

TWINNING CONTRACT

Support to Statistics

Kosovo



MISSION REPORT

on

Visualization of statistics using GIS software

Component no 4.3.2

Mission carried out by
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IPA 2012

Author's name, address, e-mail (keep the relevant 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	7
Annex 1. Terms of Reference	9
Annex 2. Persons met	12
Annex 3. Blueprint for systematic GIS addresses	13
Annex 4. Questionnaire including the two address types (code and name)	14
Annex 5. Example on GIS map to secure accurate collection of systematic addresses	15
Annex 6. Example of hands on buffer function in GIS	16
Annex 7. Example of "Municipality profile"	17

List of Abbreviations

KAS	Kosovo Agency for Statistics
ToR	Terms of Reference
GIS	Geographical Information System

1. General comments

This mission report was prepared within the Twinning Project regarding GIS dissemination in KAS. It was the second activity in the project dedicated to the work with the Geographical Information System (GIS). The mission was aimed at defining a strategic plan for GIS forming the base of the further implementation of the project in this area.

The concrete objectives of the mission were:

Activity 4.3.2b:

- Detailed review of the current and future use of GIS software for dissemination at KAS
- Generate a roadmap agreeing on the strategy for the use of GIS in the future years
- Work through the agenda agreed on in Copenhagen

The consultant would like to express his thanks to all officials and individuals met for the kind support and valuable information which he/she received during the stay in Kosovo, and which highly facilitated the work of the consultants.

This views and observations stated in this report are those of the consultant and do not necessarily correspond to the views of EU, KAS or Statistics Denmark.

2. Assessment and results – Geographic Information Systems

Activity 4.3.2b will ensure the following outputs:
Functionalities working with the GIS software. KAS has a clear understanding of workflows regarding spatial data as well as the underlaying code structure.

The second mission on this component was kicked off with the KAS showing the status for the GIS work done in KAS and the run through of the most urgent themes for this “hands on” workshop with GIS. The focus was on addresses, projections and dissemination of spatial data. During the KAS study visit to Statistics Denmark in June and the presentation done by Head of Section Michael Berg Rasmussen an agenda was developed for the mission. Working out the agenda was from KAS Mr. Burim Limolli, Head of IT - Division, and Mr. Idriz Shala, GIS expert. From Statistics Denmark Mr. Troels Vestergaard, Head of Section also presented was RTA Mr. Per Knudsen.

The agenda:

1. How are function addresses in Statistics Denmark structured and how to implement the same level of structure in KAS
2. Statistics Denmark’s role in the National Spatial Data Infrastructure
3. GIS metadata in Statistics Denmark
4. Hands on learning in GIS how to use Spatial Analysis

Working on these four important areas to take the step to be able to publish more accurate statistics using the GIS system and secure accurate metadata in dissemination of GIS maps

was the objection of this second mission. During the workshop differences and similarities was pointed out between the KAS and Statistics Denmark especially regarding the system for addresses and the role in national spatial data infrastructure.

1/

The session started with a presentation of how the system addresses are being handled in Statistics Denmark

For this second mission Statistics Denmark had arranged a systematic address file that was handed over to KAS as a blueprint on how to arrange systematic addresses and also what are the necessary spatial attributes/codes to create GIS ready files see Annex 3:

Municipalitycode_streetcode_housenumber and X,Y coordinates

The KAS has good cooperation with the Kosovo Map and Cadastral Agency and therefore the transition from the addresses delivered by them to have systematic addresses in a GIS context is not difficult but a systematic approach could be helpful. KAS will look further into the register regarding addresses in the national mapping agency.

KAS and Statistics Denmark agreed that the systematic addresses in KAS should be organized as the blueprint described.

Also an example was shown on how systematic data can be used for statistical purposes when it is combined with register data like there are some possibilities for in Statistics Denmark – the effort with the census should provide the same possibilities for KAS off course depending on the level of data from the census but the geo-data methodology and metadata part is to a large degree common between the two statistical agencies.

There are both from Kosovo Agency of Statistics and Statistics Denmark a common understanding that systematic addresses is by far the most efficient and provide the highest quality of the work with geographical information in general and especially if combined with other data sources. Also this will help KAS to work with two different projections (the national and the EU). Because of the situation that both KAS and Statistics Denmark have regarding different projections.

