# USER GUIDE ANALYTICAL AND REPORTING SYSTEM

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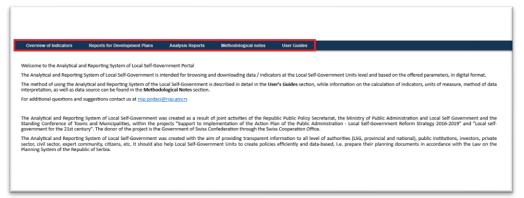
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# Introduction

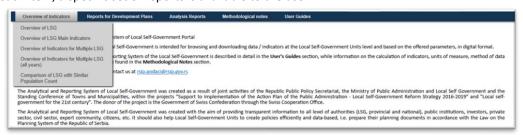
On the introductionary page you can choose one of the versions: Serbian cyrilic, Serbian latinic, English. For clearer use of the Analytical and Reporting System Local Self-government (ARS LSG), it is recommended to use Mozilla Firefox as a browser. Right-click on the blue bar to get the "This Frame" option and select the "Open Frame in New Tab" option. It will open the whole report on one tab, on one page.



The basic classification of the report is as follows:



Within each item, a specific set of reports is available to the user:



Main menu, with the choice of categories and reports, is always visible. Any report can be closed clicking on "Close" in the right upper corner (red arrow) or choosing any new report on the menu.



# **General Tool Manual**

# General View of the Report

#### Each report contains:

- Title
- Template name (under the title)
- Subtitle (when a report contains more parts)
- Remark or instructions what to do next, which is under the title or subtitle,
- Filters

According to the visual appereance, reports are divided into two categories.

#### **Basic report**

Basic report has tabs, user can choose any tab (green arrow). User can choose filter by clicking on the name of the filter (red arrow).



#### **Dashboard**

Dashboards are used for the various visualizations. Initially, the form for filter selection is not displayed on the dashboard. Clicking on the "Filters" (red arrow), subform for filters will open. Another click on the "Filter" will close the subform for filters.



Filter values are selected by clicking on the desired field, located below the filter name (red arrow).

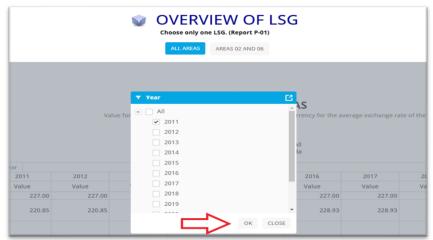


# **Filters**

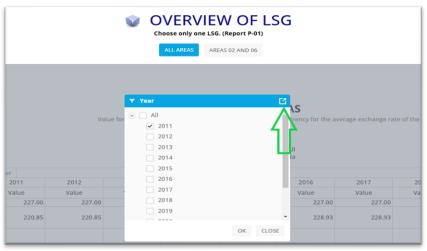
Wherever the filters are accessed from, the same filter selection form will be displayed. The filter selection form can be:

- short
- full

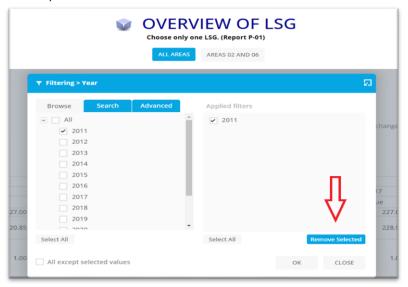
The short form allows selection from a displayed list or hierarchy of values. The selection is confirmed by clicking the "OK" button in the lower right corner.



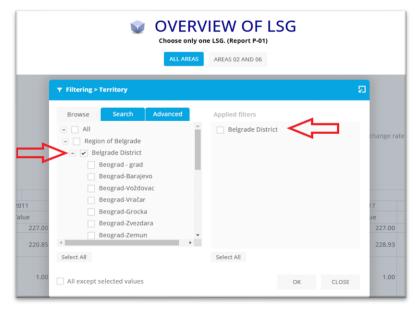
If you want to switch from short view of filters to full view of filters, you need to click on the icon in the upper right corner (green arrow).



An existing value of the filter can be removed by clicking on "Remove Selected", in the part of the form called "Applied filters" (red arrow).

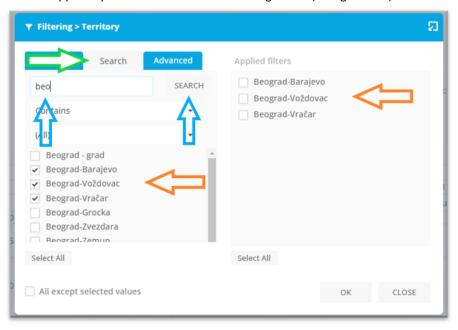


New value of the filter (one or more) is chosen from the hierarchy from the left side. Hierarchy on the left side can be opened (click on "+"), or closed (click on "-"). Your choice from the left side will be appear on the right side (red arrows).



#### Alternate way is the following:

- Click on "Search" (green arrow)
- Enter the key word or the part of the word. Approve the choice by clicking "Search" (blue arrow).
- The results will be shown at the left side.
- Mark them to approve your choice and move to the right side (orange arrow).

