

**TWINNING CONTRACT**

**Support to the State and Entity Statistical  
Institutions, phase V**

**Bosnia-Herzegovina**



**FINAL  
MISSION REPORT**


**on**

**Structural Business Statistics**

**Component no 1.2.4 activity**

Mission carried out by  
Pekka Tamminen, Statistics Finland  
Ismo Teikari, Statistics Finland

3<sup>rd</sup> December – 7<sup>th</sup> December 2012

		 <b>STATISTICS DENMARK</b>

*IPA 2008*

## Abbreviations

BHAS	BiH Agency for Statistics
BiH	Bosnia-Herzegovina
BRC	District of Brcko
FIS	Federation Institution for Statistics
KAU	Kind of Activity Unit
RSIS	Republic Institution for Statistics
SBS	Structural Business Statistics
FS	Financial Statements
E&I	Editing and Imputation

## **1. Executive Summary**

The mission was carried out under the component 1. business statistics and sub-component 1.2 Structural business statistics of EU Twinning Project BA 08-IB-FI-03. Expected activities were the presentation and discussion of documentation, data transmission to Eurostat and sampling methods in the field of SBS and analysis of data editing methods used on SBS data in BiH for 2011 as reference year. Consultation consisted of five days of presentations and discussions in small expert groups.

### **Data transmission**

At the moment BiH is not obligated to transmit SBS to Eurostat, but the dissemination process should be ready by the end of project timeline. Therefore it's suggested to start the work necessary to prepare the SBS data for transmission to Eurostat and test the transmission itself.

Data transmitted to Eurostat should be encrypted and the software available for that purpose, tau Argus, is quite complex to use. BHAS should acquire the software as early as possible to study it and to assess the work needed for its implementation in the BiH SBS data distribution process. Due to the complex nature of the work involved in technical and methodological aspect, it is recommended that a person or persons responsible for dissemination is trained in the use of the software. There is training available on tau Argus by Eurostat. Also it is advisable to name the persons responsible for data transmissions to Eurostat beforehand to focus the training for the right personnel.

Eurostat has produced software to validate SBS series data. The validation software should be assessed and its implementation in the BiH SBS process studied.

### **Documentation of the SBS system**

Documentation and metadata usage in BiH and in Statistics Finland was compared and it was noted that system documents are produced in BiH, but there are some gaps concerning documentation of implementation rules that should be documented to prevent situation where some rules would become too dependent on IT personnel.

Eurostat quality report should be filled. Quality report could be filled in part before any data transmission and finalized when the transmission process is tested and prefilled report is received from Eurostat.

Editing and imputation strategy document should be made and agreed on by all institutions. In the document the E&I actions done by institutions and agency should be described and a common process flow chart made. In the document the common processes should be described and deviations from these highlighted. The document should be reviewed on continual basis.

### **Analysis of data editing methods used on SBS data in BiH**

Data editing methods used in BiH survey were discussed and from the consultants point of view the processes of editing and sampling has been harmonized to a good degree between the institutions. The editing process and editing rules could be analysed by producing a set of indicators, for example, for the extent to which enterprises fail each edit rule.

## **Sampling methods**

General theory of the sampling methodology was presented and some post survey activities were discussed. It was decided to add post survey activities in the agenda of the next mission 1.2.5

## **2. Assessment and results**

### **Data transmission to Eurostat**

Preparing the SBS data for transmission to Eurostat and the transmission itself was discussed thoroughly in the first day of the consultation. The process of preparing the data for transmission in Finland consists of gathering the data sources, calculation of SBS variables, Defining the classifications, aggregation, making the CETO flags, formation of series data for encryption, encryption and confidentiality flags with tau Argus and finally making the series CSV files. Validation of the series and the transmission of the series itself was discussed.

At the moment BiH is not obligated to transmit SBS to Eurostat. Transmission has been tested in other BiH statistics, so the processes involved, technical aspects and software such as eDamis and fixed format datafiles are known to BiH personnel. However, the dissemination process should be ready by the end of project timeline and some parts of the data preparation for transmission are complex and hence should be acted on in near future.

