TWINNING CONTRACT

BA 17 IPA ST 01 20

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

MISSION REPORT

Activity 2F: Analysis of the results of the pilot agricultural census

Component 2 - Agriculture Statistics

Mission carried out by
Anders Grönvall, Swedish Board of Agriculture
Ylva Olsson, Swedish Board of Agriculture

31 January – 03 February 2023

Version: Final

Expert contact information

Anders Grönvall
Swedish Board of Agriculture
Jönköping
Anders.Gronvall@jordbruksverket.se

Ylva Olsson
Swedish Board of Agriculture
Jönköping
Ylva.Olsson@jordbruksverket.se

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the European Union

**FURTHER SUPPORT TO THE REFORM
OF STATISTICS SYSTEM IN BIH**

STATISTICS
DENMARK

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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 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 sixth mission to be devoted to Agriculture Statistics, Component 2 of the project.

The purposes of the mission were:

- Review of questionnaire of Pilot Census of Agriculture
- Proposal for improving of questionnaire
- Cross check control between questionnaires (by category)
- Control the quality of the collected data

The consultant would like to express his/her 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

2.1 Review of questionnaire of Pilot Census of Agriculture

The first step was to identify general methods to review the questionnaire. This due to time limit and a very extensive questionnaire. These suggestions are based on the situation in Bosnia and Herzegovina and existing data from Pilot survey and other existing sources for statistics as Annual farm survey (AFS), administrative data etc.

- Compare aggregated results with other sources. In pilot survey preliminary weighting factors has been constructed in previous mission. After calculation of final weighting factors some results could be compared with data from AFS on the macro-data level. This means that on the macro-data level some results can be compared with data from AFS. Look for large differences and try to explain reasons for differences. It could be differences in frame, sample but also in what way question is constructed in questionnaire.
- Micro level comparisons. To match information from different sources as far as possible. Probably some holdings would have been included in both AFS and pilot. Or in some cases data from administrative register could be matched with pilot. To analyse if there are many holdings of those with matching data that differ in a large scale could be an indicator of problems with questionnaire.
- Outlier. Do the data from pilot have a lot of outliers for different variables? And in that case what could it be reason. Unit not clear or mistake in putting data in system, or other kind of problems?
- Experience from enumerators. Those doing interviews should have a lot of information on what they believed was problems in understanding. Document those problems they experienced should be a good source for improvement.

- NS/NE. The questionnaire in pilot is very extensive. The result from pilot should indicate that there are variables with low prevalence. To decrease questionnaire should be of high priority.
- Compare statistics between different domains. Although statistics from different domains are not always fully comparable, they can be used to evaluate on both a macro and micro level how questions in a survey work. For example, if there are slaughtering on a holding they should have animals.
- Evaluate links to administrative data. Does data that are used for links work? What is the problem, could it be solved in another way? For example, is it possible in IT-system to preprint information of expected register number form Register of the Ministry.
- Compare information from different IT-system for collecting data. As the information was collected in different IT-system between entities there could be problems implementing question in one system and not the other.
- Illogical data. Look for illogical data on micro-level. Does illogical data between different variables appear in high amount for certain variables. Why is this and would it be a possible to change in questionnaire?
- Own experience. During the course of the process there should always be experiences that can be used. Document these and try to improve the survey based on these experiences.

2.2 Proposal for improving questionnaire

General comments based on results on analysis in 2.1.

- Improve education for enumerators.
- Include more information on IT-system. Information to help enumerators or information on data from other sources that can be matched.
- Include more soft controls in system. Also between different chapters in questionnaires.
- Identify NS/NE – variables.

Specific comments on questionnaire (pilot)

ID in questionnarie	Comments
207-245	Long list. Based on resultat in pilot it should be valid to include some of variables in "other"- cathegory
246-262	Long list. Based on resultat in pilot it should be valid to include some of variables in "other"- cathegory
301-326	We believe that it can be difficult to measure column 1 (total area). Is it possible, othervise maybe not include in questionnarie.
401-412	The checkbox may be unnecessary. The information is created by the area, but can be an effect of the IT system.
505-519	Number of irrigations would not be information that solve problems that they are intended to solve. If not, delete from questionnarie.