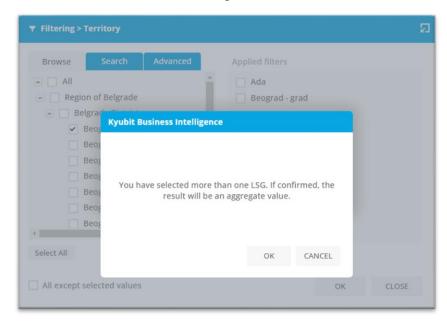


Most reports that use the "Territory" filter only make sense for one selected row from the hierarchy, that is, for one selected LSG.

Under the title of each individual report there is a note to that effect. If multiple rows are selected, a warning will be displayed.

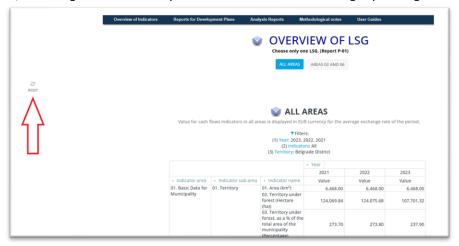
#### The following are possible:

- Accept the warning (click on "OK"). The report will be presented, but the displayed values will most often be aggregated (the exception is reports where the territory appears in columns and not in the rows of the report, which are OVERVIEW OF INDICATORS FOR MULTIPLE LSG, OVERVIEW OF INDICATORS FOR MULTIPLE LSG (ALL YEARS), ANALYSIS OF INDICATORS BY TERRITORY).
- Reject (click on "CANCEL"). Removing redundant line from "applied filters" is needed.



## Reset

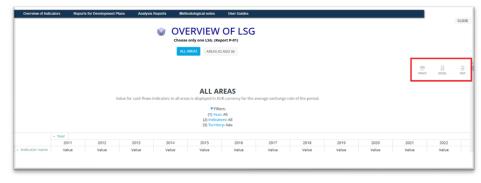
On basic reports, the changed filter can always be returned to the initial settings by clicking "Reset" (red arrow).



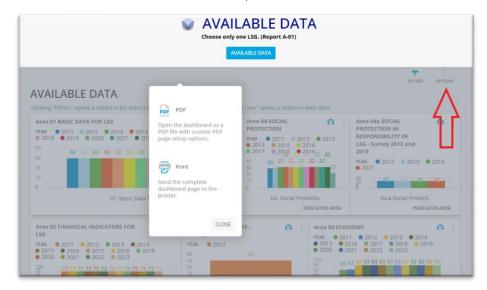
# Export to pdf or excel

Export to pdf or excel depends on the category of the report.

For <u>basic reports</u>, icons for pdf and excel are shown in the upper right part. Direct printing is also posible.



For <u>dasboards</u> there is a possibility to export complete form to pdf or Excel format. Click on "options" (red arrow) and the subform for chosing the type of export will open.



You can use alternate way for the parts of the dasboards (so called tiles). Cliking on three vertical points (red arrow) will open submenu, where you can choose "Expand View".



New form will be opened and, at the bottom of the form, you can choose icons for either pdf or excel form (red arrow).

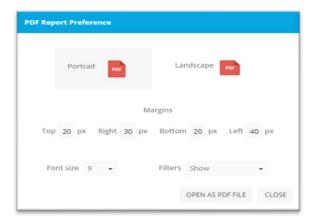


# Options for Exporting to Pdf

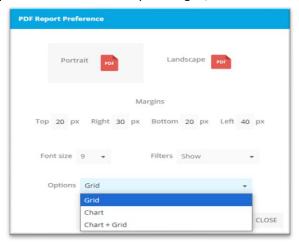
You can choose the type of exporting:

- portrait
- landscape

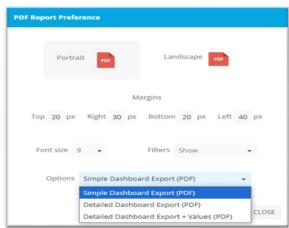
Also, there is possibility to adjust font, if necessary.



When it comes to choosing print options in pdf, they are different for "reports" and "dashboards". With the <u>basic reports</u>, it is possible to download the pdf as a grid, chart or chart + grid.



When it comes to <u>dashboards</u>, choosing a pdf print option can also be useful. For example, selecting "Detailed Dashboard Export + Values (PDF)" provides the most complex report, page by page for each report element. Also included is the data, in the form of a table, which is located in the background of the graph.



# Options for Exporting to Excel

When it comes to downloading Excel files, by clicking on "Excel" the shown subform will appear. You should check the box next to the indicator "Export as numeric values" in order to download the values in Excel as numeric values.



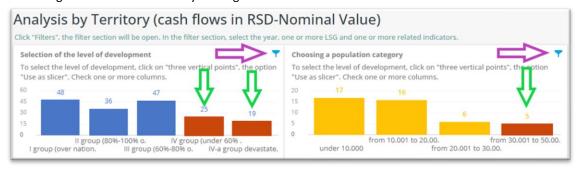
# Using the slicer

On some visualizations it is possible to use the "Use As Slicer" option. First, click on the three vertical dots (red arrow) on the element, and then select the "Use As Slicer" option from the displayed menu.



