SAMPLE DELIVERABLE 23

Software application - final
Software description and installation guide

http://lab.sample-project.eu/
(Deliverable web address)

Grant agreement No:	SSH - CT - 2007 – 217565
Project Acronym:	SAMPLE
Project Full title:	Small Area Methods for Poverty and Living Conditions Estimates
Funding Scheme:	Collaborative Project - Small or medium scale focused research project
Deliverable n.	23
Deliverable name:	Software application final – Software description and installation guide
WP no.:	4
Lead beneficiary:	8
Nature:	Software
Dissemination level:	PU
Due delivery date from Annex I:	31/03/2011
Actual delivery date:	20/05/2011
Project co-ordinator name:	Mrs. Monica Pratesi
Title:	Associate Professor of Statistics - University of Pisa
Organization:	Department of Statistics and Mathematics Applied
	to Economics of the University of Pisa (UNIPI-DSMAE)
Tel:	+39-050-2216252, +39-050-2216492
Fax:	+39-050-2216375
E-mail:	coordinator@sample-project.eu
Project website address:	www.sample-project.eu

SAMPLE DELIVERABLE 23

Software application - final

Software description and installation guide

Project Acronym:	SAMPLE
Project Full title:	Small Area Methods for Poverty and Living Conditions Estimates
Grant agreement No:	SSH - CT - 2007 – 217565
WP no:	4
Deliverable n.	23
Document title:	Software application final – Software description and installation guide
Status:	Final
Editors:	8-SR
Authors:	Moreno Toigo (m.toigo@simurgricerche.it) - SR
	Massimiliano Alù (m.alu@simurgricerche.it) - SR
	Massimiliano Passaglia (m.passaglia@simurgricerche.it) - SR

Description of the deliverable 23

Software application - final
Software description and installation guide

Summary

1 Introduction

This paper describes the software application developed in SAMPLE project (WP4). The software is open source and it could be used to manage data and to monitor selected social indicators at LAU1 and LAU2 level by local authorities and stakeholders. It is designed to provide an easy-to-use tools to engage people against social exclusion through data and indicators rich visualisation and discussion. The long-term outcome of this tools is to improve the understanding of the social exclusion processes at a local level by all people working in the field of social policy making. This documents describes the beta version of the software application. It summarize the main features of the software and the technologies used to develop it. This documents describes the deliverable 23, the final version of the software application developed in WP4. It summarize the main features of the software and the technologies used to develop it.

This deliverable includes also the installation guide (see Section. 4).

To download the installation package see: http://www.sample-project.eu

To try the application: http://lab.sample-project.eu (user: test, password: test). This version is customized for actual use by Pisa Province Observatory on poverty and social exclusion (see deliverable 24). Therefore some parts of the site is written in italian.

# 2 Overview and background

2.1 WP objectives

The aim of WP4 is to develop a software application whose purpose is to give unskilled users (i.e. local policy makers, social workers from public and private sector) an easy-to-use tool for managing data and indicators at LAU1 and LAU2 level. The software objectives are:

- give a concrete application of SAMPLE results;
- support policy-making and implementation at the local level;
- contribute to the public debate by creating information-rich, easy to use, easy-to-understand graphics (expressing the meaning of data without hiding their complexity);
- share knowledge and improve local capabilities.

The software allows to store and update indicators from administrative data locally available (see WP 3 and WP 1.4), to estimate Laeken indicators using models based on small area methodology (see WP3, task 3.3), to disseminate results between local stakeholders, promoting their capabilities in fighting and preventing social exclusion.

Figure 1:   SAMPLE software features
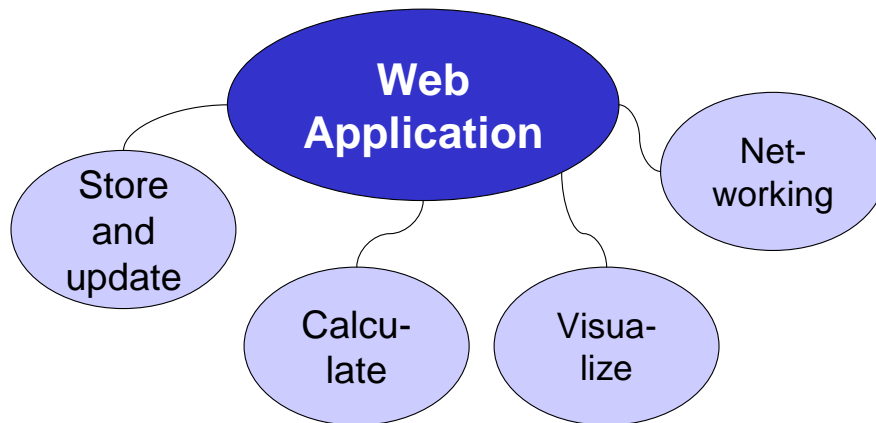
2.2   Connections with other WPs

