

**Metadata and classification system development
Bosnia and Herzegovina**

Project BA 08-IB-FI-03

MISSION REPORT

on


Metadata system II

Component 3, Activity 3.2.3

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List of Abbreviations

BiH	Bosnia and Herzegovina
BHAS	Agency for Statistics of Bosnia and Herzegovina
FIS	Federal Institute of Statistics of the Federation of Bosnia and Herzegovina
RSIS	Republic Institute for Statistics of the Republika Srpska
GSBPM	Generic Statistical Business Process Model
DDI	Data documentation initiative
SBS	Structural Business Statistics

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1. Introduction

This mission report was prepared within the state and entity statistical institutions in Bosnia and Herzegovina. It was the *third* mission to be devoted to *topic 2* within Component 3 (*Strengthening the Institutional Capacity of BIH Statistical System*) of the project concerning Metadata and Classification System Development for the BiH statistical system.

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 and Herzegovina, and which highly facilitated the work.

The views and observations stated in this report are those of the consultants and do not necessarily correspond to the views of Statistics Denmark or ISTAT.

2. Objectives in general

Implementation of the activities foreseen in this project will significantly contribute to the fulfillment of priorities stated in European partnership for BiH (Article 1. Background in Twinning Contract):

Short-term priorities:

“- Implement the agreement between the Entities in the statistical system on improvement of the work of the Central Statistical Agency in Bosnia and Herzegovina and improve the range and quality of statistics, in particular at State level.”

Medium-term priorities, European standards, Sectoral policies:

“- Develop reliable economic statistics and build up institutional capacity to produce and publish basic statistical data harmonised with European standards, in particular in the areas of national accounts, agricultural, macro-economic and business statistics, and social statistics, including education, labour and health statistics
- Carry out the population census”

Component 3 in the project - Strengthening the Institutional Capacity of BIH Statistical System - comprises long term strategy and metadata. The objectives for component 3 are: a) sustainable development and b) better communication between the three statistical institutes and between providers and users of the statistics. Overview of elements in *Component 3 Strengthening the Institutional Capacity of BIH Statistical System*:

This component is planned to strengthen the institutional capacity for the BiH statistical sector as a whole. This horizontal component should

- *Improve practical co-operation between the three institutions.*
- *Such co-operation requires the further work towards*
 - *a common IT architecture*
 - *the organisation of joint meetings, and*
 - *common access for the statistical managers in BiH to experience and know-how in the organisations*
 - *co-ordination and implementation of statistical work*
 - *staff in the different Statistical Institutions should have the availability of joint training and other learning experiences to acquire the same knowledge on harmonised methods and the same practical experience to apply these harmonised methods*

The benchmark for metadata and classifications (sub-component 3.2) are

- *Metadata strategy developed by 8th project quarter*
- *Database model with data flow diagram prepared by 8th project quarter*
- *Plan on development of software for classification database by 8th project quarter*

This includes technical documentation, including selection of IT tools for Metadata system, prepared Development plan and preparatory activities carried out for Classification server.

3. Activities and expected output of the mission

The expected activities are:

1. Further elaboration of metadata strategy. Consultations and follow up on metadata systems in relation to results from earlier missions
2. Discussing about strategy for implementing GSBPM and metadata strategy
3. Meeting with management
4. Meeting with external and internal users

Expected output

1. Draft of GSBPM strategy
2. Draft of metadata strategy
3. Improved knowledge of participants
4. Detected user needs

4. Recommendations

The recommendations below and the content of the attached Strategy on Business Process, Metadata and Quality are based on evaluations of the situation in Bosnia. The philosophy behind is expressed in the attached strategy: It is important to agree on objectives and then move forward with manageable steps taking international standards and standards-solutions into account as much as possible.

Strategy:

- Elaborate Strategy for Business Processes and Metadata

Standards

- Use GSBPM for business processes. Use SDMX-ESQRS/ESMS for quality-metadata. Use DDI and SDMX for documentation and exchange of data. As a start implement only basic micro-data-parts and quality metadata.
- Business processes: Documentation of 6 surveys using templates presented at mission
- Continue work on collecting information on existing metadata

User needs:

- Inform external user about the ongoing work on metadata and collect comments. Prepare detailed meetings with external users based on comments.
- Regarding internal user it is recommended to discuss needs for metadata as an integrated part of the work on documenting business processes.

Organisation

- Establish organization for Business Processes and Metadata.
- Member of group: subject-matter-specialists, IT-specialist and methodologist from each institution.

Tools

- Use Colectica as metadata-tool. Use Bizagi and Word as tools for documentation of business processes.