When the element is in "Use As Slicer" mode, then the upper right corner of the element shows a "funnel" instead of the previous three vertical dots (purple arrows). On the visualization it is possible to select one or more columns (green arrows). The selected choice will be reflected on all other elements on the form (other visualizations and tables).

Return to regular mode is achieved by clicking on the "funnel".



# Overview of Indicators

Reports from this group are the easiest to use. These are the following reports:



# Overview of LSG (Report P-01)

The report is intended for insight into the indicator values of **one** LSG.

#### The report contains 2 tabs:

- First tab is for all areas and all years (the displayed value for cash flow indicators in all areas is expressed in the monetary unit EUR at the average exchange rate of the period)
- The second tab is for the areas 02 and 06 and the last year available (the displayed value is expressed in RSD nominal value and in the monetary unit EUR at the average exchange rate of the period)

#### Rows:

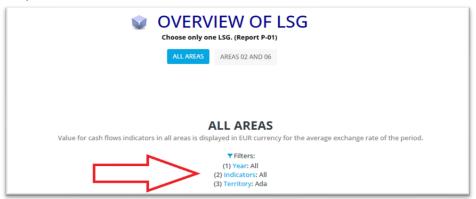
- Indicator area
- Indicator sub-area
- Indicator name

#### Columns:

- Year

#### Filters on the first tab:

- Year
- Indicators
- Territory



# Filters on the second tab:

- Area Last year (changes are not allowed)
- Territory



In both cases, one LSG (first in alphabetical order) was initially placed in the "Territory" filter. The user should change the filter to the desired LSG.

#### Selecting multiple LSG in the "Territory" filter

The report is intended for a single LSG, as stated under the report title. However, if more than one LSG or a higher hierarchy level (e.g. region) is selected in the "Territory" filter, the result will be obtained, but it will be a cumulative value per indicator. For some indicators, a cumulative value makes sense (e.g. "number of inhabitants"), but for most indicators it does not (e.g. all indicators that are percentages and indices and that are calculated at the LSG level).

#### Types of LSG

From the point of view of the collected data, a local government can be:

- a city that has city municipalities
- a city municipality
- a municipality

For areas 02 and 06, the data is collected exclusively for:

- a city that has city municipalities
- municipalities

If a city municipality is selected in the "Territory" filter (e.g. Požarevac-Kostolac), the result for areas 02 and 06 will be empty, i.e. areas 02 and 06 will not be displayed in the report at all. In this case, a city that has city municipalities must be set in the filter (e.g. Požarevac-city).

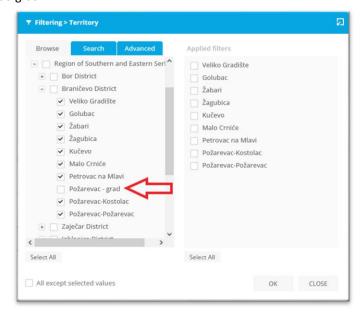
For areas other than 02 and 06, there is data for all types of local government units. If the local government unit is a "city that has city municipalities", then for most indicators the data is the sum of "city municipalities". As long as the lowest level of the hierarchy and only one local government unit is specified in the "Territory" filter, correct data is obtained.

However, if a higher level of the hierarchy is selected, e.g. an area that contains a "city that has city municipalities" and "city municipalities", duplicate data will be obtained for some indicators (for example, the indicator "number of inhabitants"). The solution is to omit "city that has city municipalities)" in the "Territory" filter.

An example of a correct request for the aggregate value of an indicator is shown, with:

- indicator is not from areas 02 and 06,
- the indicator is such that it makes sense to sum the values.

In the "Territory" filter, instead of the Braničevo region, which includes the city of Požarevac and the two city municipalities of Požarevac, all local governments from that region are listed individually, except for the local government "Požarevac-grad".



# Overview of LSG Main Indicators (Report P-02)

This report is the same as the "Overview of LSG", except that not all indicators by area are displayed, but only those indicators that are included in the LSG Main Indicators. The LSG Main Indicators list is a representative subset of all indicators. The report is intended for insight into the indicator values of one LSG. The user should change the filter to the desired LSG.



# Overview of Indicators for Multiple LSG (Report P-03)

The report is intended for insight into the values of indicators for multiple LSG, but only for the **last year available**. The report has one tab for each area. The reason is that the "last year" is not the same for each area. For example, data for area 05 (agriculture) have the census as a data source, which is conducted every 12 years.