It is more accurate and gives better possibilities to have systematic addresses to fore fill the INSPIRE-directive. Meaning that for example the grid data can fore fill the demands described in INSPIRE using the EU projection and also for national purposes in a different projection. It is of the outmost important that the metadata about which projection are used when is very clear.

The ongoing process in how to upgrade GIS addresses to systematic addresses could be secured by making some adjustment to the form of the KAS census. This improvement is already being implemented by the KAS.

The process could begin by using both addresses and therefore make the systematic addresses available for GIS analysis. Also maps are produced to make sure that the census is using the right systematic addresses see Annex 5. This should help the people working with the census to put both addresses on each address on the front door level. It would be most helpful for the future development of GIS and spatial data in general.

The benefit with systematic addresses is that they are easier to maintain and to keep updated and they are more accurate especially over time and also they are very useful working with register data. Also to have systematic address bound to a specific geographical level for example X and Y coordinates could be considered public data and therefore be used for the whole public sector and not only for statistical purposes as the situation is in Denmark.

2/

Statistics Denmark explained their role in the spatial data infrastructure in Denmark.

In the case of addresses it was quickly recognized that the Danish system and the one in Kosovo is widely the same. Municipalities are responsible for addresses and they are collecting local data and turn them over to the national map and cadastral agency. Therefore the roles of the two national agencies are very similar; as end users of updated addresses from the national map and cadastral agency. In both cases there is a good communication between the public agencies.

3/

The issue with metadata using maps in the general GIS dissemination is very similar between the two countries. Statistics Denmark therefore explained that they are using two types of projections and only produces maps with adequate legends. For international (EU) purposes the standard ETRS89 projection was used.

For the presented data there should be sufficient meta-data for the themes and also the GIS system will automatically supplement with the spatial meta-data. KAS presented data from the office working with social statistics showing the how spatial and statistical meta-data supplemented to make full meta-data cover of the theme.

4/

This issue was carried out as a “hands on” workshop producing a map showing the buffers and distance calculation from addresses to the nearest hospital and also calculating the number of people within a specific radius of an object; in this case a hospital. This exercise exposed the need for more accurate addresses but the methodology in a GIS perspective is the same and can easily be spread out in KAS see Annex 6.

3. Conclusions and recommendations

KAS has great capacities working with GIS. And the general field of spatial data – this leads to some very interesting publications on spatial statistics.

Recommendations regarding GIS

After the activity the following activities are recommended:

- To continue the high level of printed GIS based publications
- Online publication of “Municipality profile” or similar on the KAS homepage an example can be seen in Annex 7
- To participate in the international forum: European forum for Geography and Statistics (EFGS) – especially regarding meta-data
- In cooperation with national map and cadastral agency build up address-register

The consultant recommends that KAS use one projection for national GIS and the EU standard ERTS89 projection in an EU context.

The consultant recommends that the systematic addresses in KAS should be organized as the blueprint shown in Annex 3 describes.

The consultant recommends that this effort on the geographical level is implemented in the next census as shown in Annex 4.

The benefit from systematic addresses:

Address locations for buildings will support the Geo-referenced statistical information

Needed to improve the quality of the censuses in Kosovo

To navigate enumerators for other statistical surveys

To visualize census results on the maps

Action	Deadline	Responsible
1. Systematic addresses in the GIS system in KAS	3-4. Q 2015 (depending on data delivery)	KAS
2. Content of the GIS analysis	3-4 Q 2015 (depending on data delivery)	KAS
3. Publication of „Municipality profile“	4 Q 2015 (depending on data delivery)	KAS
4. Systematic addresses in Censuses	Ongoing	KAS
Update and maintain systematic addresses	Ongoing	KAS

Annex 1. Term of References



EU Twinning Project KS12 IB ST 01 Support to Statistics

Terms of Reference:

Component 4: Information Technology System and Dissemination
Activity 4.3.2b: Visualization of statistics using GIS software

Scheduling:

Tor –ready date: 26 June 2015
Start / end of activity: 17-20 August 2015
Reporting time: 3 September 2015

Mandatory result of the component:

Mandatory Result	Intervention logic	Benchmarks	Sources of information	Assumptions
Mandatory Result 4.2	Developing Web dissemination	<ul style="list-style-type: none"> KAS website and its user-friendliness improved by 8th project quarter Dissemination database installed and available to the public by 7th project quarter. Mission report uploaded on project homepage Recommendations on future work discussed and work plan updated 	<ul style="list-style-type: none"> KAS website Dissemination database Twinning quarterly reports Mission Reports 	<ul style="list-style-type: none"> Sufficient absorption capacity Functioning IT-technology Low turn-over of staff involved in implementation Staff works on project related tasks in between missions

Subject / purpose of activity: 4.3.2b activity

This mission is a continuation of mission 4.3.2a which took place in January 2015. This mission will further discuss the current state of play regarding the use of GIS software to improve dissemination via

the website. Also the mission will produce further recommendations for the future development of GIS at KAS.

Expected output of the 4.3.2b activity

Activity 4.3.2b will ensure the following outputs:

Mission report with recommendations of the future use of GIS software for dissemination at KAS and recommendations on future work. KAS will brief the MS experts on the current state of use of GIS within KAS.

The MS -experts will brief KAS staff on the current State of the Art strategies on GIS and on Eurostat plans for this issue.

KAS and the MS representatives will review the current roadmap agreeing on the strategy for the use of GIS in the future years.

KAS and MS representative will discuss the possibilities for reuse of data for GIS based on the newly installed statistical databank: Ask KAS

KAS resources:

1. Mr. Burim Limolli, Head of IT - Division, burim.limolli@rks-gov.net KAS
2. Mr. Idriz Shala, GIS expert, [idrizz.shala@rks-gov.net](mailto:idriz.shala@rks-gov.net), KAS

KAS Twinning team:

Project Leader Mr. Ilir T. Berisha, Director of Economic Statistics and National Accounts,

Ilir.T.Berisha@rks-gov.net

RTA Counterpart Ms.Teuta Zyberi, International Relations Officer, teuta.zyberi@rks-gov.net

Member state resources:

Mr Troels Vestergaard, Head of Section, Statistics Denmark, tav@dst.dk

Twinning ressources:

Mr Per Knudsen, RTA, pkn@dst.dk

Ms Nora Zogaj, RTA assistant, nzogaj@yahoo.com

Background

The AGA report 2012 states that there is a strong need to improve KAS' website to make it a more user-friendly and flexible dissemination tool.

In general the activities in component 4 will address the following issues:

- Improve web dissemination for selected statistics including improvement of ASK' website to make it a more user-friendly and flexible dissemination tool;
- Develop guidelines for the design of tables and graphs, also to be applied for dissemination on the web;
- Develop a dissemination database, including more complete metadata covering different aspects related to data quality;
- Develop a strategy and recommendations for presentation of geographic visualizing statistics
- Updated work plan for the implementation of the dissemination database
- Description of workflows and work share between IT, dissemination and subject matter statisticians

- Developing a dissemination strategy policy and - strategy

Activities to be undertaken in preparation for the mission:

List of documents

- Twinning Mission Reports, Component 4 (all available at dst.dk/Kosovo)

Day	Place	Time	Event
1	KAS	09:30	Introductory remarks to this part of component 4
		09:45	KAS will brief the expert on the current state of the use of GIS within KAS
		10:30	Coffee
		11:00	Agreeing on the plan for the week
		11:30	Lunch
		13:00	MS; GIS in Statistics Denmark- the organization of the work and the data sources.
		14:30	Coffee
		15:00 – 16:00	Hands on GIS
2	KAS	09:00-16:00	Hands on GIS
3	KAS	09:00-16:00	Hands on GIS
4	KAS	09:00-16:00	Hands on GIS Agreeing on recommendations, time plan and implied work program for BC on GIS Report writing Debriefing: Experts, KAS Project Leader, Component Leader, and RTA

Annex 2. Persons met

KAS:

1. Mr. Idriz Shala, GIS expert, idriz.shala@rks-gov.net, KAS

RTA Team:

