

# **TWINNING CONTRACT**

**BA 12 IB ST 01**

## **Support to the State and Entity Statistical Institutions, phase VI**



## **MISSION REPORT**

**on**

### **Activity 2.3.1.2**

### **Planning for a pilot survey for producer (output) prices in construction**

Mission carried out by  
Sigrid Krogstrup Jensen, Statistic Denmark  
Jasna Pugar, Croatian Bureau of Statistics  
Christoph Schäfer, Destatis

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Expert contact information

*Sigrid Krogstrup Jensen*  
*Statistics Denmark*  
*Sejrøgade 11*  
*DK-2100 Copenhagen Ø*  
*Denmark*  
*Tel: 3917 3456*  
*Email: sij@dst.dk*

*Christoph Schäfer*  
*Destatis*  
*Merzeburger Strasse 2*  
*D-06110 Halle*  
*Germany*  
*Tel: (0345) 2318 203*  
*Email: Schaefer@stala.mi.sachsen-anhalt.de*

*Jasna Pugar*  
*Croatian Bureau of Statistics*  
*Ilica 3*  
*10000 Zagreb*  
*Croatia*  
*Tel: +385 977367740*  
*Email: jasna.pugar@gmail.com*

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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

## Executive Summary

In Germany Producer Price Indices for construction are calculated using the standard components methods. The following indices are calculated:

Type of index	Residential buildings	Non-residential buildings	Other types	Maintenance
Type of construction	Residential building in total	Office buildings	Roads	Maintenance of buildings
	One-family houses	Industrial buildings	Road-bridges, sewers and sewage treatment	Maintenance of dwellings
	Flats			

The weights are derived from bills of quantities of actual construction works in the different categories. Prices for each construction activity are then collected from the construction companies.

The basis for a weighting system for BiH should be one or more representative buildings. A typical building will be one that has the characteristics of the average newly constructed buildings in BiH. For the case of BiH a solution would be to ask IPSA or a similar agency to draw up a sketch of a fictitious construction project of a residential building that contains these average characteristics. For this project some standard components should be defined and a bill of quantities should be written so the costs shares for the standard components can be calculated.

In order for IPSA to construct an average dwelling they need at least to know the m<sup>2</sup> and the price class/quality of the building. Furthermore, they need to know how many floors and basement or no basement.

It was decided to make one questionnaire to send to all reporting companies rather than customising them for each company. The template made during this mission is preliminary in the sense that the activities will have to be updated once the weights have been identified.

A detailed plan for the pilot survey for the CPPI was established.

With regards to prices per m<sup>2</sup>; before the next mission, both RSIS and FIS will have collected prices per m<sup>2</sup> for residential buildings. At the next mission it should be discussed if and how the data should be published.

## 1. General comments

This mission report was prepared within the Twinning Project "Support to the State and Entity Statistical Institutions, phase VI". It was the second mission to be devoted to producer (output) prices in construction within Component 2.3.1.2 of the project.

The purposes of the mission were:

- Presentation of the German experiences on Standard Component Method for CPPI
- Defining of proper model of weighting structure (that will be used for calculation of CPPI (typical construction/dwelling))
- Discussion with stakeholder about request for preparation of Project task (typical construction/dwelling which comprises standard construction works, materials used, etc.)
- Preparation of draft version of questionnaire for Pilot survey on CPPI
- Adoption of General Plan for development of CPPI with timetable for Pilot survey

The consultants 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 Bosnia-Herzegovina 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 or Statistics Denmark, the Croation Bureau of statistics and Destatis.

## 2. Assessment and results

During the mission the following outputs have been achieved:

- The methodology of the German CPPI with SCM was presented and explained
- It was discussed how the German methodology could be adopted in BiH
  - A comprehensive example of the calculation method was produced
- It was established that weights will be calculated by having IPSA create two fictitious residential building which are representative of the construction of residential building in BiH
- A construction expert from IPSA took part in the mission and it was discussed what information they would need to create drawings and bills for two typical residential building
- On the basis of building permits data from FIS, characteristics for two typical residential were calculated for the Federation
  - This will also be done for Republic Srepska using RSIS building permits data
- A preliminary draft version of the questionnaire was made
- The target population was established
- It was decided that, if the data from the pilot survey is of sufficient quality it should be used at base year data
- A detailed plan for the pilot survey was produced

## Presentation of German experiences on SCM for CPPI

In Germany Producer Price Indices for construction are calculated using the standard components methods. The following indices are calculated:

Type of index	Residential buildings	Non-residential buildings	Other types	Maintenance
Type of construction	Residential building in total	Office buildings	Roads	Maintenance of buildings
	One-family houses	Industrial buildings	Road-bridges, sewers and sewage treatment	Maintenance of dwellings
	Flats			

Each index has its own weight structure. The weights are derived from bills of quantities of actual construction works in the different categories. The bills are collected from construction companies. When the German public sector needs to build new building the construction companies compete for the task by setting forth a tender. A tender comprises of a bill of quantities. In Germany the bills should follow a certain standard – the “VOB”, a structure that defines standardized “construction works” connected to DIN 276. Since VOB is mandatory for tenders on new construction in the public sector the companies have started to apply it any time they write up a bill of quantities – also for construction in the private sector.