#### Rows:

- Indicator area
- Indicator sub-area
- Indicator name

#### Columns:

- LSG

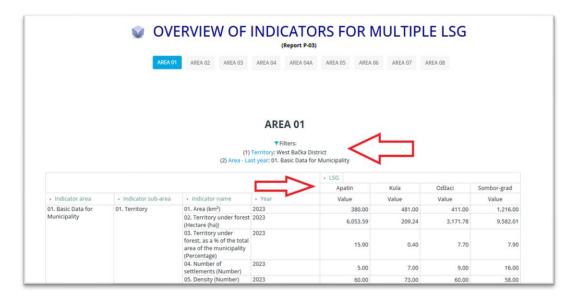
#### Filters:

- Territory
- Area Last year

Initially, a single, arbitrary area was placed in the "Territoriy" filter, to draw the user's attention to the need to change the filter according to their needs:

- corresponding area
- multiple arbitrary LSG from any area or region

In the example bellow, the "Territory" filter is set to "West Bačka District".



# Overview of Indicators for Multiple LSG (all years) (Report P-04)

The report is intended for insight into the values of indicators of several LSG for all years.

#### Rows:

- Indicator area
- Indicator sub-area
- Indicator name
- Year

#### Columns:

- LSG

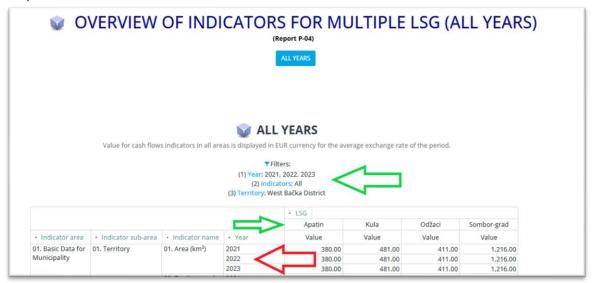
#### Filters:

- Year
- Indicators
- Territory

Initially, a single, arbitrary area was placed in the "Territoriy" filter, to draw the user's attention to the need to change the filter according to their needs:

- corresponding area
- multiple arbitrary LSG from any area or region

In the example, the "Territory" filter has been set to "West Backa District" (green arrows). The "Year" filter has been narrowed to 3 years of choice, and in the result, the years appear as a subcategory within the indicator (red arrow).



# Comparison of LSG with Similar Population Count (Report P-05)

The report is intended for insight into the indicator values of multiple LSG for the last year. One LSG is chosen, and the result includes 5 more LSG that are closest to the given LSG in terms of population. The criteria for "similar population count" means:

- closest larger poplation count,
- closest smaller population count.

The report has one tab for each area. The reason is that "last year" is not the same for each area.

## Rows:

- Indicator area
- Indicator sub-area
- Indicator name
- Year

#### Columns:

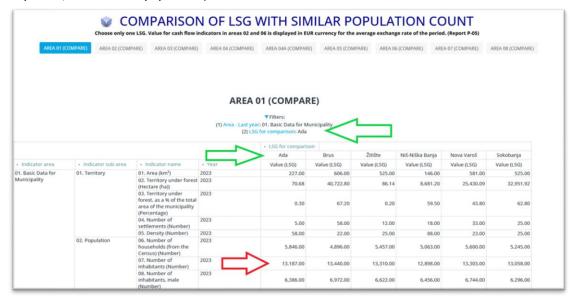
- LSG

# Filters:

- Area Last year
- LSG for comparison (multiple LSG is not allowed)

Initially, one LSG is set in the "LSG for comparison" filter (first alphabetically), in order to draw the user's attention to the fact that they should change the filter according to their needs.

In the given example, the LSG "Ada" (green arrow) was set in the filter. The result is 6 municipalities: Ada and 5 other municipalities that are closest to the municipality of Ada in terms of population (green arrow for municipalities, red arrow for population).



# **Reports for Development Plans**

Reports from this group are intended for the preparation of local government development plans.

# List of report tables

According to the areas, these are the following reports: Basic data for Municipality (Reports R-0100 to R-0103):



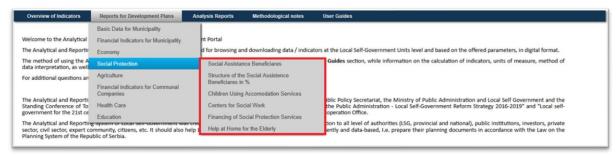
#### Financial Indicators for Municipality (Reports R-0201 to R-0209)



#### Economy (Reports R-0301 to R-0312)



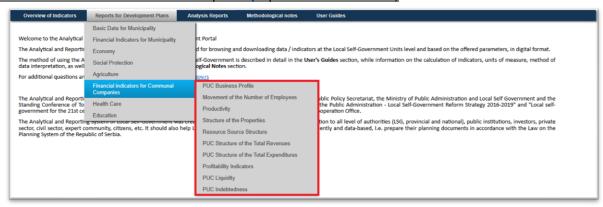
#### Social Protection (Reports R-0401 to R-0406)



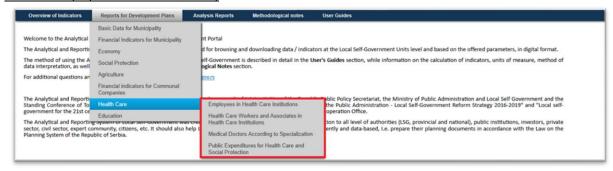
#### Agriculture (Reports R-0501 to R-0505)