522-524	Checkbox may bo unecessary.
539-542	Probably needs significantly more clarifications form enumarators.
543-547	Probably needs significantly more clarifications form enumarators.
654 (4)	Does this really excist in an amount that makes in relevant?
655 (4)	Does this really excist in an amount that makes in relevant?
710	Cows or cattle? May be a translation issue.
901-909	Why divided by year? To much information?
910-942	Decrease nr of items. Based on pilot there should be information that makes it possible to reduce significantly. In IFS-regulation only yes/no is demanded.
966-980	Extensive information. In some cases information that should have high correlation already exist. For example facilities for housing of animals should be higly correlated with number of places for animals in chapter 7. Decrease number of questions.
1002-1015	Is it necessary to distinguish between different kind of familymember. Only gender, not son, brother, father etc.
1032-1044	There are many alternatives on other acitivites. Pilot census should give answer if everything is needed or should be put under a "other" cathegory.
1101-1111	Information is based on situation in EU-contries and those subsidies that exist there. If it should be included it would be valid to base it on situation in Bosnia and Herzegovina. Even better should be to link data if possible from Administrative registers.
1201-1221	Information in general based on national needs and not EU regulations. Analyse pilot to see if information valid.

2.3 Cross check control between questionnaires (by category)

In table below some possible cross checks are listed. The list should just be seen as a beginning of checks that could be made and would be subject to change when questionaries' changes.

Variable 1	Variable 2	Comments
011	215	if 205=yes then 011>0
011	217	207 <= 011
011	215	215 <= 011
013	219	Potatoes
014	234	vegetables
016	250=326	Fruit
017	252=334	vineyard
018	251=329	olive
019	206a+206b+230a+ 234a+235a+242a	Greenhous, under glass
020	263a	mushrooms
301 column 2	30111-30114	If 301>0 then sum(30111-30114)=100 % (apple)

301 column 2	30121-30124	If 301>0 then sum(30121-30124)=100 % (apple)
302 column 2	30211-30214	If 301>0 then sum(30211-30214)=100 % (pear)
302 column 2	30221-30224	If 301>0 then sum(30221-30224)=100 % (pear)
206+245	401-403	Tillage method. Sum (401-403) not > sum (206+245) Fallow land (244) probably not included in tillage method
206+245	404-407	Winter period. Sum (404-407) not > sum (206+245) Fallow land (244) probably not included in winter period
244	408	Crop rotation. If 244>0 then 408 probably not 100 %
245	504 / 520=522-524	Irrigation 520<245 520=sum(522-524), 504=520
504	525-548	If 504=0 then 525-548 no
021	613	Cattle
025	620	Sheep
027	625	goats
023	636	Pigs
029	645	Poultry
030	638	Laying hens
031	637	Broiler
032	646	horses
033	649	beehives
249	654	If 654>0 then 249 >0 (animal then meadow and pasture)
613	701	613>0 then 701=yes cattle? then animal house for cattle
613	703-709	613 <=sum(703-709 cattle)
611	703-709	611 <=sum(705-709 cows)
636	712	636>0 then 712=yes pig? then animal house for pig
636	714-719	636<=sum(714-719 pigs)
638	721	638>0 then 721=yes laying hens? then animal house for laying hens
638	722-729	638<=sum(722-729 laying hens)
601	801	If 601=yes (animal) then 801=yes (manure)
245	814, 815	If 245=0 then 814=0 and 815=0 (need to have areas to use manure or fertilizer)
245	817-823	If 245=0 then 817-823=0% (need to have areas to use manure or fertilizer)
801	804-812	If 801=yes sum(804-812)=100% if animal that produce manure than need manure facilities or used the same day

966-970	701, 712, 721	Housing for different animals
		Manager: (number of days)*(average hours per day)>0
245	"hours"	If 245>0 then hours>0
613, 620, 625, 636, 645	"hours"	If sum (613, 620, 625, 636, 645)>0 then hours>0 If LSU>X then hours>Y If 613>50 then hours>Z?

In mission we have also discussed process for checking of data in collection face and in data handling and how this process is made in Sweden. This includes rules for editing and in what face of collections this can be introduced.

3. Conclusions and recommendations

These are main conclusions based on discussions made during mission.