When establishing or updating the weighting structure, DESTATIS collect bills for relevant construction projects. Costs shares are calculated for each of the construction activities defined by DIN 276. For each index these cost shares are averaged to find the weights of the activities. The weights are updated every 5 years in accordance with Eurostat regulations.

Prices for each construction activity are then collected from the construction companies. Prices are collected on a quarterly basis. Companies are asked to report the price for the middle month of the quarter, i.e. in february, may, august and november. The German questionnaire can be found in annex 3.

For each activity price an elementary index is calculated on company level by dividing the price in the current period with the base price, i.e. the price in the reference period. Each collected price has a corresponding base price.

The elementary indices are then grouped by activity rather than company. To find indices for each activity a geometric mean of the elementary indices belonging to the activity is calculated. These indices are then used to calculate the total indices using the different weighting structures.

An example of these calculations can be found in annex 4.

## Defining a proper model of weighting structure for CPPI

The basis for the weighting system should be one or more representative buildings. A typical building will be one that has the characteristics of the average newly constructed building in BiH. These average characteristics could be identified by examining Building Permits data. When the typical building(s) has (have) been identified data for weights must be calculated.

For the case of BiH a solution would be to ask IPSA or a similar agency to draw up a sketch of a fictitious construction project of a residential building that contains these average characteristics. For this project some standard components should be defined and a bill of quantities should be written so the costs shares for the standard components can be calculated.

An IPSA representative has taken part in the mission. According to this representative there is a legal framework that could be used for defining the standard components in such a way that the companies will be able to report the proper prices.

### **Discussion with IPSA representative about preparation of a typical residential building**

According to FIS building permits data, it has been established that for BiH a residential building with three or more dwellings and a one dwelling building are the most common new constructions of residential buildings in the FBiH.

In order for IPSA to construct an average dwelling they need at least to know the m<sup>2</sup> and the price class/quality of the building. Furthermore, they need to know how many floors and basement or no basement.

For the mission only data from FIS was available. On the basis this building permits data from 2013 and 2014 two typical new construction projects for FBiH; a one dwelling building (cc 1110) and a multi dwelling building (cc 1122) were specified. The specifications of the buildings are given in the table below:

<b>Typical residential building</b>	<b>One dwelling building (cc1110)</b>	<b>Multi dwelling building (cc1122)</b>
<b>Number of dwellings per building</b>	1	3
<b>Useful area per building</b>	137 m <sup>2</sup>	280 m <sup>2</sup>
<b>Levels</b>	Ground floor level Attic level	Basement level Ground floor level 1st floor level Attic level
<b>Price class</b>	Medium	Medium
<b>Terrain</b>	Average	Average

This data should also be generated for RSIS in order to identify typical residential buildings for all of BiH. When this has been done the specifications should be sent to IPSA. With this information IPSA will give an offer on the price of constructing typical buildings to be used for deriving weights for the CPPI. The buildings should comply with the BiH regulations for construction of new dwellings.

### **Preparation of a draft questionnaire**

During the mission a draft template for the questionnaire has been established. The draft template can be found in annex 5. It was decided to make one questionnaire to send to all reporting companies rather than customising them for each company.

The questionnaire will ask for prices for the different construction activities included in constructing the typical building specified by IPSA. The specifics of these activities remain unknown until the buildings have been drawn and the weights have been established. Thus, the template made during this mission is preliminary in the sense that the activities will have to be updated once the actual construction activities have been identified.

The reporting units should belong to NACE F divisions 41, 42 and 43 and the relevant KAU classes should also be included. The reporting units should be chosen from the BiH statistical business register using some recognised form of sampling. E.g. cut-off sampling with regards to number of employees, as in Croatia, or to turnover. Random sampling is not a demand.

The companies are asked to report prices of the construction activities. To help the companies fill in the correct prices, the questionnaire contains some prefilled fields:

- Description of the activity, incl. number of units for which the price should be reported
- Unit measure of the activity, e.g. m<sup>2</sup>, m<sup>3</sup>, m, etc.

Companies must be asked to report market prices. The companies should only fill in prices for activities they actually perform or have performed. If the companies usually perform the activity but just have not done them in the reporting period they should report an estimated price, i.e. a model price. The companies should also explain, under „Notes and comments”, why the prices change if that is the case.