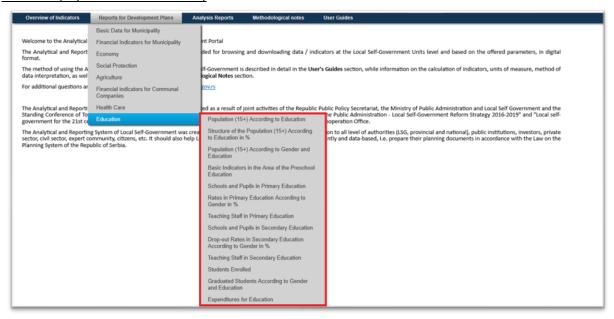
#### Financial Indicators for Communal Companies (Reports R-0601 to R-0610)



#### Health Care (Reports R-0701 to R-0704)



#### Education (Reports R-0801 to R-0813)



## Formats of report tables

Reporting tables for the preparation of local government development plans, in most cases, have 2 formats:

- by year
- by district

The formats are corresponding to 2 tabs:

- the first tab is for the given LSG and the last 9 years (if data exists)
- the second tab is for the given LSG and all the other LSG belonging to the same district as the given one, exclusively for the last year (latest available data)

In all reporting tables, for cash flow indicators, the value shown is in the monetary unit EUR at the average exchange rate of the period.

# Reporting tables by year

The structure of the report table by year (green arrow) is as follows:

#### Rows:

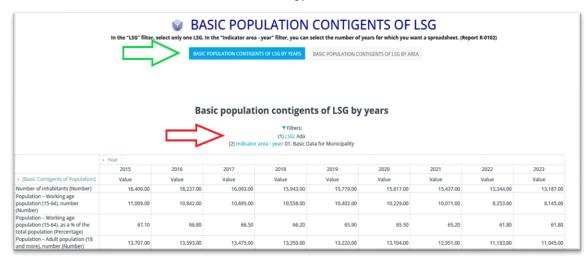
Indicators of a specific reporting table

#### Columns:

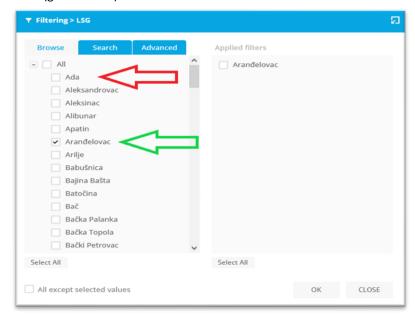
- Year

Filters (red arrow) are as given:

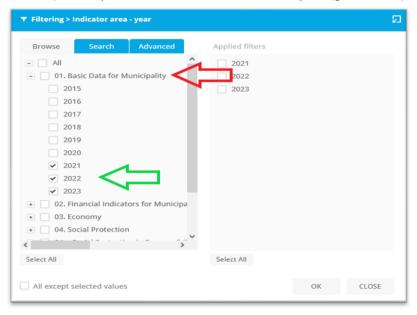
- LSC
- Indicator area year



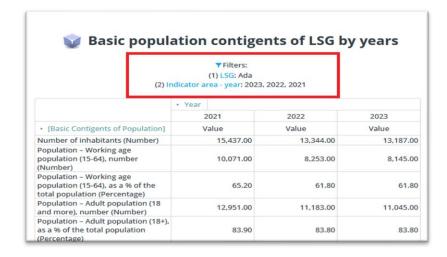
In the "LSG" filter, you should reset the initially set LSG, which is the first in alphabetical order (red arrow), and then set the desired LSG (green arrow).



In the "Indicator area – year", when you want a smaller number of years in the table, you first need to reset the preset selection (red arrow). Then open the node and select the desired years (green arrow).



The result is a report table for the desired LSG and with a smaller number of years.



# Report tables by area

The structure of the report table by area (green arrow) is as follows:.

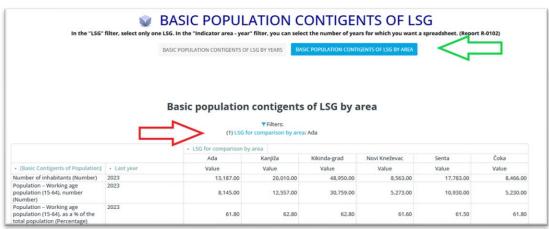
#### Rows:

- indicators of a specific reporting table
- last year available

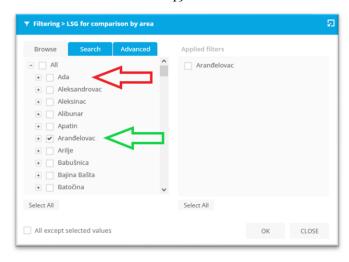
#### Columns:

- LSG in district

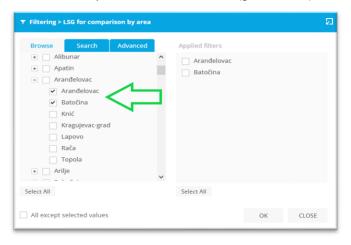
This format has only one filter, that is "LSG for comparison by area", or "LSG" (red arrow).



