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2011 Census in Portugal – A major improvement on Census cartography

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Lisbon, 12th October 2011



SUMMARY

- Introduction
- Main milestones on the 2011 Census
- Milestones achieved by now
- What 2011 Census cartography allows in the present and in the near future?





Introduction

According to **2008 UN Principles and Recommendations for Population and Housing Censuses, rev. 2:**

1.119. There is widespread recognition that it is important for national statistical agencies to develop a continuing cartographic capability to serve their specialized cartographic needs. Such a capability can make a major contribution to the population and housing census and other elements of the national statistical system. A continuing cartographic capability within the statistical agency can also contribute to the analysis and presentation of census results.

This “recognition” comes from the very early UN Population and Housing Censuses Recommendations.



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Introduction

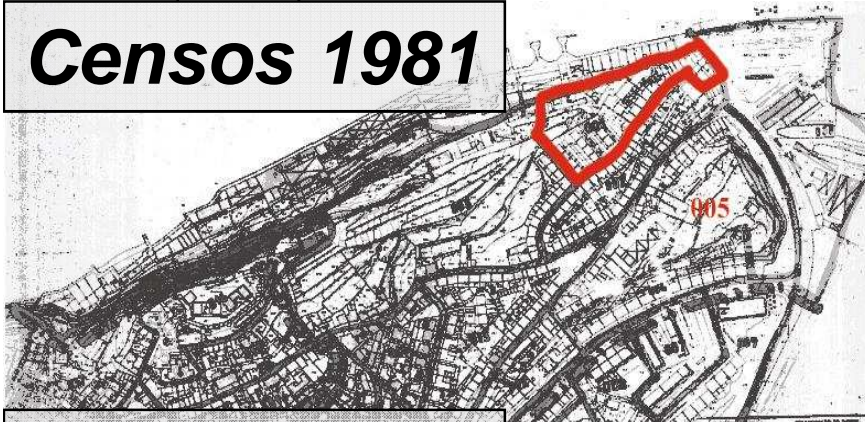
Statistics Portugal **has been developing** its cartographic section since the early 1981 census and for **the** 1991 census implemented an harmonized model of dividing each civil parish into statistical sections and subsections fully supported on the best available analogical cartography.

- 2001 census cartography was prepared with fully digitised cartography complying, **as much as possible**, the comparison with the geography of 1991.
- 2011 census **geography** was prepared with fully harmonized **digital** cartography which supports the administrative boundaries.

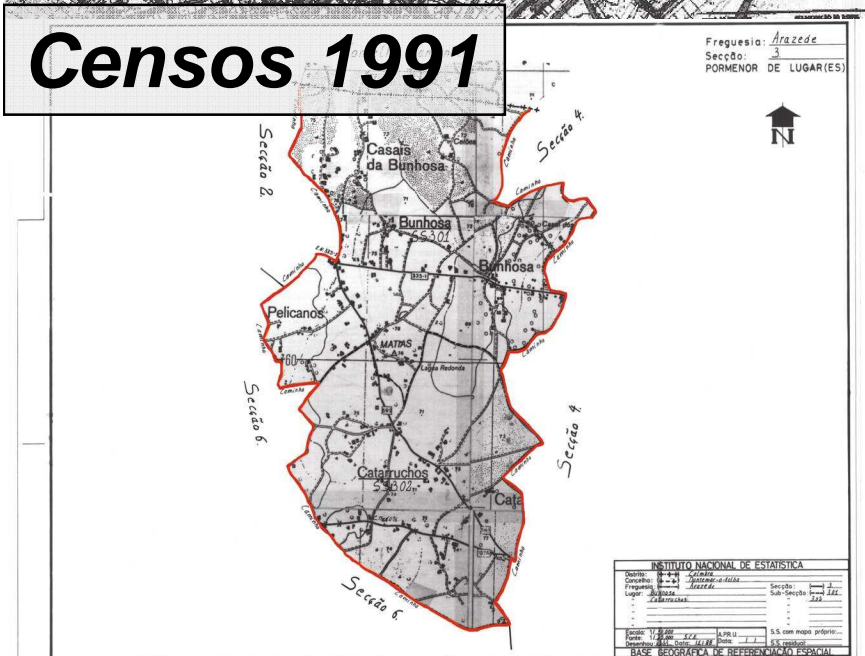


CENSUS GEOGRAPHY

Censos 1981



Censos 1991



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Censos 2001



Censos 2011



Census Maps over the years

Analogical cartography in 1981 and 1991

Digital cartography in 2001 and 2011



2011 Census - **Main milestones**

Carry out a population and housing censuses on the first quarter of 2011 complying with 4 main purposes/challenges:

- Produce and release accurate data within **3 phases**:
 - preliminary data until 4 months after the census day
 - provisional data until 11 months after the census day
 - final data on the 4th quarter of 2012
- Improve the alternative of internet response
- Improve a geo-coding system to collect, during the fieldwork, the geographic coordinates for each enumerated building
- For the future - Prepare the population and housing censuses transition to a new model, with a final report by the 4th quarter of 2012





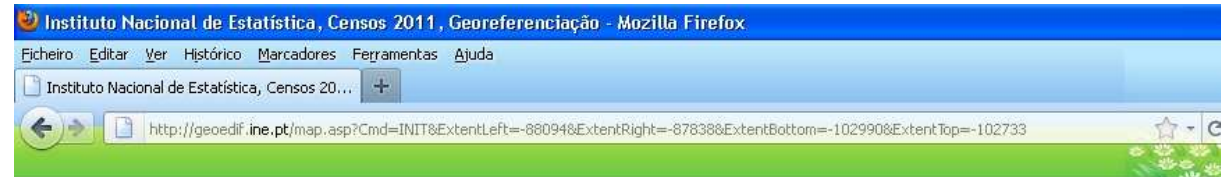
2011 Census - **Main milestones** (continuing)

How did we implement the main challenges:

- **3 experimental tests**: 2 tests in 2008 and 2009, mostly concerned on questionnaire design and internet response and a pilot survey in 2010
- **Census day**: 21st March, 2011
- **The release of data** was organized following the 2001 experience: preliminary data were produced on the basis of fieldwork control system (SCTC); provisional and final data may come from the final data processing system
- **Internet response system** was experimented during all the tests carried out
- **Geo-coding** for the local keying of building geographical coordinates was experimented during the pilot survey **with a very good outcome**
- **Model for census transition** has been based, up to now, on the access and analysis of the most important administrative registers, for future comparison with the final census data



How local geo-coding has been implemented in 2011 census?



CENSOS 2011

Georeferenciação de edifícios



- 1 statistical section
(contiguous territory belonging to a unique civil parish and containing about 300 housing units) containing 2 statistical subsections
(the lowest delimited area within a statistical section)



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How local geo-coding has been implemented in 2011 census?



- Enumerator accessed INE website within the geography address and started to insert the number of each building within the statistical subsection 01
- Geo-coding system is assuming the numerical sequence and indicates the next number for the next building (007)

Instituto Nacional de Estatística, Censos 2011, Georeferenciação - Mozilla Firefox

Ficheiro Editar Ver Histórico Marcadores Ferramentas Ajuda

Instituto Nacional de Estatística, Censos 20...

http://geoedif.ine.pt/map.asp?Cmd=identify&X=-87928,264&Y=-102758,7

CENSOS 2011 **Georeferenciação de edifícios**

MUNICÍPIO: LISBOA
FREGUESIA: NOSSA SENHORA DE FÁTIMA
SECCÃO: 110623030

Escala 1/2471
Indique uma escala: [ESCOLHA]
Zoom à subsecção: [ESCOLHA]

ADICIONAR EDIFÍCIO

BGR11	11062303001
LUG11DESIG	Lisboa
COORDENADA X	-87928,26
COORDENADA Y	-102758,7
DATA DE REGISTO	23-09-2011
CÓDIGO DE EDIFÍCIO	007

Adicionar »



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How local geo-coding has been implemented in 2011 census?



- Every enumerated building within the 2 statistical subsections are now identified with the respective number inserted over the picture of the respective building



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How local geo-coding has been implemented in 2011 census?

- 2011 census preliminary figures available at INE website for these 2 statistical subsections, since last July



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Main milestones – achieved by now



- **Preliminary results** have been released on 30th June 2011
- **Internet response** rate reached 50,5% of the potential respondents
- **Local geo-coding of building coordinates** accounts for 3.549.508 buildings which corresponds to 99,96% of total buildings enumerated. A first check on geo-coding quality of a group of 32% of the statistical sections indicates that 96,9% have a good quality, 3% need reassessment and 0,1% need careful reassessment
- Data of 8 **administrative registers** have been assessed and a first report on their “capacity” to replace a traditional census was delivered





What 2011 Census cartography allows in the present and in the near future?

Statistics Subsections / Buildings

2011 census data can be released to the level of the buildings geographical coordinates and census blocks (statistical subsection), if problems on statistical disclosure do not exist; in the previous censuses, since 1981, the statistical subsection was the lowest level for census data breakdown





What 2011 Census cartography allows in the present and in the near future?

- **Census data comparison**, between census 2011 and the previous ones, since 1981, can easily be done through a spatial intersection using the buildings geographical coordinates and the census blocks geography of each census year
- **Statistical grids** supported on buildings geography can be generated more accurately



- **Check and comparison of address registers** for statistical purposes can be matched on a more easy and precise way





- Thank you for your attention



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