The activity of WP4 depends strictly from the results of previous WPs, mainly WP3. The methodologies and the algorithms developed in WP1, WP2 and WP3 have been standardized and some integrated in the final application. There also a strict connection with the WP6 (Dissemination) because the software is an instrument to share and disseminate SAMPLE results and methodologies (Figure 1).
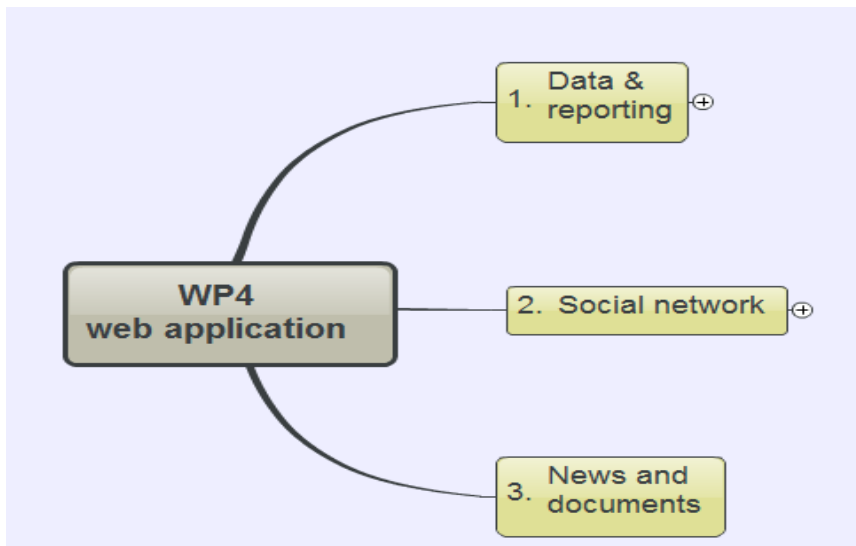
Figure 2: WP4 connections
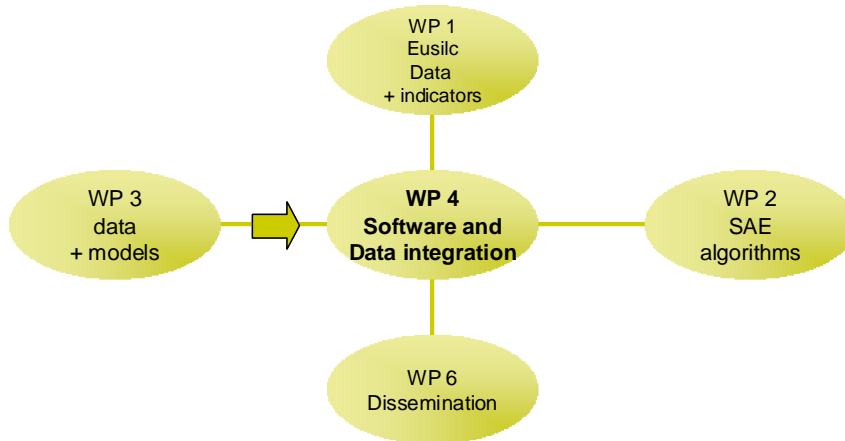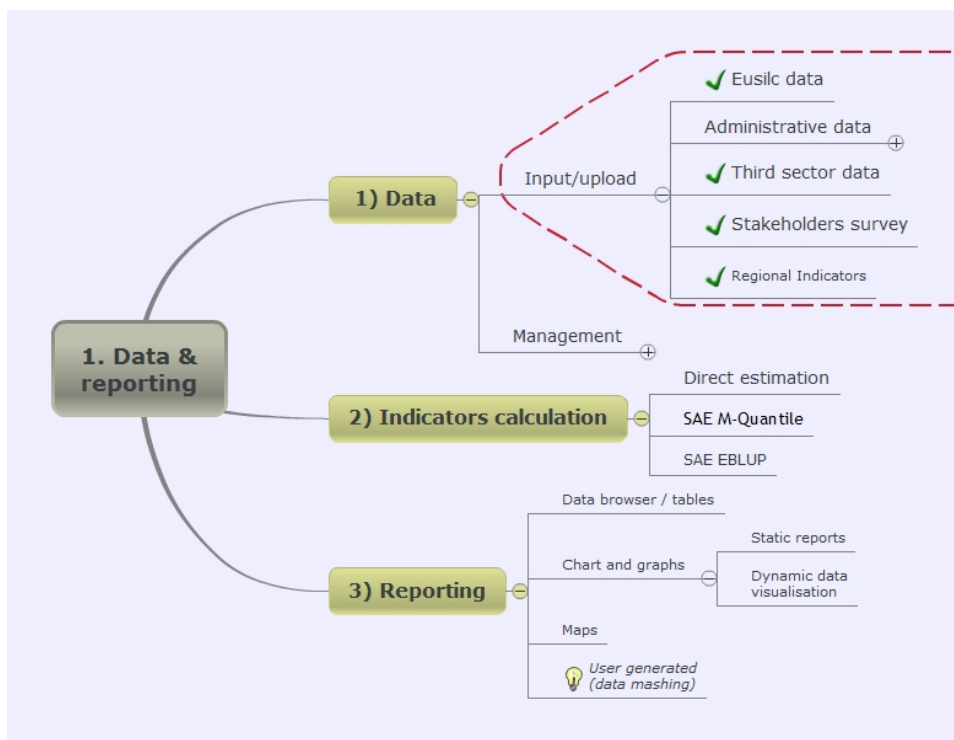
2.3   The application: an overview

The web application (portal) aims to be the entry point for social inclusion activities in the Province of Pisa. It has three main parts, or modules: the SAMPLE data management and reporting core, a set of social networking tools plus a documentation and news section.

Figure 3: Application modules

The web application, with special focus on its reporting module, has been planned following the most recent trends and best practices in the field of statistical data representation. We took into account the debate started by the "Open Government Initiative" by President Obama's administration in January 2009 (cfr. www.data.gov, http://sunlightlabs.com).

Figure 4: Application module 1: Data & reporting (details)


The figure above shows an overview of the first module of the application, the core of the system; the data and reporting module. It's the engine of the application, allowing to the admnistrators of the Observatory to update and manage all the data processed by the software.

A slick web interface allow administrative users to easily load raw statistical data (Eusilc, administrative data and others), and apply R engine calculations by selecting a few input parameters. We implement the methodologies and the R routines developed in WP 3. We obtain two kinds of indicators: 1) local indicators for social planning (Social Observatories Regional Network indicators and Statistical Dossier 2) direct and model estimates of main Laeken indicators from EUSILC survey.

The calculated data (indicators) are saved on a MySQL database. This database is exposed as a web service with a Google *wire protocol* compliant data source, available for everyone to query it. The recordset served by this data source is extracted at runtime from Sample Application's database. The data are available 24/7 for people to reuse, share, discuss.