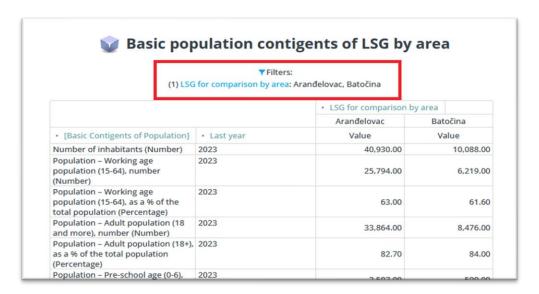
Setting the filter for "LSG for comparison by area" is the same as in the previous case. First, the initially set filter is reset (red arrow), and then the desired LSG is set (green arrow).



Additionally, by opening the "LSG for comparison by area" node and resetting the entire node, it is possible to narrow down the number of LSG for comparison within the district (green arrow).



#### End result is as given:



# **Analysis Reports**



## Available Data

Report contains introductory dasboard and separate dashboard for each area of indicators

# Introductory Dashboard (Report A-01)

Introductory dashboard serves as connection with other dasboards. It has tiles, one tile for each area of indicators. Every tile has "eye" icon and clicking on that icon will open connected dasboard in the new window. This is the simpliest way of using this report.

Filters on Introductory Dashboard:

- Year
- Territory, with a default initial LSG, which needs to be changed.

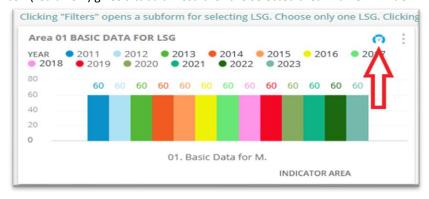
On dashboards, filters are linked and apply across all forms.

Additional form options are as follows:

- For each area, you can see the years in which data is available, as well as the number of indicators per year and the specified LSG in the filter (red arrow).



Clickin on "eye" icon (red arrow) gives a tabular result for the selected area in a new window.





# Individual dashboards by area (Reports A-01/1 to A-01/8)

Individual dashboards contain certain elements:

- fixed indicator area
- in rows, indicator names
- in columns year

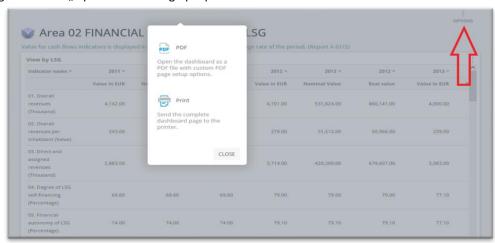
# Unit of measurement (all areas, except areas 02 and 06, cash flow indicators)

RSD - Nominal values

#### Unit of measurement (area 02 and 06)

- Value in EUR
- RSD Nominal values
- RSD Real values

By clicking the button "Options" will bring up a printable subform.



# Main indicators (key performance indicators) (Report A-02)

The report consists of multiple tabs, where each tab corresponds to one area (green arrow). On the left side there is a filter selection section (red arrow). The specified filter is transferred across the tabs.



Report is valid on the level od one LSG.

The following elements are displayed for each area:

- table of indicators from the areas included in the "LSG identity card" (red arrow)
- one graph for each key success indicator (green arrow)
- a common graph for all key success indicators (blue arrow)



#### Key performance indicators (KPI)

KPI is an indicator that is included within the Mainc Indicators of LSG and and is of special importance. The following is defined:

- name of the KPI (indicator name)
- lower and upper limit

The pointer shows the current value of the KPI.

A KPI can be such that it is better when its value is <u>as high as possible</u>. For example, the "Population Growth Rate" should be as high as possible. The limits are:

- lower limit is 0
- upper limit is maximum i RS

On the image below, the red arrows on the dial mark:

- lower and upper limits (red arrows),
- explanation of the limits in the title



The pointer on the dial scale shows the current value of the indicator. The blue arrow marks the numerical value of the indicator for the given LSG.

A key performance indicator can be such that it is better when its value is <u>as low as possible</u>. For example, "Average age of the population" should be as low as possible. The limits:

- lower limit is the minimum in the RS
- upper limit is the average in the RS

On the image below, the red arrows on the dial mark:

- lower and upper limit (red arrows),
- explanation of the limits in the title



The pointer on the dial scale shows the current value of the indicator. The gray arrow marks the numerical value of the indicator of the given LSG.