Per Knudsen, RTA

Nora Zogaj, RTA Assistant

Annex 3. Blueprint for systematic GIS addresses

<u>Adrkode</u>	<u>Adresse</u>	<u>zip-code</u>	<u>Distrikt</u>	<u>X</u>	<u>Y</u>
1010004001	Abel Cathrines Gade 1	1654	København V	723723	6175309
1010004003	Abel Cathrines Gade 3	1654	København V	723735	6175304
1010004003A	Abel Cathrines Gade 3A	1654	København V	723743	6175322
1010004006	Abel Cathrines Gade 6	1654	København V	723773	6175266
1010004007	Abel Cathrines Gade 7	1654	København V	723757	6175294
1010004008	Abel Cathrines Gade 8	1654	København V	723786	6175261
1010004009	Abel Cathrines Gade 9	1654	København V	723764	6175297
1010004010	Abel Cathrines Gade 10	1654	København V	723793	6175257
1010004011	Abel Cathrines Gade 11	1654	København V	723769	6175309
1010004012	Abel Cathrines Gade 12	1654	København V	723803	6175253
1010004014	Abel Cathrines Gade 14	1654	København V	723814	6175249
1010004016	Abel Cathrines Gade 16	1654	København V	723829	6175242
1010004018	Abel Cathrines Gade 18	1654	København V	723872	6175223
1010004021	Abel Cathrines Gade 21	1654	København V	723818	6175267
1010004021A	Abel Cathrines Gade 21A	1654	København V	723818	6175276
1010004021B	Abel Cathrines Gade 21B	1654	København V	723823	6175288
1010004023	Abel Cathrines Gade 23	1654	København V	723832	6175260
1010004025	Abel Cathrines Gade 25	1654	København V	723841	6175257
1010004026	Abel Cathrines Gade 26	1654	København V	723926	6175199
1010004027	Abel Cathrines Gade 27	1654	København V	723851	6175252
1010004029	Abel Cathrines Gade 29	1654	København V	723893	6175234
1010004031	Abel Cathrines Gade 31	1654	København V	723907	6175228
1010004033	Abel Cathrines Gade 33	1654	København V	723919	6175223
1010008003	Abildgaardsgade 3	2100	København Ø	724706	6177477
1010008004	Abildgaardsgade 4	2100	København Ø	724715	6177496
1010008005	Abildgaardsgade 5	2100	København Ø	724701	6177480
1010008006	Abildgaardsgade 6	2100	København Ø	724709	6177500
1010008007	Abildgaardsgade 7	2100	København Ø	724696	6177484
1010008008	Abildgaardsgade 8	2100	København Ø	724705	6177503
1010008009	Abildgaardsgade 9	2100	København Ø	724691	6177487
1010008010	Abildgaardsgade 10	2100	København Ø	724700	6177506
1010008011	Abildgaardsgade 11	2100	København Ø	724686	6177491
1010008012	Abildgaardsgade 12	2100	København Ø	724695	6177509
1010008013	Abildgaardsgade 13	2100	København Ø	724681	6177494
1010008014	Abildgaardsgade 14	2100	København Ø	724689	6177513
1010008015	Abildgaardsgade 15	2100	København Ø	724676	6177497
1010008016	Abildgaardsgade 16	2100	København Ø	724685	6177516
1010008017	Abildgaardsgade 17	2100	København Ø	724671	6177500
1010008018	Abildgaardsgade 18	2100	København Ø	724679	6177520