Instead of „Notes and comments” companies could be asked to indicate reason(s) for price change(s) from the previous quarter with an (x) in boxes provided specify changes below:

Material costs  
Labour costs  
Competitive factors  
Physical content  
Terms of sale  
Others - Please describe

See also optional solution in Annex 5 of this report (English version of a draft questionnaire CPPI).

To obtain data for the base period, i.e. 2015, prices for one or more quarters should be collected for 2015. Pilot survey data could be used for as base prices. If the pilot survey data is not of sufficient quality, the reporting units should be asked to report both a price for 4th quarter of 2015 and for the 1st quarter of 2016 when the regular survey is implemented. Data for the 4th quarter of 2015 would then serve as base data. Prices for 4th quarter of 2015 will be sufficient as base prices according to Eurostat recommendations with regards to chain-linking.

### **Adoption of a general plan for the development of a CPPI with time table for the pilot survey**

Firstly, the pilot survey should be established. The necessary steps are described in details in annex 6, complete with dates and responsible statistical institution(s).

During the last two quarters of 2015 a framework for calculation of the indices could be developed if calculations are to start by 2016. This framework will be finalized when it can be tested with actual data, i.e. when data has been collected for the base period and one consecutive period.

### **Temporary approximation of CPPI by prices per m<sup>2</sup>**

With regards to prices per m<sup>2</sup>; before the next mission, both RSIS and FIS will have collected prices per m<sup>2</sup> for residential buildings. At the next mission it should be discussed if and how the data should be published. It should also be discussed if the collection of prices per m<sup>2</sup> should be continued after implementing the CPPI using SCM.

## **3. Conclusions and recommendations**

On the basis of the activities carried out in the mission the following expert recommendations were given:



- The CPPI for BiH should be calculated using the German methodology or one very similar to this
- Pilot survey data can be used as prices for the basis year, which are essential to the calculations of CPPI
- According to FIS building permits data, it has been established that for BiH a residential building with three or more dwellings and a one dwelling building are the most common new constructions of residential buildings in the FBiH
  - The same calculations must be conducted by RSIS for Republic Srpska
- IPSA's work should begin as soon as possible, so that the weights and standard components of construction can be identified and the final version of the questionnaire will be finished in the 3rd mission
- If possible, the activities given in the questionnaire should follow a commonly known structure such as the Construction Norms (GN). If such a structure of satisfactory quality does not exist the BHAS should establish one for the development and calculation of the index. This should be done in cooperation with a construction expert, e.g. IPSA
- The descriptions of the construction activities, given in the questionnaire, should be made by or in cooperation with a construction expert.
  - A construction expert should be invited to join the next mission to help complete the questionnaire
- The plan for the pilot survey should be followed strictly
- The framework for calculation of the indices should be based on the German methodology

It was concluded that the activities given below should be performed before the third mission:

Action	Deadline	Responsible institution(s)
Analyse Building permits data for 2013 and 2014 by quarters for FIS and RSIS	March 20 <sup>th</sup> 2015	BHAS – FIS and RSIS to provide the data for analysis to BHAS.
Make a decision on typical building for BiH	March 23 <sup>th</sup> 2015	BHAS with FIS and RSIS
Request with the specifications for making typical building's "Bill of quantities" is sent to IPSA	March 25 <sup>th</sup> 2015	BHAS
Drawings on building projects are retrieved from IPSA	Before 3 <sup>rd</sup> mission	BHAS
Define the standard components with help from IPSA and consultations with MS experts	Before 3 <sup>rd</sup> mission	BHAS
Adjust questionnaire – prepare 2 <sup>nd</sup> draft of questionnaire	Before 3 <sup>rd</sup> mission	BHAS
Calculate weights	Before 3 <sup>rd</sup> mission	BHAS
Analyse the reporting units from the business register. Further analysis and final decision about selection of units will be made on 3 <sup>rd</sup> mission	Before 3 <sup>rd</sup> mission	BHAS and all entities
Data collection for prices per m <sup>2</sup> for the 1 <sup>st</sup> quarter of 2015	Before 3 <sup>rd</sup> mission	FIS and RSIS

## **Topics for the next mission**

- Analysis of data collected through K KPS GRAĐ-41 for the 1<sup>st</sup> quarter of 2015. Discussion about the decision on publishing prices per m<sup>2</sup> for residential buildings and continuation of conducting this survey for primarily for national purposes, after introducing CPPI survey.
- Reviewing the questionnaire for the CPPI with SCM with regards to construction activities and description thereof
  - Invite construction experts from several construction companies
- Finishing the questionnaire for the CPPI with SCM, incl. instructions
- Plan data collection for the pilot survey in detail
- Discuss framework for data collection and calculation of the index, incl. IT
  - Invite the relevant IT-staff to join the mission