#### Trends

All key performance indicators from the observed area are shown. Features:

- KPI name
- Actual state
- Target value and %
- Trend line
- KPI vs Target



When the goal is to have as high a value as possible (e.g., Population growth rate), the following applies:

- the goal is for the actual value to be above the lower limit
- the lower limit mark is red, and the upper limit mark is green

The actual condition color code has the following meaning::

- red means below the lower limit (failure)
- yellow means between the lower and upper limits (warning)
- green means above the upper limit (success)

When the goal is to have the lowest possible value (e.g., the average age of the population), the following applies:

- the goal is for the actual value to be below the lower limit
- the lower limit label is green and the upper limit label is red

The actual state color label has the following meaning:

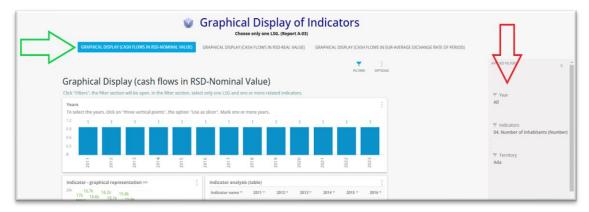
- red means it is above the upper limit (failure)
- yellow means it is between the lower and upper limits (warning)
- green means it is below the lower limit (success)

# Graphic display of indicators (Report A-03)

The main purpose of the report is a graphic representation of the selected indicator by year for one LSG. <u>It is possible to change the visualization (graph type).</u> The report has three tabs (green arrow), where each tab supports one of the values: nominal value, real value, value in EUR.

The filters are as follows (red arrow):

- Year
- Indicator, initially one indicator was set up, in order to indicate the place for selecting the indicator
- Territory, initially one LSG was set up, in order to indicate the place for LSG selection

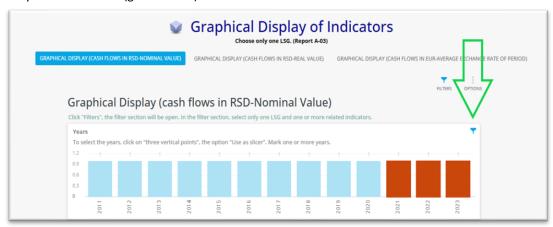


Each of the tabs consists of the following parts:

- Years
- Indicator graphical representation
- Indicator analysis (table)

#### Years

For the given LSG and the given indicator in the filters, a graphical presentation of the years is given. There is a possibility to use the slicer (green arrow)



This graph allows a visual selection of years. An alternative way is to select years via the standard filter, that selection will also be reflected on the visualization.

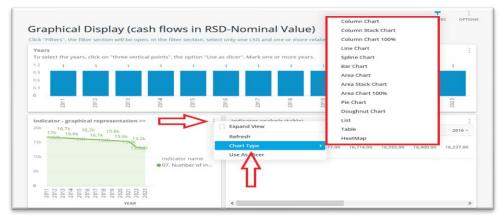
The report is such that it makes no sense to narrow down the selection to just one year, because then the graph loses its meaning.

#### Indicator - graphical representation

Initially, the selected indicator is displayed as a line. It is possible to change the chart:

- You should click on the "three vertical dots" (red arrow).
- A sub-menu opens, where you should select the sub-item "Graph type" (red arrow).
- The next sub-menu opens, where you should select the type of chart.

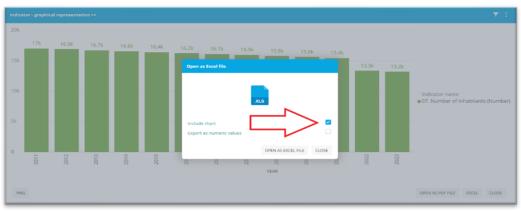
Some types of graphs will not give a result. These are charts that are based on more detailed analysis, which is not the case with this report.



Below is the result of selecting one type of chart. Additionally, clicking on the "three vertical dots" and selecting the "Expand View" option on the submenu opens a new chart subform.



It is possible to switch to Excel, while it is necessary to set the "Include chart" indicator (red arrow).



The final result in Excel is as follows.



#### Indicator analysis (table)

Detailed display of the selected indicator.



# Analysis of Indicators by Year (Report A-04)

From a data standpoint, it always makes sense to analyze data at a level:

- one LSG
- one or more related indicators

The report has three tabs (green arrow), where each tab is support for one of the values: nominal value, real value, value in EUR

Filters (red arrow):

- Year
- Indicators, initially set example
- Territory, initially one LSG was set up, in order to indicate the place for LSG selection.



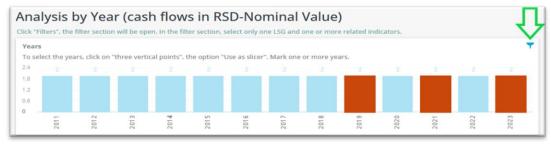
### Each tab contains:

- graphical display of years
- graphical display of changes of indicators by years
- graphical display of the mutual relations of indicators
- tabular display of indicators analysis

#### **Graphical display of years**

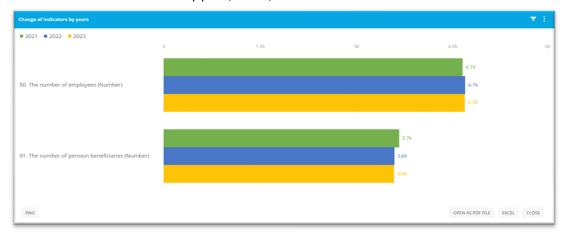
For the given LSG and indicators in filters, a graphical display of the years is given. There is an option to use the slicer (green arrow) to narrow down the selection. In the example, the selection is narrowed down to the last 3 years.

Also, if a selection is made in the "year" filter, that selection will be reflected on the visualization.



