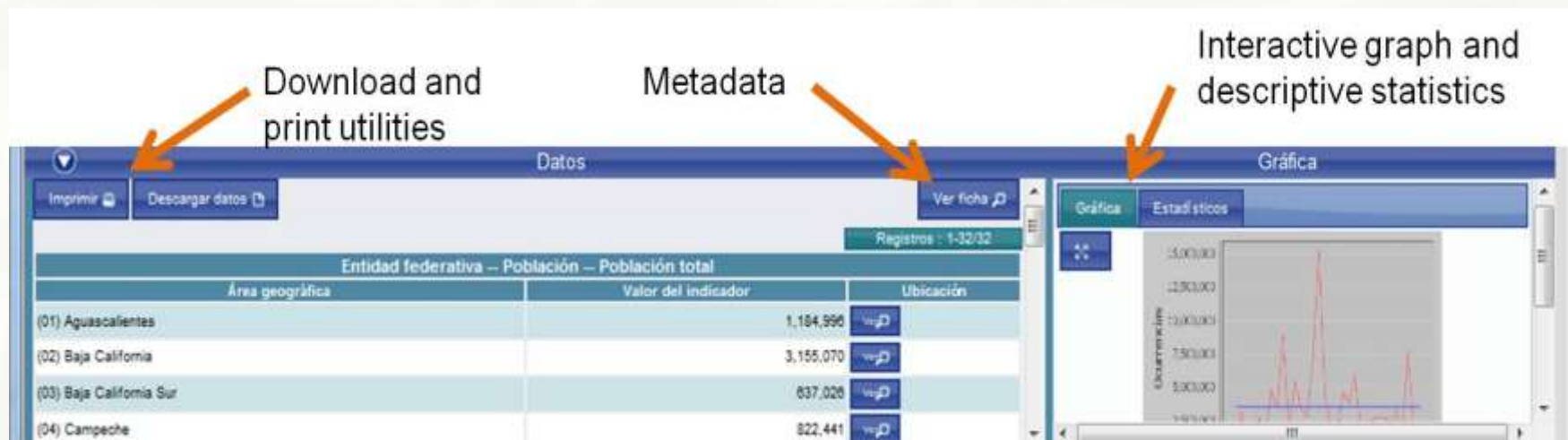
Additional layers





# Features

## Censo de Población



# Stratification

🏠 Stratification algorithms were developed using R

Univariate Methods
Quantiles
Dalenius-Hodges
Equal number of elements
Custom limits
Quantiles for the total
Multivariate Methods
Principal components and Dalenius-Hodges
K-Means



# Thematic map example

## Censo de Población



INSTITUTO NACIONAL  
DE ESTADÍSTICA Y GEOGRAFÍA México

SCINCE Sistema para la Consulta de  
Información Censal 2010  
Versión 09/2012



**Población y vivienda**

Buscador

Tipo de datos

Mapa temático

Indicador: Viviendas particu...da en el ámbito de la vivienda

Desagregación: Manzana urbana

Corte: Aguascalien...a, Paseos de Aguascalientes

Escriba el corte geográfico

Calculo de nuevo indicador

Para obtener un mapa temático, escriba el nombre del indicador o una palabra clave

Transparencia

Filtro de datos

Método de estratificación

**Univariado**

Cuantiles  Dalenius - Hodges

N.E.I.  Personalizado

Cuantiles relativos

Estratos 5

Lim. Inf.	Lim. Sup.	Frec.
> 27.20	<= 39.00	13



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# Platform

**SCINCE** | Sistema para la Consulta de Información Censal 2010

WEB Client

Web Map Service (WMS)



