TWINNING CONTRACT

BA 17 IPA ST 01 20

Further Support to the Reform of Statistics System in Bosnia and Herzegovina

STUDY VISIT REPORT

on

Component 1.3.2 Index of Services Production (ISP) and Services Producer Price Index (SPPI)

Activity1.3.2S

Study visit to Denmark

20-22 September 2022

Version: Final

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List of Abbreviations

BHAS	Agency for Statistics of Bosnia and Herzegovina
BiH	Bosnia and Herzegovina
CBBH	Central Bank of Bosnia and Herzegovina
EC	European Commission
EU	European Union
FBiH	Federation of Bosnia and Herzegovina
FIS	Institute for Statistics of Federation of Bosnia and Herzegovina
MS	EU Member State
RSIS	Institute for Statistics of Republika Srpska
RTA	Resident Twinning Adviser
ToR	Terms of Reference

1. General comments

This study visit report was prepared within the EU Twinning Project " Further Support to the Reform of Statistics system in Bosnia and Herzegovina". and organised under subcomponent 1.3.2 Index of Services Production (ISP) and Services Producer Price Index (SPPI), activity 1.3.2S.

The purpose of the study visit to Statistics Denmark was to get acquainted with the production on Service producer price index (SPPI) and on compiling an Index for service production (ISP) according to the requirements stated by the new EBS regulation. In addition, we were introduced with their electronic questionnaires, data storing, dissemination and the organization of the business statistics production process in Statistics Denmark.

The staff of BHAS, FIS and RSIS would like to express their thanks to all officials and individuals met for the kind support and valuable information which they received during the stay in Denmark and which highly facilitated the work.

This views and observations stated in this report are those of the consultant and do not necessarily correspond to the views of EU, BHAS, FIS, RSIS, CBBH, Statistics Denmark, Statistics Sweden, Statistics Finland and Istat.

2. Lessons Learned

On the first day of the study visit, the participants got a general introduction to Statistics Denmark presented by the department of international consulting.

Statistics Denmark gave a presentation on data storing and dissemination. It was discussed how Statistics Denmark are sending data files to Eurostat in a common and centralised manner.

Then there was a follow up on the last mission in BiH under this component. Representatives from BHAS gave a presentation on the comparison between survey and VAT data. This led to a very good discussion on data sharing internally in BiH between the entities and the state agency. Furthermore, there was a good discussion on what to focus on when making error checks. In addition, there was a good discussion on cost of resources in the case of switching from using survey data to using administrative VAT data for compiling the ISP.

Statistics Denmark then presented how data validation on the ISP is in Denmark and the final topic of the day was the IT application used for compiling ISP in Denmark. The participants from BiH got an insight in how to use Excel for forecasting non-observed observation (prices) and going from quarterly to monthly data.

Denmark Statistics and the statistical offices of Bosnia and Herzegovina met to discuss cooperation needs regarding the service producer price index (SPPI) programme. Denmark Statistics presented their suggested approach to price statistics development and key fundamental areas and concepts to underpin the cooperation project. Bosnia and Herzegovina presented an overview of their current SPPI coverage and future aspirations aligned with compliance to EU regulations. Discussions covered both technical and strategic aspects and both parties will utilize outcomes of this session to populate a terms of reference for an upcoming mission focused on price statistics.

The afternoon was dedicated on how to conduct electronic surveys. Statistics Denmark gave presentations on how it is done in general in Statistics Denmark and gave two examples on electronic questionnaires.

The third day was dedicated to continuing the work on developing of ISP in BiH. In the first session, Statistics Denmark gave a presentation on the general experience working with data for NACE groups J, L and M including validation. The participants from BiH presented a table with information regarding possible deflators that can be used for the different NACE groups in calculating the ISP. They still needed some information regarding the content of certain CPIs and they need to fill in with information where there are "gaps" in the table.

In the afternoon on the third day, Statistics Denmark presented the theory behind the cubic spline model and the pro's and con's regarding that model vs. a more "normal" linear interpolation model.

The study visit concluded by summing up the visit and the participants from BiH got a few task to do before a next mission in BiH.