- **Review the questionnaire with help of other sources like results from other surveys, administrative registers or differences between the two IT-systems that are used.**
  To understand if questions give a lot of "wrong" answers, non-responses or outliers. This can be done in both macro and micro level. Macro level - country or different regions, micro level – individual holdings.
- **Based on results from pilot Census, minimize number of questions.**
  Which variables are probably non-significant (NS) or non-existing (NE). Minimize number of questions can result in decreased response burden and probably get better results.
- **Do a list with all possible validation rules /controls. It can include controls for specific variables and controls by compare two or more different variables (cross check control by different categories).**
  From this list, decide which are most important and it maybe can be used it in IT-system. Use some other validation rules when you control raw data. Some of the validation maybe is not that important.
- **Use handbook and the ongoing update version on EU "Wiki-page" to understand how different variables should be handled.**
  All member state and other countries that will interpret IFS regulation can continuously ask questions about how we should interpret the regulation and the handbook. It can give some information that help you to get more help for the enumerators and also how you should handle the answers.

4. What to do before the next mission for the BC Counterpart

Action	Deadline	Responsible person
Analyse results from pilot survey		
Reduce number of variables in questionnaire.		
Create list of validation rules to include in IT-system/s.		

Annex 1. Terms of Reference for the current mission

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Terms of Reference

EU Twinning Project BA 17 IPA ST 01 20

Component 2 - Agriculture Statistics
Period:
Tuesday 31th January 10 a.m. – Friday 3rd February (noon) 2023

Venue: BHAS/FIS meeting room, Zelenih beretki 26
71 000, Sarajevo
Bosnia and Herzegovina

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Activity 2F: Analysis of the results of the pilot agricultural census

1. Mandatory result

The component on Agricultural Statistics has three main objectives:

- 2.1 Master Plan for Agriculture statistics for the period 2020-2030 developed and adopted (with clearly defined objectives, timetable of implementation for the implementation of the objectives and precisely defined responsibilities of all stakeholders.)
- 2.2. Cooperation among all stakeholders improved
- 2.3. Protocol(s) on cooperation and exchange of data among all stakeholders adopted

Indicator / Relevant Milestones / Internal deadlines:

- Master Plan for Agriculture statistics in BiH available on web
- Identification of stakeholders at national and entity level
- Responsibilities of each stakeholders clarified
- Overview of currently available data both administrative and from surveys
- Development of roadmap for implementation
- Development of initial budget for agricultural census
- Definition of SRPG ~Statistical Register of Agricultural Holdings
- Development of high-level cooperation agreements / Memorandums of Understanding
- Protocols describing specific exchange of data

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2. Purpose of the activity

- Review of questionnaire of Pilot Census of Agriculture
- Proposal for improving of questionnaire
- Cross check control between questionnaires (by category)
- Control the quality of the collected data

3. Expected output of the activity

- Improved questionnaire
- List of main controls between questionnaires
- Proposal for data editing rules

Annex 2. Persons met

BHAS:
Jasna Isaković, Head of Department for Sample Design and Methodology
Ljubiša Eskić, Senior Advisor for Structural Statistics in Agriculture
Fahrudin Subotić, Senior Advisor for Production of Statistics in Agriculture and Fishery
Lidija Lukić, Senior Officer for Agriculture statistics
Neno Svjetlanović, IT officer - Department for applications and management of databases
Biljana Nogo, Senior Officer for Agriculture statistics
Ljubica Marić, Senior officer for Agriculture statistics
Andrea Mehmedović, Senior Officer for Agriculture statistics

RSIS:
Lazo Šegrt, Head of Department for Statistics of Agriculture, Forestry and Environmental Protection
Nada Šobot, Senior Officer for Agriculture Statistics
Branislav Gojković, Senior Officer for Agriculture Statistics

FIS:
Elmina Ramić-Lukač, Senior Officer for Agriculture Statistics
Ismir Melez, Senior Officer for Agriculture Statistics
Amel Sikirić, Senior Officer for IT
Asmira Selimović, Head of Section for Statistical Methods and Coordination

RTA Team:
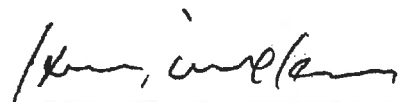Niels Madsen, RTA
Larisa Muslimovic, RTAA

Signatures

For the approval of the contents of this report, representatives from BHAS, FIS and RSIS as well as MS experts and the RTA sign here:
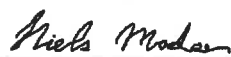
Date:

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Component leader, BHAS

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Component leader, RSIS

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MS Expert

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Component leader, FIS

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RTA

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MS Expert