## Annex 1: Terms of Reference

### EU Twinning Project BA-12-IB-ST-01

#### Terms of Reference

#### **Component: 2.3.1 Short-Term Statistics**

**6<sup>th</sup> – 10<sup>th</sup> October 2014**

**Sarajevo, Ferhadija 11, V floor**

#### **Activity**

2.3.1.1 Assessment of current situation. Introducing producer (output) prices in construction in BiH

#### **Benchmarks**

- Plan for development of PPIC done by 2nd project quarter
- Draft questionnaires and supporting documentation prepared by 2nd project quarter
- Pilot surveys for PPIC conducted 3rd project quarter
- First results analyzed and questionnaires redesigned by 6th project quarter
- Methodological document developed by 8th project quarter

#### **Purpose of activity**

The expected activities are:

- Assessment on the current situation
- Overview over EU regulations and requirements in this area
- Presentation of the Croatian and Danish experiences for PPIC
- Frame analysis of reporting units for pilot for PPIC
- Analysis of different possible (available) sources for data collection on producer (output) prices in construction.
- Evaluation of the existing data.
- Preparation of general Activity Plan for development of PPIC statistics
- Discussion on draft of questionnaire and instruction for filling the questionnaire for pilot survey prepared by BHAS

#### **Expected output**

- EU regulations, Croatian and Danish experiences presented
- Possibilities for data collection discussed
- Frame of reporting units defined
- General Activity Plan for PPIC surveys agreed
- Draft questionnaires for pilot surveys adopted

<b>List of Participants</b>
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**Experts**

Sigrid Krogstrup Jensen, Statistics Denmark

Jasna Pugar, Croatian Bureau of Statistics

**Agency for Statistics of BiH**

Fahir Kanlić, Head of Department for Industry and Construction Statistics

Radomir Mutabdžija, Senior officer in Department for Industry and Construction Statistics

Anita Brković, Senior officer in Department for Industry and Construction Statistics

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

Nusreta Imamović-Kaljanac, Head of Department for Industry, Construction and Energy Statistics

Edina Dulić, Senior adviser for Construction Statistics

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

Biljana Đukić, Head of Department for Industry, Construction and Energy Statistics

Želimir Radišić, Senior officer for Construction Statistics

**Twinning Project Administration**

Søren Leth-Sørensen, RTA

Djemka Sahinpašić, RTA Assistant

<b>Agenda</b>
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**Location: Sarajevo**

Time	Day	Place	Event	Purpose / Detail of event
10:00-12:00	Monday, morning		BC experts briefing with the RTA	To discuss the mission, introduce the experts to each other, discuss previous experience
13:00-15:30	Monday, afternoon		Workshop with BC Experts	Welcome and Introduction Assessment on the current situation Overview over EU regulations in this area BC participants and IPA experts
8:30-15:30	Tuesday, morning		Workshop with BC Experts	Presentation of the Croatian and Danish experiences (methodology and practical examples)  IPA experts
	Tuesday, afternoon		Workshop with BC Experts	Frame analysis of reporting units for pilot survey for PPIC Evaluation of the existing data BC participants and IPA experts
8:30-15:30	Wednesday, morning		Workshop with BC Experts	Analysis of different possibilities for data collection on producer (output) prices in construction.  IPA experts and BC participants
	Wednesday, afternoon		Workshop with BC Experts	Preparation of general Activity Plan for development of PPIC statistics
8:30-15:30	Thursday, morning		Workshop with BC Experts	Presentations of draft questionnaire for pilot survey (BHAS) Discussion and agreement on draft questionnaire for PPIC
	Thursday, afternoon		Workshop with BC Experts	Preparation for the next mission (list of activities to be done before the next mission)
8:30-13:00	Friday, morning		Meeting with BC Experts	Presentation of results, Agreement on report. Implications for the next activities (missions);

## **Annex 2: Persons met**

### **Agency for Statistics of BiH (BHAS):**

Fahir Kanlić, Head of Department for Industry and Construction Statistics

Anita Brković, Senior officer in Department for Industry and Construction Statistics

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

Nusreta Imamović-Kaljanac, Head of Department for Industry, Construction and Energy Statistics

Edina Dulić, Senior adviser for Construction Statistics

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

Želimir Radišić, Senior officer for Construction Statistics

### **Twinning Project Administration:**

Søren Leth-Sørensen

Djemka Sahinbasic

### **Experts**

Sigrid Krogstrup Jensen, Statistics Denmark

Jasna Pugar, Croatian Bureau of Statistics