3. Conclusions and recommendations

The study visit to Statistics Denmark fulfilled all our expectations, particularly in part of getting detailed information on their experience on production of Index of Services Production (ISP) and Services Producer Price Index (SPPI). Having in mind that we still do not produce ISP, experience gained on SV we will use as bases for our further development activities.

We were acquainted with IT application used for ISP, the main functionalities developed in-house by Statistics Denmark and with their procedures used for data editing and validation process. Common opinion of all BC participants is that it is important to develop appropriate IT application based on GSBPM model, which covers the most important stages of statistical production process. Since the IT application for ISP is still in the initial phase of planning, the lessons learned during the study visit will be very helpful in our further work.

One of the main priorities for statistical institutions in BiH is modernization of data collection by introducing electronic questionnaires in order to increase our efficiency and to reduce burden for reporting units. So far, statistical institutions in BiH use only traditional statistical surveys (paper questionnaires) for production of STS turnover indices on monthly and quarterly basis. The statistical institutions in BiH are committed to improve current STS production system by introducing electronic data collection and additional improvement of current IT solutions, which are used in production of STS turnover indicators. All three statistical institutions in BiH are facing lack of IT staff, which means that development of comprehensive statistical production system will requires quite a long time and we will have to be oriented more on outsourcing for development of suitable IT application.

Statistics Denmark presented their general approach to development of price statistics with focus on the Service producer price index (SPPI). This was excellent opportunity to exchange our practices with colleagues from Statistics Denmark and to get their recommendations regarding future development of SPPI in BiH. We had very productive discussions that will be used in order to better prepare for upcoming missions focused on SPPI.

In addition, we were introduced with two possible models that could be used for forecasting and interpolation of quarterly SPPI to monthly data. Experts introduced us with Excel model that is more suitable for use in our production environment instead of Cubic Spline model.
This SV provided us with comprehensive overview on production of ISP/ SPPI in Statistics Denmark and many useful information on their IT production system, which will contribute to our future work on development of ISP/ SPPI and further improvement of IT solutions used in BiH.

We are very satisfied with gained knowledge and possibility to learn from their broad experience. Furthermore, we had a very productive discussion on various methodological issues important for our work in this statistical domain. All received materials and presentations will be further analysed and made available to all interested parties in the statistical system of BiH.

Actions needed for moving forward

Action	Deadline	Responsible institution / person
Find prices for as many NACE groups as possible and fill the information in the Excel-sheet BiH has started	Before next mission	BC
Expand the Excel-sheet with information on importance of the NACE group (that can be turnover or value added eg.)	Before next mission	BC
Calculate ISP (for at least some NACE groups) – if price index is missing for a sub-group look at the weight for that sub-group. If weight is low then ignore that group in calculating the index. If weight is high use a index for sub-group close to. (describe choices in metadata)	Before next mission	BC
Use the provided Excel model to forecast missing values and to go from quarterly data to monthly data	Before next mission	BC

Annex 1. Programme

Component 1.3.2 ISP/SPPI – Study visit agenda

Tuesday 20th – Day1 – Meeting room: Adolph Jensen (3410)

Time	Topic	Staff from Statistics Denmark
9:30-10:30	Welcome & introduction to Statistics Denmark	TBA
10:30-11:00	Data warehouse: Storing and dissemination	Jacob Solander
11:00-12:00	Follow up on last mission in BiH and reflections	Lina Pedersen & Mathias Bluhme
12:00-13:00	Lunch	Lina Pedersen & Mathias Bluhme
13:00-15:00	IT application used in the work of ISP Data editing & validation of ISP	Lina Pedersen & Mathias Bluhme
15:00-15:30	Conclusions of day 1	Lina Pedersen & Mathias Bluhme

Wednesday 21th – Day2 - Meeting room: Adolph Jensen (3410)

