

Infrastructure for Spatial Information in Europe	Definition of Annex Themes and Scope		
DT DS v3.0	D2.3 Definition of Annex Themes and scope	2008-03-18	Page 93 of 132

## 7.10 Population distribution – demography

### **Definition:**

(INSPIRE, 2007) Geographical distribution of people, including population characteristics and activity levels, aggregated by grid, region, administrative unit or other analytical unit.

### **Description:**

There is a long tradition in collecting demographic and economic/activity statistics. All geographical levels interested, includes municipal and intra-municipal levels. Common to have statistics with geographical breakdown on country level, regional/ county level and municipal level. In some countries also information on census districts. These last decades, the statistical offices have started producing demographic and socio-economic statistics in large urban areas with a reference to blocks of houses and to process these data with a GIS. In some countries, the methodology chosen refers to aggregation of location-based information (address/households) on a grid (e.g. 1x1 km or 0.1x0.1 km).

Includes a broad spectrum of information sources, such as regional statistics at EuroStat; other European and National data, Regional data and Local breakdowns. The theme may thematically be divided into several components. The Directive text points at broad groups of sub-themes

- population characteristics
- population/ human activity levels

Concerning population information, this will or can include total population, age: population figures for each year class or aggregated year classes (0-5, 6-15, 16-20, 21-30, 31-40, 41-50, 51-67, 68-80, over 81). It could also include gender, mortality, life expectancy, migration. Figures could be offered as yearly versions, one could also like to give information of changes over time, such as growth/reduction in population, e.g. last 2 years, last 5 years, last 10 years. It could also include details on average night and day figures for some of the components. The sub-theme of population could include socio-economic information about the population, such as number of households, rate of employment, education, income, households with children etc.

Themes relevant to local, regional and national statistics also includes topics such as resource exploitation, agricultural production and a variety of environmental themes. Concerning "activity levels" used in the definition of the theme, this is probably an inclusion of a theme being treated separately in the INSPIRE position paper – namely "economic activities/local statistics". Economic activities including production, consumption, stocks, income, employment: statistics referred to administrative units, grids, facilities, networks, addresses, monetary and physical units. Economic data on transport and traffic are classified here. In general, economic activities are described according to the NACE rev.1.1. The NACE is the official classification of economic activities in the European Union and covers all industries. Examples relating directly to the protection of the environment is given underneath:

- 23.30 (part) Processing of nuclear fuel
- 37.10 Recycling of metal waste and scrap
- 37.20 Recycling of non-metal waste and scrap
- 41.00 Collection, purification and distribution of water
- 51.57 Wholesale of waste and scrap
- 90.01 Collection and treatment of sewage
- 90.02 Collection and treatment of other waste
- 90.03 Sanitation, remediation and similar activities
- In other industries, Environmental protection activities and expenditure need additional data, as it is presented in the SERIEE handbook (CEPA), EuroStat 1994 (Version 2002).

Infrastructure for Spatial Information in Europe	Definition of Annex Themes and Scope		
DT DS v3.0	D2.3 Definition of Annex Themes and scope	2008-03-18	Page 94 of 132

Population distribution could also mean geographical aggregations of buildings into settlements, villages, townships, towns, cities. Data may be materialised as hierarchical settlement databases with details on population figures for geographical objects either **centre point location** or **area/settlement extent**. Population distribution may also be or functional or physical characterisation of built-up areas **within** a settlement area. One example of an overall functional zoning can be the distribution of CBD areas within a city (CBD=Central business district). Detailed area categorisation can be done, e.g. kind of apartment, flat, cooperative society, self-owned, house/villa, semi-detached house, terrace house, apartment block.

Disaggregating of statistics is a methodology for transforming data at a higher aggregation to lower aggregates based on models. The EEA European population base introduces a transformation of statistics from administrative regions to small grid cells by a model based on knowledge of population distribution – land cover. Figures are aggregated to grid cells, and may therefore be seen as within the definition of this theme.