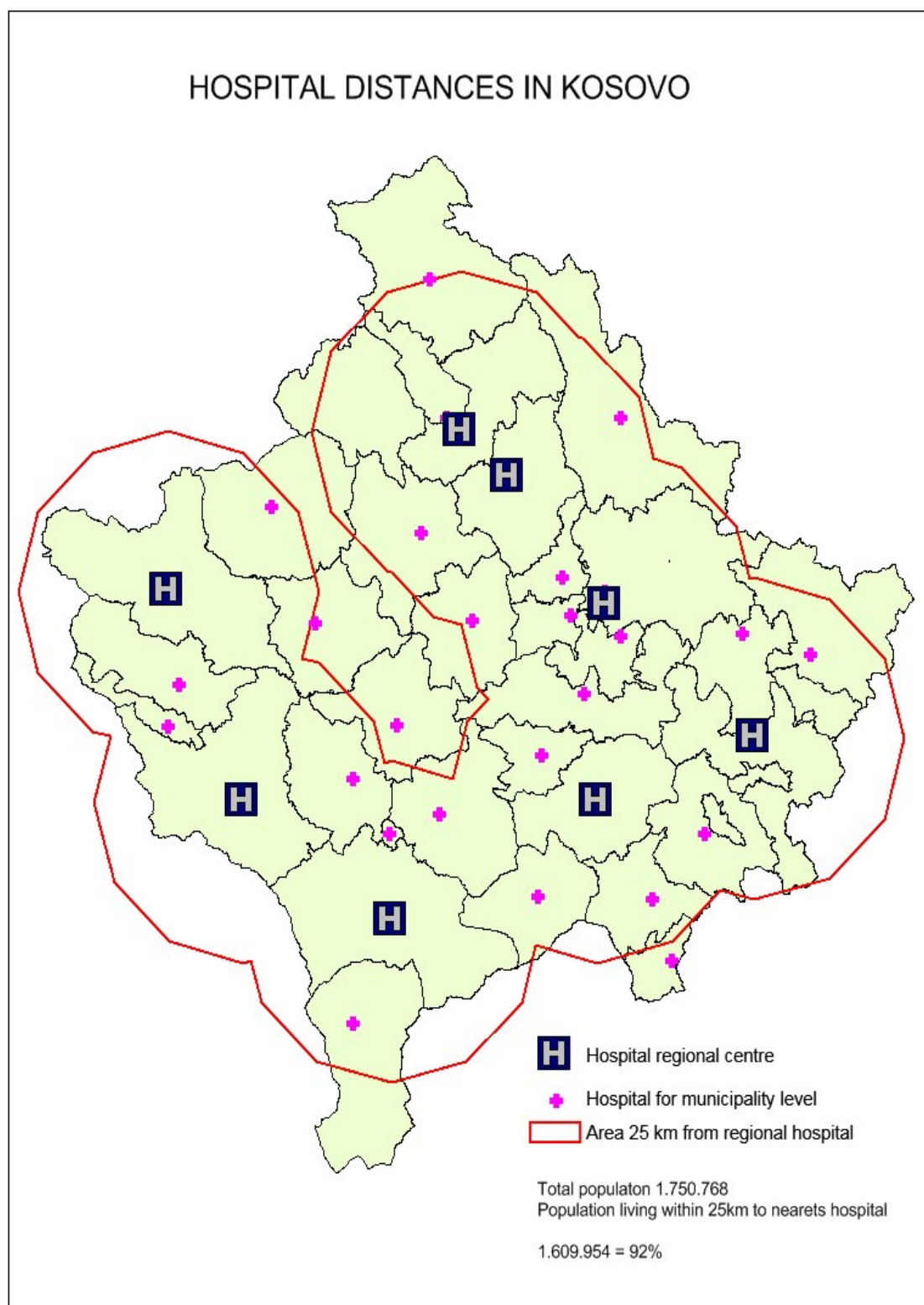
Annex 4. Questionnaire including the two address types (code and name)

POPULATION AND HOUSING CENSUS HOUSEHOLD QUESTIONNAIRE (FORM R2) <small>Census Law No. 03/L-237 "Kosovo Official Gazette" no.84/2010</small> <small>All the data in this questionnaire are protected by law and will be used only for statistical purposes.</small>											
<input type="text"/> <input type="text"/>		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		<input type="text"/> <input type="text"/>		<input type="text"/> <input type="text"/> <input type="text"/>		<input type="text"/> <input type="text"/> <input type="text"/>		<input type="text"/>	
Municipality		Settlement		EA		Building No.		Entrance No.		Dwelling No.	
Address: Municipality, Settlement, Street, Building no., Entrance no., Dwelling no.											
LIST 1 - HOUSEHOLD MEMBERS (PERSONS USUALLY RESIDENT IN THE DWELLING)											
Person no.	Name	Surname	Father's name; for married and widowed women, husband's name	Sex 1 M 2 F (a)	Date of birth (dd/mm/yyyy)	Relationship to the head of household	Ordinal number of the family	Family status			
1	2	3	4	5	6	7	8	9a			
01						HEAD OF THE HH	01				
02											
03											
04											
05											
06											
07											
08											
09											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
TOTAL NUMBER OF PERSONS				(a) 1 Male 2 Female							
MALES											
FEMALES											
Head of household/Respondent Name and Surname _____ Signature: _____											

Annex 5 Example on GIS map to secure accurate collection of systematic addresses



Annex 6 Example of "hands on" buffer function in GIS



Annex 7 Example of "Municipality profile"