Data transmitted to Eurostat should be encrypted and the software available for the purpose, tau Argus, is quite complex to use. BHAS should acquire the software as early as possible to study it and see the work needed for its implementation in the BiH SBS data distribution process. Due to the complex nature of the work involved in technical and methodological aspect, it is recommended that person or persons responsible for dissemination is trained in the use of the software. There is training available on tau Argus by Eurostat. Also it is advisable to name the persons responsible for data transmissions to Eurostat beforehand to focus the training for the right personnel.

Eurostat has produced software to validate SBS series data. The validation software should be assessed and its implementation in the BiH SBS process studied.

It was agreed on that BiH would work to produce data preparation, encryption and dissemination systems and test the transmission itself before the next mission. On mission 1.2.5 the practical problems in making the dissemination system would be discussed.

### **Documentation of the SBS system**

On the second day of the mission documentation in SBS was discussed. SBS Documentation in Finland consists of quality description produced for national use, quality report delivered to Eurostat, system documents, methodological description, work instructions, instructions for filling the questionnaires and other metadata including variables and concepts, classifications, metadata used in production and data collection register and data collection descriptions.

In BiH SBS system documents consist of timeline of activities with deadlines, instructions for filling the questionnaires, frame description, instructions for IT with computation rules for variables and indicators, control rules for data and data entry, formation rules for output tables for the IT, Classifications, codelists and variable lists.

In statistics Finland only the documentation of quality report to Eurostat are in fixed format and national quality report and general statistic descriptions are in fixed format only in the heading level of the documentation. Documentation systems in BiH SBS and SBS Finland are quite similar.

System documents produced in statistics Finland consist of user cases, process flow chart and process flow description. In the documents the implementation rules of SBS system are described. Such documents does not exist in BiH in general. It was discussed that this might be a problem and lead to a situation where some of the information of the statistical process that should be known to and maintained by subject matter specialists (such as preconditions to applying editing rules etc) may become dependent of the IT personnel. This might lead to a situation where IT personnel become subject matter specialists and hold information that is not documented or known to subject matter specialists. It is recommended that these implementation rules are documented and the documents produced are used to exchange information and work instructions to IT personnel.

It was agreed on that BiH would prefill the quality report and on mission 1.2.5 the prefilled quality report would be discussed.

### **Analysis of data editing methods used on SBS data in BiH**

Data editing methods used in BiH survey were discussed on the third and fourth day of the mission and from the consultants point of view it looks that the processes of editing and sampling has been harmonized to a good degree between the institutions. Editing rules based on previous year figures and comparisons of administrative FS data on SBS data were implemented in all the institutions. Outlier methods has been harmonized so that Hidioglou-Berthelot method is used in all the institutions in outlier detection.

As a basis on harmonizing editing and imputation process in the future, forming a document of common E&I strategy would be advisable. Document should contain at least E&I process flow chart, description of common methods and process phases, deviations from these and lists of editing and validation rules used. Document should be reviewed on regular basis.

For the future development of SBS editing and imputation, a set of indicators should be formed. Indicators can be used to monitor the process, that is, to use a set of tables/indicators to see if the process phase has succeeded as was expected when editing and imputation process is happening. Indicators can also be used to develop the E&I process at the end of the production to produce a set of tables to see what was edited and to what extent. Indicators that could be used include for example number of observations breaking the specified editing rules or manual editing rates. Quite large, but not comprehensive, list of useful indicators are presented in the EDIMBUS report Appendix D.

### **Sampling methods**

General theory of the sampling methodology was presented and some post survey activities were discussed. It was decided to add post survey activities in the agenda of the next mission 1.2.5

### 3. Conclusions and recommendations

*The recommendations from this mission are*

1. *Produce the data transmission and preparation system and test it with Eurostat*
2. *Acquire the tau-Argus software to perform the data encryptions required by Eurostat; Name the person/persons responsible for data transmission and train them in the use of the software.*
3. *Form a documentation to contain all the implementation rules of the production system of SBS not yet covered by documentation.*
4. *Prefill the Quality report as part of the data transmission process test.*
5. *Produce a document of common E&I strategy including a common E&I process, with common methods used*