Mapping

Stratification



Accessibility



Download



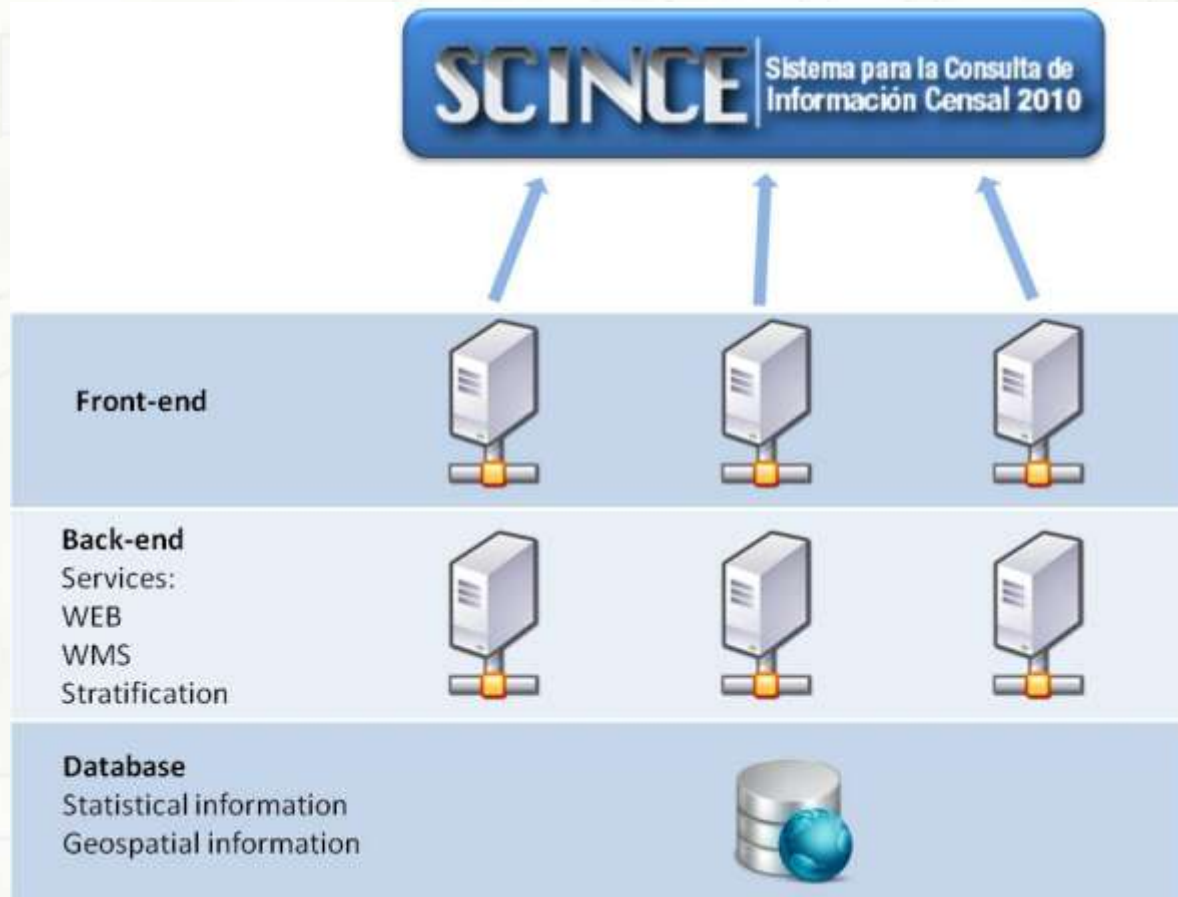
Open source applications

Homemade applications

Statistics and Geography Database



# Infraestructura



# Concluding remarks

- ① **SCINCE contributes importantly in the dissemination of census information**
- ① **It offers great advantages for the analysis and the decision making**
- ① **Major improvement is achieved by presenting information for all geographical levels, and without cost or registration**



# Concluding remarks

- 🏠 Efforts are to be done to enhance the use of GIS systems
- 🏠 Statistical stratification methods need to be understandable for non specialized users
- 🏠 Challenges are to be faced to incorporate administrative registers information



# Censo de Población

# y Vivienda



**THANK YOU FOR YOUR ATTENTION**

# 2010

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