Time	Topic	Staff from Statistics Denmark
9:30-10:00	Welcome to day 2	Lina Pedersen & Mathias Bluhme
10:00-12:00	Introduction to SPPI Development of SPPI in BiH Practical examples of calculations of SPPI's in BiH Current status of SPPI IT application in BiH	Nicklas Elversøe & Rohan Draper
12:00-13:00	Lunch	Lina Pedersen & Mathias Bluhme
13:00-15:00	An introduction on the web questionnaire Example on electronic questionnaire on prices Example on electronic questionnaire on turnover	Maria Møllgaard & Lise Stahl (13.00-13.30) Nicklas Elversøe (13:40-14.10) Kari Arildsen (14.20-14.50)
15:00-15:30	Conclusions of day 2	Lina Pedersen & Mathias Bluhme

Thursday 22th – Day3 - Meeting room: Bestyrelsen (3045)

Time	Topic	Staff from Statistics Denmark
9:30-10:00	Welcome to day 3	Lina Pedersen & Mathias Bluhme
12:00-13:00	Lunch	Lina Pedersen & Mathias Bluhme
13:00-13:30	The Danish experience with the production of ISP for NACE J, L & M	Lina Pedersen & Mathias Bluhme
13-14:30	Cubic Spline model	Søren Kühl
13:30-15:00	Conclusions of day 3 Study visit report Topics for next mission (ToR)	Lina Pedersen & Mathias Bluhme

Annex 2. Persons met

Agency for Statistics of Bosnia-Herzegovina
Adnan Ceric
Alen Bajramović
Maja Hadži-Stojanov

Institute for Statistics of Federation of Bosnia-Herzegovina
Ademira Veličanin,
Ajdina Jerković
Nikola Radović

Institute for Statistics of Republika Srpska
Aleksandra Đonlaga
Jelena Glamočika
Pero Kazanović

Twinning Project

Larisa Muslimovic, Interpreter

Statistics Denmark

Lina Pedersen
Mathias Bluhme
Jesper Ellemose
Jacob Solander
Nicklas Elversøe
Rohan Draper
Kari Arildsen
Søren Kühl
Maria Møllgaard
Lise Stahl

Annex 3. Terms of Reference for the study visit

<u>Terms of Reference</u>

EU Twinning Project BA 17 IPA ST 01 20

Component 1.3.2, activity S (Study Visit to Denmark) - Index of Service Production/Service Producer Price Index
September 20th – 22th

Venue: Statistics Denmark, Sejrøgade 11, 2100 Copenhagen East

Activity 1.3.2 S: Index of Service Production/ Service Producer Price Index

1. Mandatory result

Sub-result 1.3 Short Term Statistics (STS) enhanced

Index of Service Production (ISP) is currently not calculated in BiH. It is therefore a major priority in the project to be able to publish and deliver Index of Service Production to Eurostat at the of the project period. The statistics are compiled based on turnover index from the statistic Purchases and Sales by Enterprises and on price index from Producer Price Index for Services (SPPI). In this way the subcomponent relates to the work on SPPI carried out by the previous Twinning project and continued in this project.

Indicator / Relevant Milestones / Internal deadlines:

- Indicators for ISP and SPPI published and delivered to Eurostat

2. Purpose of the activity

Presentations made by BiH participants
- Development of SPPI in BiH
- Practical examples of calculation of SPPIs in BiH
- Current status of SPPI IT application in BiH

Presentations made by Statistics Denmark
- An introduction to SPPI in Denmark

- An introduction on web questionnaire used by Statistic Denmark
- An example on electronic web questionnaire on prices
- An example on electronic web questionnaire on turnover

- IT application used in the work of ISP
- Data editing and validation of ISP
- Deflation use of SPPI and the deflation software for ISP
- Imputation and index calculation - A theoretical examination of the Cubic Splice model when going from quarterly- to monthly data as well as a practical example
- Danish experiences with the production of ISP for NACE J,L and M
- Data warehouse, storing and dissemination for ISP

3. Expected output of the activity

- That the participants have gained knowledge about on how ISP is compiled, stored and disseminated in Denmark
- That the participants have received a review on how SPPI is compiled in Denmark
- That the Danish SPPI experts have gotten a short introduction to how SPPI is compiled in BiH as the work on SPPI in BiH is on the project agenda for the autumn 2022
- Mission report