Figure 5: Application module 1: communicating with Google APIs
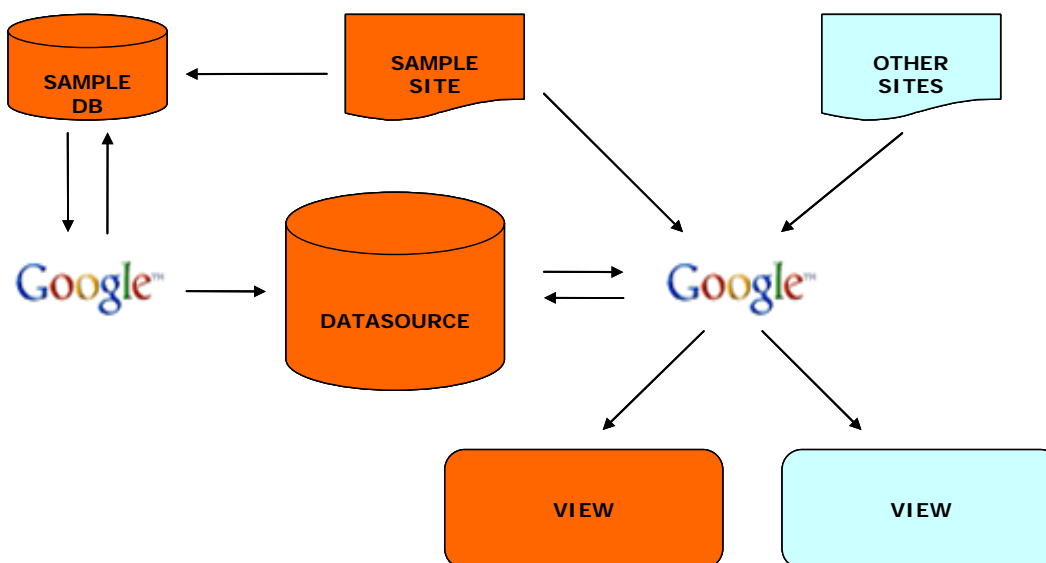
As for the data visualization we use Google tools to reach the most widespread audience: Google Visualization APIs allow embedding interactive charts, graphs or other graphics on any web page, easily, even by non skilled and non technical users.

Using the available visualization applications, the general public is able to create reports and dashboards based on SAMPLE database.

On the front-end, our portal application itself is using these technologies: we show our data in interactive graphic visualizations made using the same visualization APIs.

2.4   Potential users and social networking tools

The "social" side of the application is very important. Instead of implementing an unidirectional communication, we tried to let people participate in building the portal and creating information themselves. The application is based upon a social networking tool, to build upon the involvement and collaboration of local stakeholders. In this perspective, we primarily asked their interest to take an active role in the building of the web portal.

The potential users have been identified during the project development, mainly in WP 1.4 and WP 3.2. Together with PP-UROPS, we have identified and involved the following categories:

- Health's Societies;

- Provincial Coordination of Voluntary associations,

- Provincial Coordination of Social Cooperatives and of Social Promotion Associations; Poverty Associations;

- Immigrants associations;

- Operators of offices that perform actions to fight back poverty (house offices, social services, labour unions);

- Caritas' counselling centres.

A survey (online questionnaire) has been carried upon local stakeholders by PP-UROPS: approx. 700 people involved by various stages in poverty and social exclusion have been asked about their opinion on the construction of an Observation System to monitor poverty, vulnerability and social exclusion. We heard the stakeholders' point of view about the best tools to promote the exchange of information on the topic. Some of the respondents agreed to spend some time to test the platform while still in beta. The web application structure and content have been tailored after these suggestions. The testing phase, involving 47 stakeholders which have said to be interested and available, has been deployed between september 2010 and february 2011. For more details see WP1, task 1.4 and WP3 reports.

Website registered users are able to:

- create their own interest groups and blogs inside the portal

- communicate with microblogging tools (à la Twitter)

- share documentation with team (group) mates

- upload publicly available documentation

- discuss and comment (almost) every piece of content (news, topics, graphics and so on..)

Within these foundations, a version two of the platform could allow users to create their own data mashups straight inside the application. Even in this first version, people is able to use third party visualization tools like the above mentioned ones.

When Italy too will adopt a clear policy for open government and open data access, SAMPLE raw data could be made available to the public. Right now there is a number of attribution and privacy related issues preventing us to store and let people get access to this kind of data.

2.5   Raw data and indicators database design

The SAMPLE application uses three kinds of datasets:

- EUSILC micro-data;
- Census 2001 data;
- Indicators from Statistical Dossier for Social planning from Pisa Province;
- Social and health planning indicators developed in the Regional Network of Social Observatory;

Figure 6: SAMPLE software database schema
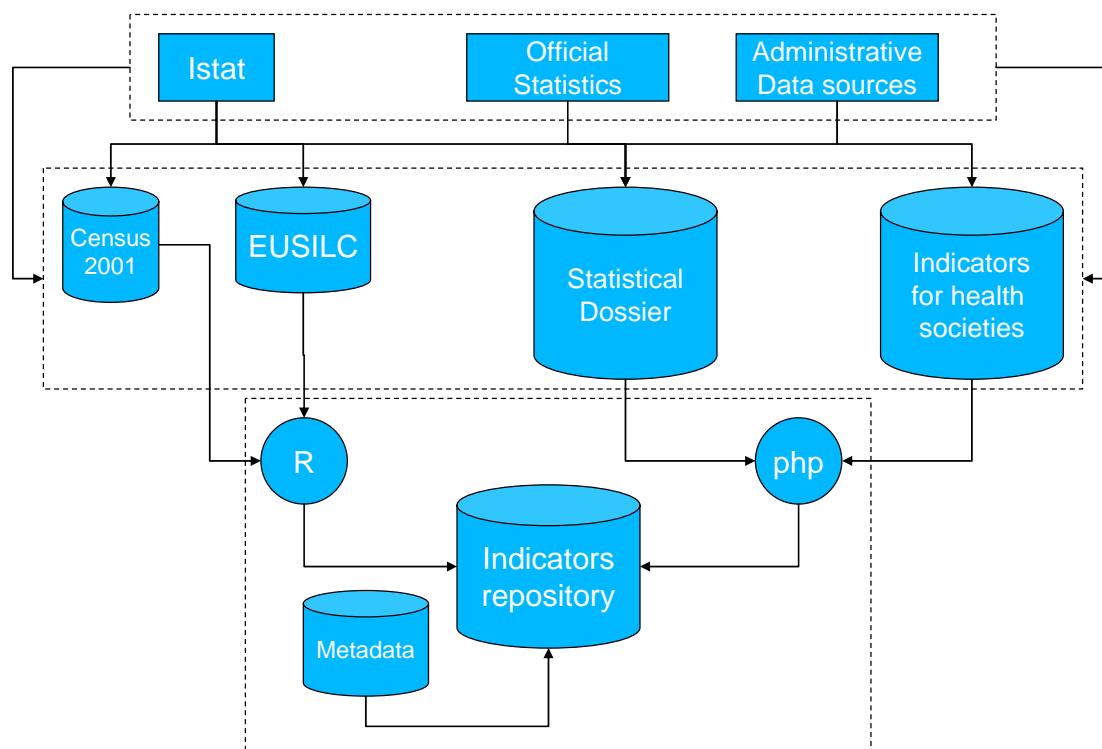
The indicators' database has been planned taking into account the Eurostat standard concerning metadata, defining a simplified version of SDMX framework. We are defining also the XML schemas for publishing data with DSLP (Dataset Publishing Language) used by Google Public Data Explorer.