5. Issues and detailed recommendations

<u>Issue</u>	<u>Recommendation</u>
1. Standards and tools	Standards and tools introduced and tested. Recommended decisions prepared for management. Draft version of Strategy for business processes and metadata-prepared.
2. Use of GSBPM	Prepare documentation of business processes on six surveys.
3. Current situation on metadata	<p>It is recommended to collect the following information for every survey: a) data and application and b) metadata (Methodology and quality metadata, Concepts, variables, and Classifications/codelists). The collection for each survey must show the situation in BHAS, FIS and RSIS.</p> <p>Next mission: SBS and others in repository. It is assumed that we use Colectica as metadata-tool.</p>

4. Location and responsibility of the common metadatabase	It is recommended to build a centralised common metadatabase in order to move towards a situation where metadata can be established as a common resource. It should be possible to update metadata by and from all three parties. In order to make sure that all three parties work in the same direction it is recommended that each party is chairing the process of data and processes for one year and after one year the responsibility moves to the next part. If one of the parties has their own surveys they can use the common metadata system but it is not mandatory. It is recommended that the same standards are used as much as possible.
5. Differences in classifications and code-lists in BHAS, FIS and RSIS	Continue planning and implementation of harmonization of common code-lists. The plan should be coordinated with other metadata-activities by the Business Process and Metadata Group.
6. Differences in legislation	It is recommended that statistical organizations are involved in definition of administrative files including discussion of metadata in order to fulfill user needs from statistics. It should also be noted that using administrative sources requires work on defining statistical concepts and do necessary harmonization.
7. Old and new coding systems	It is recommended to assess the needs for historical metadata and hereafter decide on the extent of historical metadata to include. Actions should be prepared by BPM and Metadata group.
8 How do implementing metadata standards affect our work?	In the short run: metadata should be extracted from existing systems and put into a common metadata-system. In the long run it is recommended to establish a library with concepts, variables, statistical unit-types, questions etc. and use these as building blocks when creating a survey or changing an existing survey.
9. Human resource and organization	An organization diagram including short descriptions on business process and metadata was prepared and should be implemented. The BPM and Metadata group are (among other things) responsible for management and operation of the metadata-support process.
10. Inclusion of methodological and quality indicators in the metadata system	1) include quality elements in Colectica. (assumption: DDI and Colectica are used as standard and tool) 2) use input from missions on long term strategy.
11. User needs	Meeting with external and internal users showed the need for more targeted metadata. It is recommended to inform users about the ongoing work on metadata. External users will return

	<p>with detailed comments. It is recommended to prepare detailed meetings with external users based on comments.</p> <p>Regarding internal user it is recommended to discuss needs for metadata as an integrated part of the work on documenting business processes.</p>
12. Metadata-strategy - functions and priorities	<p>The following general functions of the coming metadata system were discussed:</p> <ol style="list-style-type: none"> 1. Documenting data collection, storage, evaluation and dissemination. First step: documentation and harmonization of existing surveys with suggested metadata-elements including quality elements 2. Unifying statistical terminology to improve communication between managers, designers, subject-matter statisticians, methodologists, respondents and users of statistical information systems. First step: codelists harmonization 3. Disseminating statistical information to end users: end users need reliable metadata for searching, navigation, and interpretation of data 4. Managing communication with end-users of statistical outputs and gathering of user feedback 5. Planning, designing, implementing and evaluating statistical production processes <p>The functions were selected from “Part A. Statistical Metadata in a Corporate Context” from UNECE</p> <p>It is recommended to use GSBPM and quality elements as starting point. See Strategy on BPM and metadata</p>
13. Should the strategy for GSBPM and the strategy for Metadata be in the same document?	<p>The topic was discussed. It is recommended to prepare and approve a Business Process Management and Metadata Strategy.</p>
14. Future missions	<p>Recommended decision on software, organisation and standards prepared and discussed with directors. It is recommended to use Colectica. Next missions focus on a) tools and standards including installation, training in how to load data, how to use Designer for a full survey including quality elements b) elaboration of Strategy for Business Processes an Metadta</p>
15. Evaluation of Metaplus	<p>Criteria on how to choose software prepared. Colectica and Metaplus compared. See Annex 3.</p>

6. Plan for work until next mission

- Strategy: Decision on software and elaboration of Business Process Management and Metadata Strategy.
- Business processes: Plan documentation of 6 surveys using templates presented at mission
- Establish organization
- Continue work on collecting information on existing metadata

7. Topics for the next mission:

The next missions should focus on a) tools and standards including installation, training in how to load data, how to use Designer for a full survey including quality elements b) elaboration of Strategy, including training in methodology etc. It is assumed that we use Colectica as metadata-tool.