### 4. Topics for the next meeting, action 1.2.5

*The next mission in this component will be mission 1.2.5 from the plan. This mission will take place in the period 24<sup>th</sup> - 28<sup>th</sup> June 2013. The date is dependent on when population census is taking place.*

*The main activities during this mission will be*

1. *Using administrative data (FS) in the production of SBS*
2. *Post-survey activities*
3. *Transmission to Eurostat and Quality report*

*It was agreed that, as homework,*

- *Analysis of the comparison of the SBS and administrative sources variables (FS) would be made.*
- *Analysis of non-response characteristics, out-of-scope units and NACE changes of units would be made.*
- *Work on the data preparation for transmission and transmission itself should be made before the mission.*
- *Quality report should be filled.*

## Annex 1. Terms of reference

<p style="text-align: center;"><b>Structural Business Statistics</b>  <b>3th of Decembra to 7th of Decembar 2012</b>  <b>Terms of Reference - Activity 1.2.4</b>  <b>EU Twinning Project BA 08-IB-FI-03</b>  <b>Agency for Statistics BiH, Zelenih beretki 26, Sarajevo</b></p>	
---	--

Component 1	Business statistics 1.1. Statistical Business Register <b>1.2. Structural Business Statistics</b> 1.3. Construction Statistics 1.4. Retail Trade Statistics 1.5. Tourism Statistics
Component 2	Houshold Budget Survey
Component 3	Institutional Capacity 3.1. Long term strategy 3.2. Metadata and classification system development 3.3. Promotion of dissemination

### Benchmarks

- A) Sample designed (of 2011 reference year) improved by 3rd project quarter
- B) Questionnaire sent out for SBS survey (2011 reference year) by 4th project quarter
- C) Annual SBS results analysed by 8th project quarter
- D) Annual SBS survey methods documented 8th project quarter

### 1.2.4. Activity

Follow up on SBS survey 2011 as reference year

#### The expected activities are:

- Analysis of data editing methods used on SBS data in BiH for 2011 as reference year - advantages and disadvantages; suggestion for data editing of SBS for 2011 as reference year
- Discussion of the existing sampling desing (overview with possible suggestions for possible improvement)
- Discussion of the post-stratification method vs. use of administrative data vs. other methods in solving unit non-response in case of BiH
- Discussion of the calibration process in the case of the existing register/frames in BiH
- Data transmission to EUROSTAT- preparing SBS data to transmission
- Documentation of SBS survey and Quality Report
- Preparation of list of activities that should be done before the next mission
- Preparation of list of topics for the next mission

### Expected output

- ✓ Improving method editing of SBS data
- ✓ Mission report – summarized and detailed version completed

- ✓ General and detailed activity plan and draft ToR for the next mission prepared and agreed by all partners (BHAS-DB, FIS, RSIS participants, experts and RTA)

### Explanation of the Expected output

#### **List of participants**

##### **Agency for statistics of BiH**

Nataša Lučić	Assistant Director in the Sector of Business Statistics
Tima Karačić	Head of the Department Structural Business Statistics,
Mia Šimović	Senior Adviser for Structural Business Statistics,
Bojana Cicović	Senior Official for Structural Business Statistics,
Jasna Hadžić	Head of the Department for sampling,
Alen Mrgud	Senior Official for IT,

##### **Institute for Statistics of Federation of BiH (FIS)**

Alma Čolpa	Senior Official for Structural Business Statistics,
Aida Ljuca	Senior Official for Structural Business Statistics,
Amina Muhić	Head of the Department for Sampling,
Asmira Hotović	Senior Official for IT.

##### **Institute for Statistics of Republika Srpska (RSIS)**

Sladana Nikić	Senior Official for Structural Business Statistics,
Darko Marinković	Senior Official for Sampling design and analysis,
Danica Babić	Senior Official for IT.

##### **Experts**

Pekka Tamminen	Statistics Finland
Ismo Teikari	Statistics Finland

##### **Twinning Project Administration 00 (387) 33/911-992**

Bente Dyrberg	RTA, 00 (387) 66/657-967
Đemka Šahinpašić	RTA Assistant, 00 (387) 63/721-104
Haris Imamović	Interpreter