These data are elaborated and saved in our repository in a given format, and are used as a source for visualisations and for users interactions.

2.6   R engine

EUSILC data are used to calculate the main Laeken indicators via R routine for direct estimates. We experimented the implementation of model estimates of some indicators by small area models.

All the remaining raw indicators in our repository will be uploaded via custom php code.

The R engine implementation is maybe the most original part of the software. Here the academic research outcomes (the SAE models) meet the local policy makers needs allowing an easy way to produce relevant and robust statistics for an unplanned domain (the provinces and the Health Societies areas).

A slick web interface allows administrative users to easily load raw data (EUSILC standard files) and apply R (ar) engine calculations by selecting a few input parameters. The software implements the methodologies and the R routines developed in SAMPLE (WP1, WP2 and WP3).

We estimate the indicators by: direct estimators by using EU-SILC data; small area methods by using EU-SILC data and Census 2001 data. Currently the software uses linear mixed and M-quantile models for SAE estimation of mean equivalized income, head count ratio, poverty gap. M-quantile models allow for estimating also the small area quantiles.

The software can automatically calculate good estimates for poverty indicators at provincial level (LAU1) and also for each Health Societies, and it can be applied to upcoming waves of EUSILC, because it's able to process the standard EUSILC files.

2.7   News and Documentation

Apart from data gathered within Sample project, the web application can be also a repository for collecting various documentation, other statistics and news of stakeholders' interest.

Most information are open to the general public for viewing and downloading:

- statistics and indicators
- official programming acts and regulations
- useful links and resources
- registered users "open" discussions

3 Technical aspects

The SAMPLE website is made of three areas:

1) a **public area** - every user can view its contents

2) a **registered users area**. Access to the latter is limited to registered users only, with a valid user account.

3) **an administrative area**

Anonymous users can see most of website contents, yet they won't be able to interact with other community users nor to post comments, create content and so on.

The website primary goal is to make available with an easy interface a rich set of data, mainly related to poverty indicators involving the Province of Pisa.

By implementing an integration with Google Visualizations, the portal .

3.1   The basic framework

The whole software application is built on top of *open source* **Drupal** platform (currently we are using version 6.17, with a few contributed modules - activity, guestbook, messaging, notifications, organic groups, tinymce, user relationships, userloginbar - and some more custom modules strictly related to SAMPLE purposes).

Drupal, often described as a "content management system" (CMS), is also a "content management framework" (CMF). In other words, unlike a typical CMS, it is geared more towards configurability and customization. It is very flexible, widely used, and its large user base made it an excellent choice for the foundation our application.

3.2   User registration

Users can obtain credentials to the Sample website via a simple registration form, choosing to join one of two default communities (Institutional and Non-Institutional Stakeholders).

3.3   Charts and tables

The bulk of public content is located in two **Data Visualization** main sections, showing **tabular** and **charts** data representations.

For each section there is a wizard driving users to narrow down the dataset whom the visualizations are applied to.
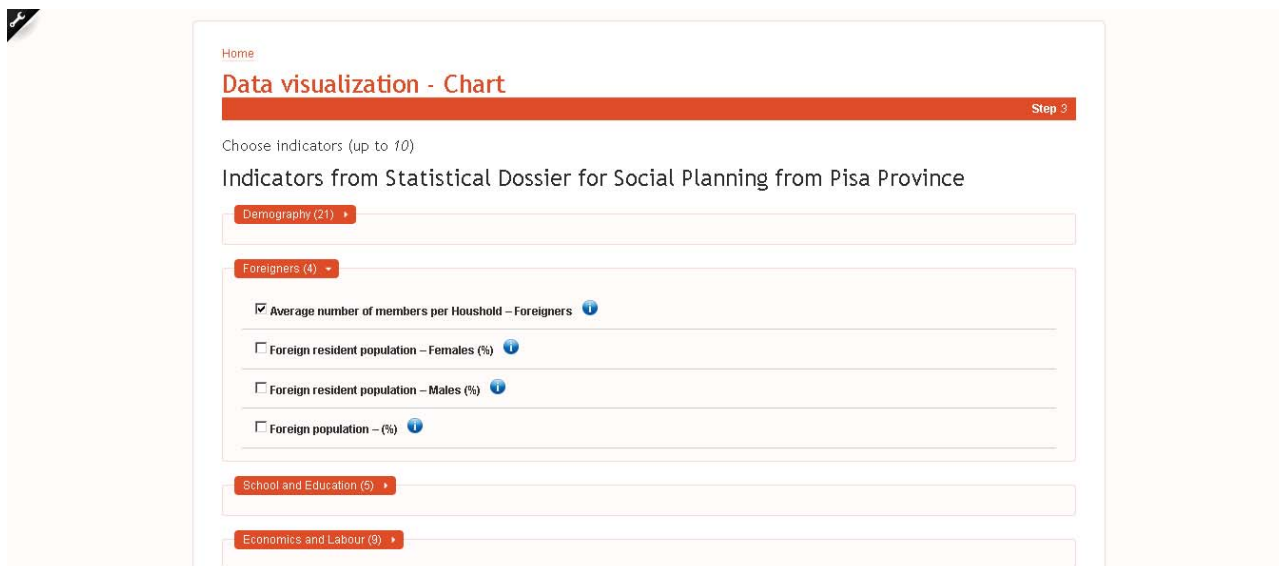
The **table view** lets users parse data in a tabular fashion, with some very useful options for copying rows to clipboard, exporting data tables in Excel and converting them to PDF.

Nome	2002	2003	2004	2005	2006	2007	2008	2009
Bientina	51.6	54.7	52.6	48.4	48.5	44.8	44.9	42
Buti	58	56.4	56.2	51.2	49.2	49.6	50.5	50.9
Calci	41.4	43.6	44.6	45.2	46.2	45.2	42.7	41.7
Calcinaia	50	51.4	52	53.3	50	48.9	48.4	48.7

The **chart display** is implementing Google's motion charts to give an effective, visually appealing representation of administrative, demographic, social and other data.