Annex 1 Terms of reference

<p style="text-align: center;">Metadata and Classification System Development 14th to 18th of January 2012 Terms of Reference - Activity 3.2.1 EU Twinning Project BA 08-IB-FI-03</p>

Component 3	Institutional Capacity
	3.1. Long term strategy
	3.2. Metadata and Classification System Development
	3.2.1 Assessment of the current situation regarding metadata and classification systems
	3.2.2 Metadata system I
	3.2.3 Metadata system II
	3.2.4 Classification systems I
	3.2.5 Classification systems II
	3.2.6 Classification systems III
	3.2.7 Follow-up on the work done on metadata and classification systems
	3.3. Promotion of dissemination

3.2. Benchmark

Metadata strategy developed by 8th project quarter

Database model with data flow diagram prepared by 8th project quarter

Plan on development of software for classification database by 8th project quarter

3.2.3. Activity

Metadata system II

Purpose of activity

The expected activities are:

- Further elaboration of metadata strategy. Consultations and follow up on metadata systems in relation to results from earlier missions
- Discussing about strategy for implementing GSBPM and metadata strategy
- Meeting with management
- Meeting with external and internal users

Expected output

- Draft of GSBPM strategy
- Draft of metadata strategy
- Improved knowledge of participants
- Detected user needs

List of Participants

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Agenda

14 January (Monday) – 18 January (Friday)

Institute for Statistics of Federation of BiH – Zelenih Beretki 26, Sarajevo

Time	Day	Place	Event	Purpose / Detail of event
10:00-16:00	Monday	FZS	Meeting with the BC Component Leader and BC Experts	Overview of the activities that should be done between missions. Work on GSBPM strategy.
09:00-16:00	Tuesday	FZS	Meeting with the BC Component Leader and BC Experts	GSIM, ESQRS, DDI. Metadata standards in metadata strategy.
09:00-16:00	Wednesday	FZS	Meeting with the BC Component Leader and BC Experts	Work on document metadata strategy. Next missions on component „Metadata and Classification System Development“
09:00-16:00	Thursday	FZS	Meeting	Meeting with internal and external users. User needs. (This is not fixed yet. Must be checked)
09:00-12:00	Friday	FZS	Meeting	Meeting with management of statistical offices in BiH. (This is not fixed yet. Must be checked)

Annex 2 Standards and software – comparison of Colectica and Metaplus

The criteria's in the left column below is based on the objective of having sustainable development of metadata-system in Bosnia.

Criteria	Colectica	Metaplus
<i>Compliance with international standards</i>	Complies with DDI, ESQRS (extension), SDMX will be supported. The standards has been introduced and tested in Bosnia.	Complies with ISO-11179. There is until now no international agreed way on how to comply with iso-11179 at the operational level. No indicated support for DDI, SDMX and ESQRS.
<i>Metadata included</i>	All types of metadata in DDI including questions, answers etc. ESQRS as extension.	Mainly variables, concepts and classifications.
<i>Support for integration and exchange</i>	DDI (with future integration of SDMX including ESQRS) support integration of data internally and externally (with Eurostat and other organizations), since the standards are implemented in the tools.	No direct support. Model in Metaplus needs to be changed.
<i>Data available in many tools</i>	Data stored using DDI/ESQRS available in tools using DDI. See list of software at the DDI-alliance web-site	It is possible to build applications that extract data from Metaplus. There are no tools that can use output from Metaplus directly.
<i>Separation/"loose coupling" of storing, processing and presentation to ensure further development by 3. parts</i>	Colectica has separate components for storing, processing and presentation. Third-parties can use Colectica-parts or build own processing- and presentation components on top of Colectica repository. Developed components will be available to the statistical community.	It is possible for third-parties to develop applications that extract data (queries on sql-server)

<i>Division of Labor (standards and tools)</i>	<p>The DDI-standard is discussed and extended in cooperation with SDMX, ESQRS etc.</p> <p>Colectica is used and extended in many countries. (Canada, New Zealand, France, Canada and Denmark. Other countries and Eurostat are evaluating the software) Components and functions built into Colectica are shared among existing and future users.</p>	No direct sharing of development of Metaplust standard and tools, but additions to the software will probably be available for future users.
<i>Muli-lingual</i>	Colectica support any language (both for UI and stored data).	Support many languages.
<i>Support</i>	Colectica use an approach similar to many software-development-houses. This includes rules on time from reporting an error until a plan for resolution is ready etc. Support can be at different level.	<p>Support will be via discussion on e-mail and other types of help on location. Issues will typically resolved in next version of software.</p> <p>No resources available for downloading, deploying, configuring, and receiving general support for the software.</p>
<i>Price</i>	Project pays initial cost and two years support. After two years: options: no annual cost (no updates) or low costs for limited support.	Free, but systematic support and development probably requires a model like PC-Axis.