Population censuses take place with a periodicity of e.g. 10 years. In between, administrative registers of civil state supply a regular flow of data used generally for presenting annual statistics. New trends in statistics will probably lead to abandon the national censuses of large countries for a rotating system based on regional censuses supplemented by a broader collection of data from administrative registers.

#### **Scope, use examples:**

The demand for local statistics has increased over time. For example, the national statistical offices commonly disseminate statistics by municipalities, blocks of houses or grids. The uses of local statistics are many, from the local, regional and national management of public services (education, health, environment, urban planning...) to the consulting companies in domains such as public works or market studies and the research in the socio-economic domain. Data themes of major importance are demography, production, economy, but also such as natural resources and a variety of environmental themes.

Needed within local to national governments, settlement and city development, health and education planning, school enrolment planning, risks assessment. Of major importance to integrated analysis for sectors or regions. Existing statistics covering long time series make demographic statistics an essential information. The present focus on eGovernment systems within all sectors and the general rapid changes towards including a spatial dimension in management activities and planning will probably boost the use of socio-economic data with a geographical reference. In order to prepare for the increasing user needs, it is expected that European and national providers disseminate information on relevant aggregation levels, with internationally agreed id's and on formats making it possible to link geometry and attributes.

Community policies: 6EAP, and all the policies in which the exposure of the population to a risk or harm is a concern as well as those where population increase or migration is a key driver.

Infrastructure for Spatial Information in Europe	Definition of Annex Themes and Scope		
DT DS v3.0	D2.3 Definition of Annex Themes and scope	2008-03-18	Page 95 of 132

### **Important feature types and attributes:**

The definition in the Directive specifies kinds of features relevant to demography: The definition includes the term "aggregated". DT anticipates that non-aggregated data about population is excluded. Probably therefore information in this theme does not refer to address level or point based location, e.g. of production activities. The mentioned examples of aggregation are by grid, region, administrative unit or other analytical unit.

Underneath is given examples of features, important attributes, however, can be very diverse and is generally referred to as socio-economic attributes. . Different variables can be relevant for different aggregation levels.

administrative unit, e.g. from the LAU2 level.

- id
- socio-economic attributes as mentioned above

grid, e.g. 1x1 km, 100x100m

- id
- socio-economic attributes as mentioned above

census districts

- id
- socio-economic attributes as mentioned above

small area statistics "free" regionalisation

- id
- socio-economic attributes as mentioned above

settlement – small settlement, village, block, township, town, city

- id
- socio-economic attributes as mentioned above

physical region/area within settlement

- category

functional region/area within settlement

- category

Can also give population figures at other regional aggregations, e.g. on water catchment level, being done in assessments being part of WFD work.

### **Links and overlaps with other themes:**

The thematic information in the form of attributes collections/tables can be linked to geometry datasets also addressed in other themes, such as geographical grid systems, administrative units and statistical units (census districts). Other themes may be more indirectly linked to the theme demography, as they can be used as an input parameter or geometry needed in the generation of an aggregated population dataset, such as the themes address, land cover and utility and government services

Infrastructure for Spatial Information in Europe	Definition of Annex Themes and Scope		
DT DS v3.0	D2.3 Definition of Annex Themes and scope	2008-03-18	Page 96 of 132

**Reference documents:**

Eurostat: Regional statistics

GISCO database

International agreements on reporting of socio-economic statistics

NACE rev.1.1.

Norwegian Mapping and Cadaster Authority: Feature catalogue and data product specification Norway

SERIEE handbook (CEPA) European commission/ EuroStat 2002: SERIEE: European System for the collection of economic information on the environment. Methods and nomenclature.

Statistics Norway database and map service:

[http://statbank.ssb.no/statistikkbanken/default\\_fr.asp?PLanguage=1](http://statbank.ssb.no/statistikkbanken/default_fr.asp?PLanguage=1)

<http://statbank.ssb.no/map/pximap.asp?pxfile=2006549121611571561Kostra2KEKommune.px&TempPath=/statistikkbanken/temp/&language=1>

Tandem project reports