Data visualization - Chart

Step *5c*

- **Dataset**: Indicators from Statistical Dossier for Social Planning from Pisa Province
- **Area type**: Comune
- **State**: Pisa

View dataset
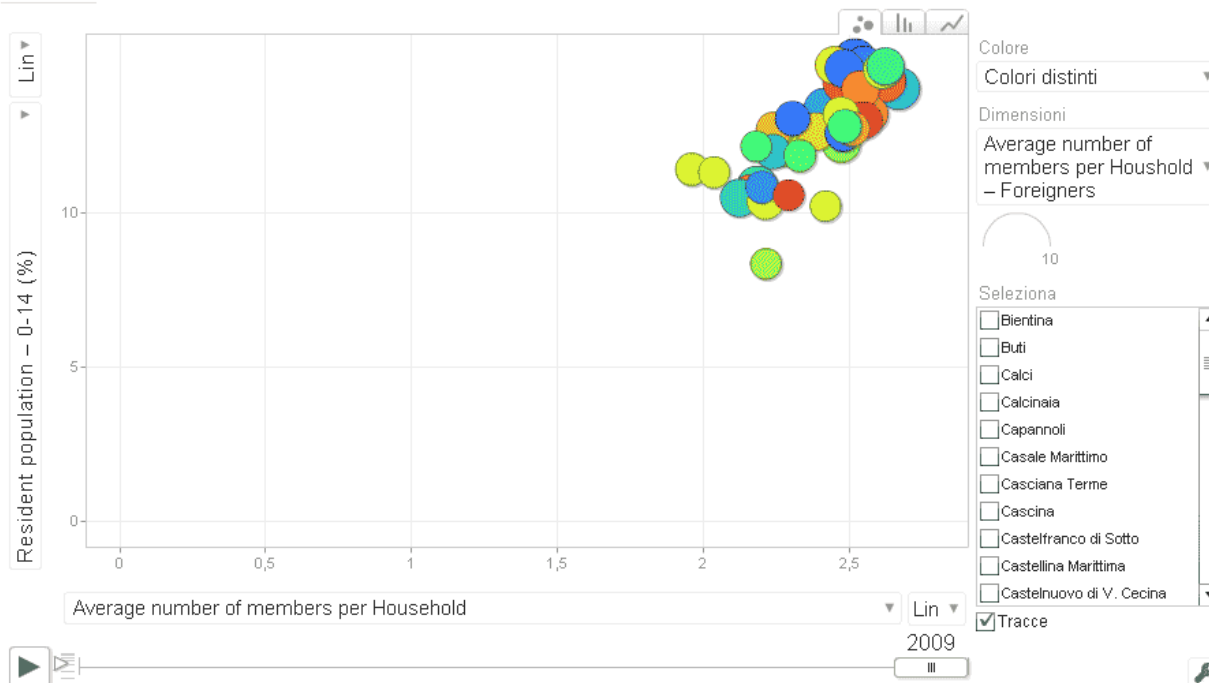
3.4   User roles and permissions

The application has granular user privileges. By default, the Drupal has two usertypes (roles), "**anonymous user**" and "**authenticated user**". We created three more usertypes: "**Contributors**", "**Moderators**", and "**Power contributors**", having different access levels and different privileges.

Anonymous users can access only public content, and cannot be involved in any way in the website activities.

Authenticated role is given to users self-registering from the website. Above all, **admin** role grants full privileges to website administration.

(To manage users, go to Administer > User management, where it's possibile to create and edit user and user permission levels.)

Not logged-in users

Use of the website is limited to viewing the different areas and public content (articles, news). In addition, it is possible to view the **Social Networking** area in read-only mode, and view statistical data and graphics using Google technology (Sample engine). As for the Social Networking tools, the following subsections are available as shown in Fig. 5:

- Blogs
- Forums
- Groups
- Guestbooks

Custom **Sample engine** module shows an intro text, then clicking on Graphics users can access indicators visualizations.

3.5   Social networking tools

Logged-in users may of course browse public content. As for every other Social Network platform, moreover, they can interact with the community using the following tools:

- Blogs
- Forums
- Groups
- Recent posts
- Feed aggregator
- Comments

Home

Forums

Post new Forum topic

Forum	Topics	Posts
COMMUNITY FORUMS		
5x1000 5x1000	1	1
Collaborate! Cooperate with local volunteers associations	1	1

Basing on role settings, administrators can choose if comments and answers regarding every node must be approved first by a moderator before being publicly viewable.

Groups   My groups   Group activity

Groups

Search for a group by name

Contains ▼   Apply

Group	Description	Manager	Posts	Members	Join Link
Non-institutional stakeholders	Non-institutional stakeholders collaboration group	admin	0	1	
Institutional stakeholders	Institutional stakeholders collaboration group	admin	0	1	

3.6   The Sample engine

3.6.1 User role

As a starting point, 4 different roles have been identified. These will be re-defined during testing phase, in agreement with Province of Pisa, and finally laid out in D24.

- **Authenticated** and **Contributors**
  View statistical data visualizations, no data creation/loading permissions.
- **Moderators**
  Upload CSV with "Indicatori di programmazione sociosanitaria".
  Upload CSV files with "EUSILC" data, and R routines calculations.
- **Power contributors**
  Upload CSV with "Indicatori di programmazione sociosanitaria".
  Upload CSV files with "EUSILC" data, and R routines calculations.
  Manage lookup tables (Municipalities, AUSL, Regions, Provinces, Zones)
- **Admin**
  In addition to the former, administrators have access to module setup (*Administer → Site configuration → Sample engine module settings*) and execute the following actions:
    o Define columns for CSV data loading (recordset)
    o Insert table with raw indicators
    o Insert table with calculated indicators
    o Mapping between CSV columns and raw indicators

By clicking on "Sample engine" menu, a context-sensitive submenu will open, with different choices related to user roles and permissions.

A **Power contributor** will see the following menu items:

- Graphics
- CSV Upload
- Utilities
- Graphics

To initialize the widget and create a visualization, users must set search criteria. For some graphic visualization, a few seconds will be needed before the result will be shown.