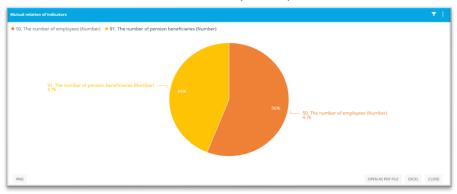
#### Changes of indicators by years

The selected indicators are observed by years, that is, the movement of indicator values over time is observed.



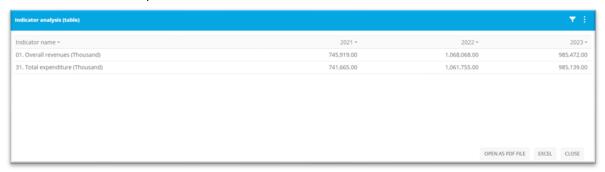
#### Mutual relation of indicators

The values of the selected indicators for the first selected year are put in relation to each other.



## Indicator analysis (table)

This is a detailed tabular representation of the results.



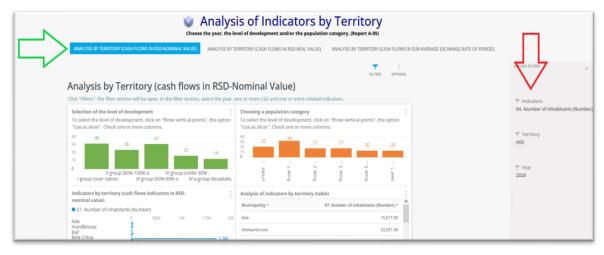
Data are always comparable by year at the LSG level. However, if the data is viewed at the level of several LSG or at a higher level of hierarchy (e.g. district), care should be taken that the selected indicators make sense, i.e. that they can be summarized by territory

# Analysis of Indicators by Territory (Report A-05)

The report has three tabs (green arrow), where each tab is support for one of the values: nominal value, real value, value in EUR.

Filters (red arrow):

- Year
- Indicators, initially set example
- Territory, initially one LSG was set up, in order to indicate the place for LSG selection.

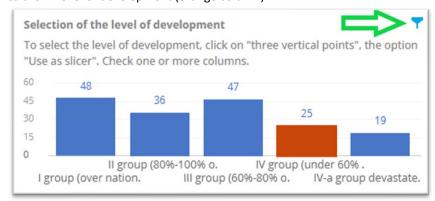


#### Each tab contains:

- graphical display of level of development
- graphical display of population category
- graphical display of indicators by territory
- graphical display of analysis of indicators by territory

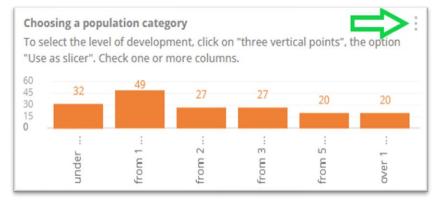
## Selection of level of development

There is an option to use the slicer (green arrow) to narrow down the selection. In the example, the choice is narrowed down to the IV level of development (orange column).



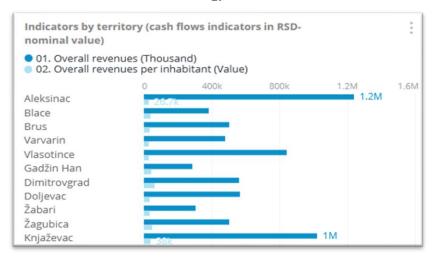
#### Graphical display of population category

There is an option to use the slicer to narrow down the selection. In the example, the slicer is not used (green arrow).



#### Анализа индикатора по територији

Одабрани индикатори се посматрају по ЈЛС, односно пореде се вредности по ЈЛС.



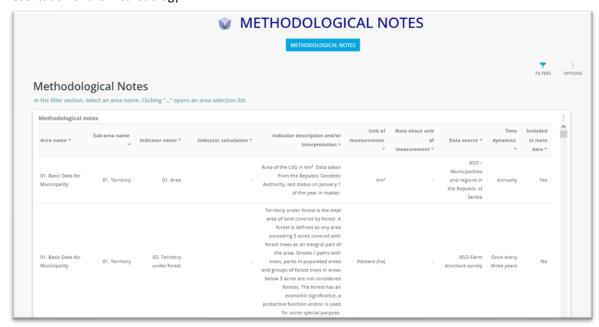
## Analysis of indicators by territory (table)

This is a detailed tabular representation of the results.

Municipality 🔻	01. Overall revenues (Thousand) ♥	02. Overall revenues per inhabitant (Value) 🕆
Aleksinac	1,244,614.00	26,742.00
Blace	382,515.00	37,753.00
Brus	503,659.00	35,115.00
Varvarin	483,462.00	30,560.00
Vlasotince	843,737.00	31,133.00
Gadžin Han	285,991.00	44,134.00
Dimitrovgrad	566,004.00	63,283.00

# Methodological notes

Presentation of the methodology.



Clicking on the three vertical dots will allow the form to be downloaded in a new window and printed in pdf or excel (green arrow).

