

TWINNING CONTRACT

BA 17 IPA ST 01 20



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



MISSION REPORT

Activity 1.4B: R software training - Basic training
Subcomponent 1.4 - R software training

Mission carried out by
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October 16-18, 2023

Version: Final

Expert contact information

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Table of contents

Executive Summary	Fejl! Bogmærke er ikke defineret.
1. General comments	4
2. Assessment and results	4
3. Conclusions and recommendations	4
Annex 1. Terms of Reference for the current mission	6
Annex 2. Persons met	7
Signatures	7

List of Abbreviations

BC	Beneficiary Country (BiH)
BHAS	Agency for Statistics of Bosnia and Herzegovina
BiH	Bosnia and Herzegovina
CBBH	Central Bank of Bosnia and Herzegovina
EU	European Union
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
RTAA	Resident Twinning Adviser Assistant
ToR	Terms of Reference

1. General comments

This mission report was prepared within the EU Twinning Project "Further Support to the Reform of the Statistics System in Bosnia and Herzegovina". It was the second mission to be devoted to the Subcomponent 1.4, R software training, of the Project.

The purposes of the mission were to familiarize the participants with performing simple tasks using R, as follows:

- Import of data to R
- Small analysis in R
- Output and presentation of data from R

The consultant would like to express his thanks to all officials and individuals from Bosnia and Herzegovina met for the kind support and valuable information, and which highly facilitated the work of the consultant.

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 Finland, Statistics Sweden and The Italian National Institute of Statistics.

2. Assessment and results

This mission covered the following topics:

- Introduction to R and RStudio
- Datatypes in R and basic syntax
- Packages and reading external data
- Data manipulation and tidyverse
- Introduction to survey sampling with R

The style of the training was a mix of presentations, live coding, and exercises. All material presented is available via Github at https://peterstoltze.github.io/R_BiH_2023/.

All participants were active during the three days, and we adapted some of the material along the way. Specifically, we also investigated how large language models (like ChatGPT by OpenAI) can be a resource when coding in R. However we also learned, that ChatGPT in version 3.5 is a couple of years behind and thus may come up with solutions that albeit working are no longer the preferred way of solving a specific task according to the lifecycle stages¹.

3. Conclusions and recommendations

The training went more or less as planned. Due to active participation resulting in many questions, presenting results from R in the form of R Markdown² output was unfortunately not covered this time.

¹ <https://lifecycle.r-lib.org/articles/stages.html>

² <https://rmarkdown.rstudio.com/>

To maintain and further strengthen the competencies acquired during the training, the staff participating should ideally try to implement some of their task using R. Of course, three days of training does not make it possible to abandon all other tools and solely rely on using R, but it should be fully possible to implement elements and thus maintain and extend the competences. From an organizational point of view, allowing time to these activities including time to exchange current experiences (for example using a show-and-tell format) could be a worthwhile investment. It may also be required that the organizations investment in some R specific infrastructure (like common metadata, e.g. classifications, or streamlined data access).

Annex 1. Terms of Reference for the current mission

Terms of Reference

EU Twinning Project BA 17 IPA ST 01 20

Component 1.4 - R software training

Monday 16 October (10:00 hrs.) – Wednesday 18 October (15:30 hrs.) 2023

Venue: Republika Srpska Institute of Statistics, Vladike Platona bb, Banja Luka.

Activity 1.4B: R software training - advanced training

1. Mandatory results

Staff skills in the use of R software increased through training sessions

2. Purpose of the activity

To familiarise the participants with performing simple tasks using R, as follows:

- Import of data to R
- Small analysis in R
- Output and presentation of data from R

3. Expected output of the activity

Making the participants capable of performing simple analysis using R

Annex 2. Persons met

BHAS (participated remotely)

Maja Hadzi-Stojanov, Senior Officer for Price Statistics
Emina Mehanovic, Junior Officer for Transport Statistics
Anita Brkovic, Senior Advisor for Construction Statistics
Fahir Kanlic, Head of Department for Services Statistics
Alen Bajramovic, Head of Department for Industry and Construction Statistics

RSIS

Danica Babic, Senior Statistician for Structural Business Statistics
Jelena Kljajic, Senior Statistician
Jelena Komljenovic, Senior Statistician for Processing Industry, Mining and Energy Statistics
Dragana Mandic, Senior Statistician for Migration Statistics
Natasa Gojkovic, IT Officer

FIS

Merima Beganovic, Senior Advisor for Business Services
Adnan Lusija, Junior Associate
Adis Mizdrak, Senior Officer for Technical Affairs and Data Entry

RTA Team:

Niels Madsen

Signatures

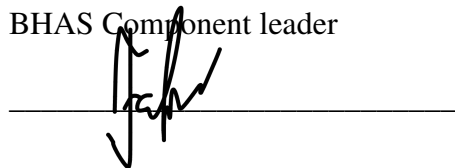
The content of this report is approved by: (sign and date)

MS Expert

November 5, 2023



BHAS Component leader



FIS Component leader



RSIS Component leader



RTA