3.6.2 CSV Upload

This section purpose is to load a new set of indicators. Source file is (mandatory) a CSV (Comma Separated Values) file, following the structure selected during setup.

To load a file, simply press "Select file", choose the file on the local machine, click "Open". Then select "Upload" button to start loading.

The system will inform users about the result of loading process (with appropriate error messages in case of failure).

3.6.3 Database maintainance and update

Access to this section is allowed only to Power contributors and Admin users. From here they can manage the static (lookup tables). So far the lookup tables managed in this area are the following:

- Regions
- Provinces
- Areas
- Ausl

- Zones
- Municipalities
- Bodies
- Laeken
- Statistical Dossier Sectors
- PIS Sectors
- Indicators

On the first data loading users must comply to the previous sequence, then the wizard-like interface will give on every step useful info and directions to complete the operation without errors.

In some cases (Regions and Provinces, see Fig. 9), the first file loading may be executed by selecting "File insert"; the source of this process is an array shipping with the module itself. New Regions/Provinces can be added selecting "Add".

For all other instances (Aree, AUSL, Zones and Municipalities), the loading is performed using a single CSV file for every type.

3.6.4 Utilities

Access to this section is allowed only to Power contributors and Admin users. From here they can manage the static (lookup tables). So far the lookup tables managed in this area are the following:

Regions

ID	integer	autoincrement
NAME	varchar2	
DELETED	integer	

Provinces

ID	integer	autoincrement
ACRONYM	varchar	
NAME	varchar	
REGION_ID	integer	foreign key to Regions table
DELETED	integer	

Areas

ID	integer	autoincrement
REGION_ID	integer	foreign key to Regions table
NAME	varchar	
DESCRIPTION	longtext	
DELETED	integer	

Ausl

ID	integer	autoincrement
REGION_ID	integer	foreign key to Regions table
COD_AUSL	varchar	

NAME	varchar	
WEB_SITE	varchar	
DELETED	integer	

Zones

ID	integer	autoincrement
NAME	varchar	
AUSL_ID	integer	foreign key to Ausl table
DELETED	integer	

Municipalities

ID	integer	autoincrement
AREA_ID	integer	foreign key to Areas table
ZONE_ID	integer	foreign key to Zones table
AUSL_ID	integer	foreign key to Ausl table
PROVINCE_ID	integer	foreign key to Povinces table
ISTAT_CODE	varchar	
NAME	varchar	
ADDRESS	varchar	
ZIP_CODE	varchar	
PHONE	varchar	
ALT_PHONE	varchar	
FAX	varchar	
FREE_CALL_NUMBER	varchar	
WEB_SITE	varchar	
DELETED	integer	

On the first data loading users must comply to the previous sequence, then the wizard-like interface will give on every step useful info and directions to complete the operation without errors.

In some cases (Regions and Provinces), the first file loading may be executed by selecting "File insert"; the source of this process is an array shipping with the module itself. New Regions/Provinces can be added selecting "Add".

For all other instances (Aree, AUSL, Zones and Municipalities), the loading is performed using a single CSV file for every type. The dataset is as follows:

Areas

regione,nome,descrizione

AUSL

regione,cod_ausl,nome_ausl,web_site

Zones

nome,id_ausl

Municipalities

id_area,id_zona,id_ausl,id_provincia,istat,nome,indirizzo,cap,telefono,telefono_alt,fax,numero_ver de,web_site

4 Install instructions for Sample Engine Drupal module

4.1 Pre-requisites

The system has been tested and it's working inside Drupal CMS v. 6.17 or earlier. A working, correctly configured Drupal install is enough to include all Sample engine capabilities.

In addition to core modules, the only pre-requisite for the Sample Engine module to work is to have the module *Lightbox2* installed and working.

4.2 Sample Engine module install

a) Copy the distribution archive into *sites/all/modules* directory

b) Expand the archive

c) Login into Drupal as administrator and go to Administer > Site building > Modules (http://SITE_URL/?q=admin/build/modules)

d) Enable the module **Sample engine** and save the config. The install process will take care of creating all the necessary database tables.

4.3 System folders creation

a) The Sample module needs some system folders to work properly. First of all, we need to know whichis the default Drupal files folder, so as an administrator go to Administer > Site configuration > File system (http://SITE_URL/?q=admin/settings/file-system)

b) The default configuration sets this property to *sites/default/files* as a relative URL; however this setting can be changed, so it needs to be double-checked

c) On the filesystem, create the following folders inside the default files directory:

   • CSV

   • php_files/upload

   • r_files/upload

   • r_files/output

4.4 Configuration

a. Login into Drupal as administrator and go to Administer > Site configuration > Sample engine settings (http://site_url/?q=admin/settings/sample_engine)

b. Here we can edit the setup of the module:
   Misc settings
   CSV Separator: sets the columns separator for CSV import files
   Check process: when set to "no", this property lets the module execute only one process per run (one at a time)
   Upload directories
    R Upload directory: sets the relative path for R routines processing files. The directory must exist and must be located inside the default system files folder *(/sites/default/files/)*.
   PHP Upload directory: sets the relative path for the files processed by PHP functions
   imposta il path relativo per i file processati dalle funzioni PHP. The directory must exist and

must be located inside the default system files folder *(/sites/default/files/)*.
Recordset format: this property sets the format for the CSV file used for importing data (values) inside the repository.
Column mappings: based upon the value of the above property (Recordset format), it is possible to map the CSV column with a corresponding database column inside the table *se_indicatori*
 N.B. A form for the value mapping will show only after the first save

4.5   Loading lookup tables

  a. Login into Drupal as administrator and go to Indicators > Utilities (http://SITE_URL/?q=sample_engine/utilities).
      Regions, Provinces and Indicators' types are pre-loaded during installation phase.
      In every section, it is possible to upload a CSV, use the uploaded file for the actual table population, or manage the individual record (it is mandatory to follow the loading order, or the relationships between tables will not be respected).
  b. For each lookup table, access the dedicated page clicking on the relevant link. From this page it is possible:
       - Add new
       - Manual insert
      - Upload NOME_LOOKUP file (uploads the CSV source file).
      Again, it is paramount to follow the loading workflow rules, or the tables will not be properly filled (data inconsistencies might occur).
  c. Alternatively, it is possible to upload all files via FTP inside the */sites/default/files/CSV/* folder. After all the files are loaded, the previous link will change to "Insert NOME_LOOKUP from file", which will take care of calling the right loading workflow.

4.6   Uploading indicators (PHP and R routines)

When all the lookup tables are correctly populated, it's time to proceed with the next step: uploading the actual data (indicators) and calculate them (from PHP and R routines).

  a. Login into Drupal as administrator and go to Indicators > Indicators management (http://SITE_URL/?q=sample_engine/uploadCSV)
  b. Here it is possible to choose from a list of loading workflow processes: every process has been individually developed to load and compute a single type of indicators.
      To start the process, just select the chosen operation and upload the source CSV files.
  c. PHP loading workflows do accept only CSV files following the record mappings as saved during the module setup.

4.7   Creation of source tables for charts

The last step involves the generation and population of tables used for charts. These tables are an alternative (horizontal) representation of data used to feed the Google Visualizations, and to expose a data source which can be used by website users to create alternative visualizations.
It is enough to create and fill only tables which are actually needed by the indicators we want to be displayed in charts.

  a. Login into Drupal as administrator and go to Indicators > Utilities > Table rebuild (http://SITE_URL/?q=sample_engine/utilities/ana_indicatori_rebuild)
      - Select main category

- Select indicator's type
- Select the operation we want to perform:
  i. Test: displays on video all the operations without actually executing them
  ii. Regenerate: drops and re-creates the table (use this when new instances of indicators are added to the repository)
  iii. Regenerate and populate: drops and re-creates the table, then calls the table filling workflow (use this when new values for existing indicators are added to the repository)
  iv. Empty and populate: truncates the table and re-populates it table (use this when an indicator is added from scratch)

4.8   Data visualization (tables and charts)

When all the above operations are performed, website users can display the data from the repository, both in tabular and graphic form (charts: motion chart, bars and lines).
The relevant website section is Indicators > Charts (http://SITE_URL/?q=sample_engine/graphs) o Indicators>Tables (http://SITE_URL/?q=sample_engine/browse)
Charts and tables visualizations are wizard-driven, to ease the selection of indicators: simply follow the step-by-step instructions.

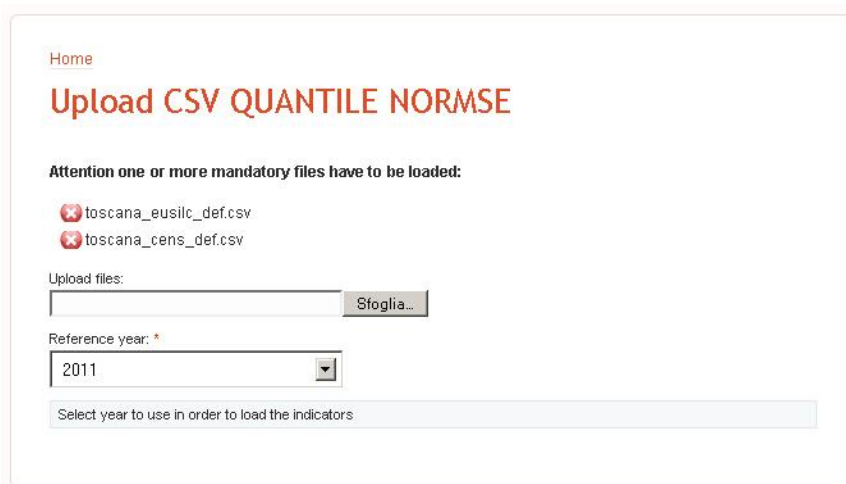## *4.9   Steps to follow for R routines launch*

Access site as administrator

Click on Indicators → Indicators management

Select the desired routine and hit "Submit"

The system checks and if it is the case asks for all needed source files.

Available routines list, and related files, are saved on a property file (se_lists.inc) inside sample_engine module folder.

Each routine creates one or more indicators. A mapping between process and indicators must be done from module config: Administer → Site configuration → Sample engine settings, where users can insert an indicators' list for every available routine.
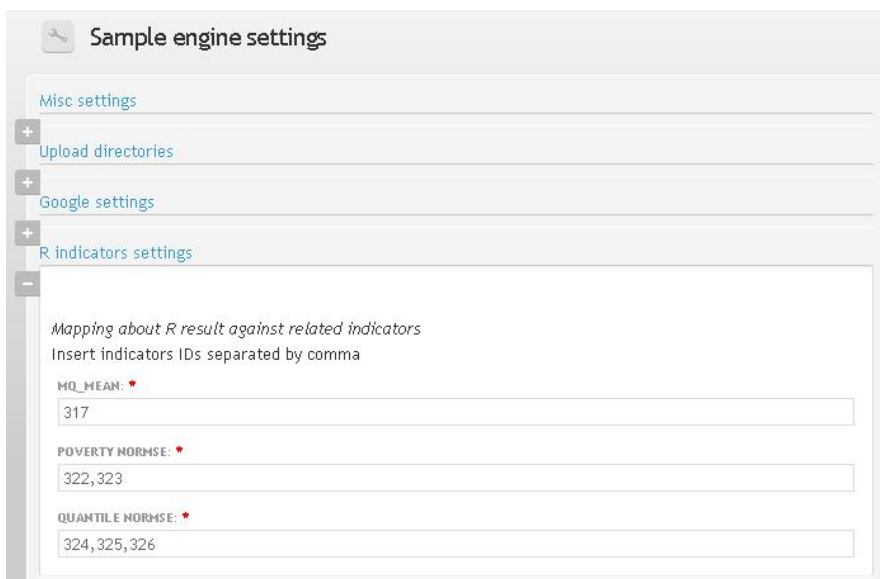

When every mandatory file has been uploaded, a reference year must be selected (Note: Submit button will appear only when all the mandatory files are in place).

In case of different routines using the same source files, users do not need to load them twice, they will be available on the filesystem (/sites/default/files/r_files/upload) and automatically be listed by the configuration process.
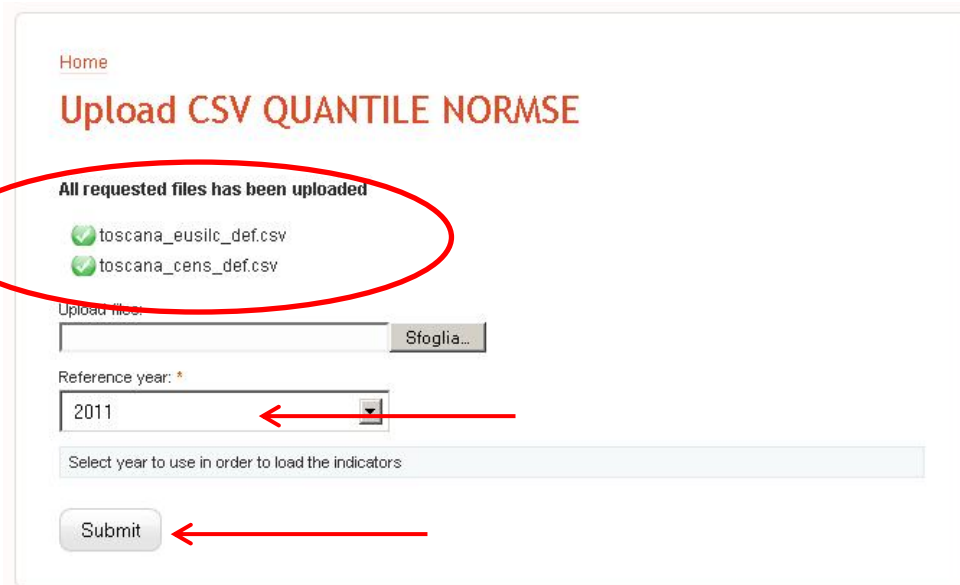
By hitting "Submit", indicators are calculated; when the process is done, the result output will be shown. The raw output file can be retrieved in /sites/default/files/r_files/output. Every result file is called "result_ROUTINE_NAME.txt". In our example, the file is called **result_QUANTILE_NORMSE.txt**

The final summary also shows the relevant year and all involved indicators. At this stage, if everything is ok we can insert the calculated indicators inside Sample database, by clicking on the link below.
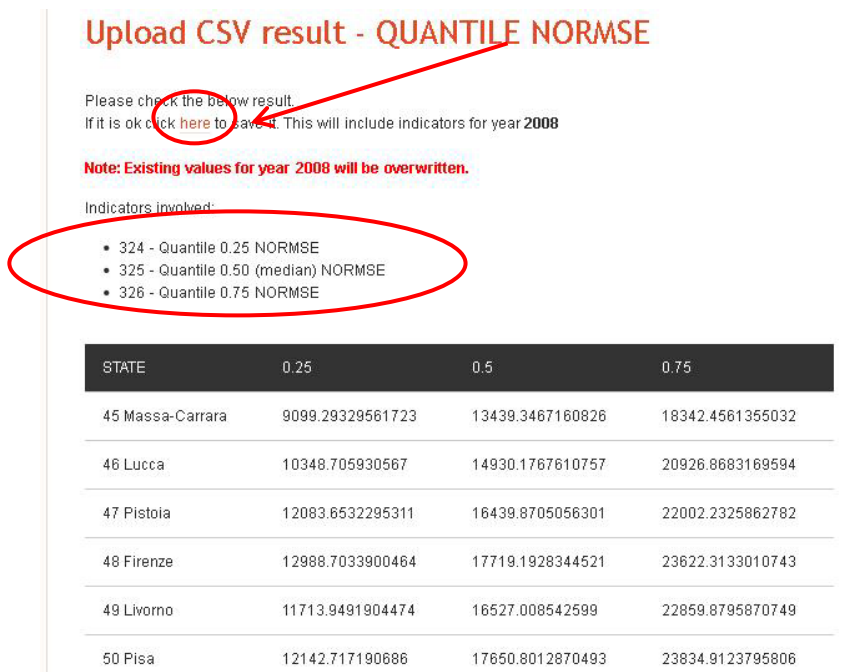
The last step in this administrative maintenance routine is to rebuild reference tables, so that the new indicators can be displayed both in tabular and charts view.

Click on Indicators → Indicators management → Table rebuild to access lookup tables maintenance page.
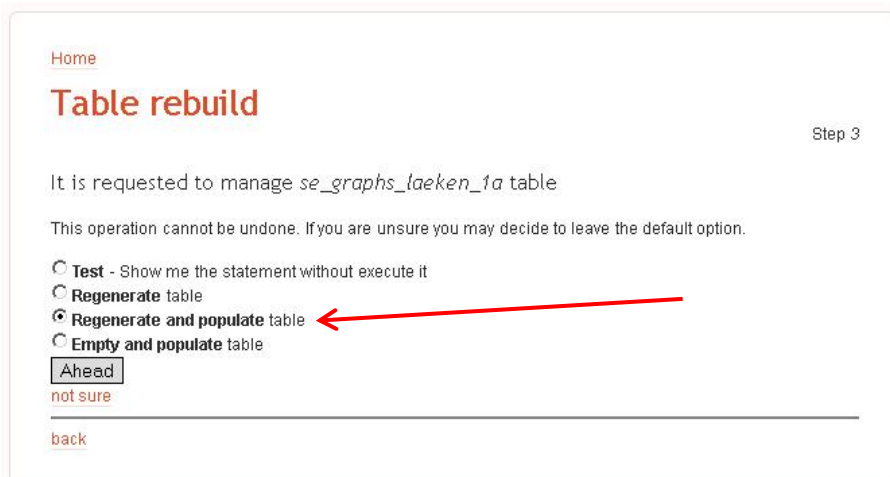
Select category (in our example **Laeken indicators**) and hit "Ahead".

On step 2, select the subcategory and hit Yes.

On the last step, we can choose if:

- Do a test Effettuare un test per vedere che tipo di operazioni verranno eseguite
- Recreate the table – table will be emptied
- Recreate and fill the table
- Truncate and fill the table

In our example we are regenerating and populating table, see the result below.

Home

- se_graphs_laeken_1a dropped
- se_graphs_laeken_1a created
- Table *se_graphs_laeken_1a* truncated
- *60* record(s) loaded

Table rebuild

Step *1*

Here you may delete and rebuild as well as repopulate all the tables used by charts.

Select the category you want to rebuild

◉ Indicators from Statistical Dossier for Social Planning from Pisa Province
○ Indicators for Health Societies from Regional Network of Social Observatories
○ Laeken indicators

[Ahead]

back

Maintenance done!