

TWINNING CONTRACT

AM/14/ENP/ST/15

Strengthening of the National Statistical System of Armenia – Phase II



MISSION REPORT

on

Innovation Statistics

Activity 5.1: Assessment of the current status

Mission carried out by

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List of Abbreviations

EU	European Union
EACU	Eurasian Customs Union
NSSRA	National Statistical Service of the Republic of Armenia
BC	Beneficiary Country
MS	Member State
ToR	Terms of Reference
STI	Science, Technology and Innovation
CDH	Careers of Doctorate Holders

1. General comments

This mission report was prepared within the Twinning Project “Strengthening of the National Statistical System of Armenia – Phase II”. This was the first activity in component 5 and the actions planned for this activity were carried out as scheduled.

The purposes of the mission were:

- Assessment of current situation
- Understanding of the production methods applied in the NSSRA and in particular regarding the regional level
- Presentation of international and European standards incl. definition of innovation
- Overview of the Science, Technology, Innovation statistics (especially R&D and Innovation) currently produced by NSSRA
- Identifying user needs
- Initial discussion on data sources
- Development of plan for how to develop innovation statistics
- To involve relevant stakeholders in the discussions

The planned activities and the expected output were all achieved.

The consultants would like to express their sincere thanks to all officials and individuals met for the kind support and valuable information which they received during the stay in Armenia and which highly facilitated their work. The views and observations stated in this report are those of the consultants and do not necessarily correspond to the views of EU, NSSRA, Istat, Statistics Finland, Statistics Lithuania or Statistics Denmark.

2. Assessment and results

The purposes of the activity are:

- To assess current situation
- To clarify definition of innovation
- To identify user needs and data suppliers
- To draft plan for development of innovation statistics
- To lining up of work programme for the next activity (5.2 is scheduled to 1-5 February 2016)

2.1. Present situation on STI statistics at NSSRA

Statistics on STI presently collected and published by NSSRA include information on the R&D in government and high education sectors and CDH statistics. R&D data on the business enterprise sector (private sector) is missing. There is no innovation statistics.

In order to fully implement the international guidelines the business enterprise sector should also be covered.

Presently, the NSSRA produces and publishes the following indicators:

- Number of government and high education sectors institutions which implementing R&D
- R&D expenditure in government and high education sectors
- Number of R&D personnel in government and high education sectors

- Number of doctors of science and post-graduate students

These indicators are disseminated on the NSSRA website and in publications like 'Social and Economic situation of the Republic of Armenia' and 'Statistical Yearbook of Armenia'. NSSRA reports R&D in the higher education and the government sector in reports to the UNESCO, State Statistical Committee of the CIS and to the Eurasian Customs Union (EACU).

The Division of Social Sphere and Environment Statistics will be responsible for the production of Innovation statistics with assistance of regional offices (data collection) and specialists in other units: IT department (data processing) and Business Register (population and sample).

The unit responsible for R&D statistics in the higher education and government sectors has no experience on the surveys of the business enterprises. However, they have experience on the R&D statistics, which is related to the innovation statistics. Quality declaration of the R&D statistics production contains the elements of the European Code of Practice (CoP).

Business enterprise innovation survey is quite extensive and requires significant manpower in the data collection, data treatment, analysis and publishing. If a responding enterprise has difficulties in filling the questionnaire assistance should be provided, which requires resources.

2.2. Presentation of international and European standards incl. definition of innovation

Presentation were provided by the experts from Lithuania and Finland. It was emphasized that the focus of this activity of the twinning component 5 is innovation statistics in the business enterprise sector. A lot of discussion has emerged due concerning the same concept of innovation. By Oslo manual and EU CIS survey methodological recommendations:

*An **innovation** is the implementation of a new or significantly improved product (good or service), process, new marketing method, or new organisational method in business practices, workplace organisation or external relations.*

As for the definition of innovation it was clarified that the bottom line is '**new to the enterprise**'. Innovation has not to be something technologically new or to be based on the scientific findings and also it does not have to be new to the market.

An important point is also that the main target of the innovation survey is to measure the extent of the innovation activities, for example the percentage of innovative enterprises in a given NACE class. In other words, the goal is not to find innovative enterprises as such.

Main Innovation statistics indicators are identified in The Commission Regulation (EU) No 995/2012, implementing Decision No 1608/2003/EC of the European Parliament and of the Council concerning the production and development of Community statistics on science and technology:

1. Innovative enterprises (number or per cent)
2. Innovative enterprises that introduced new or significantly improved products, new to the market
3. Turnover from innovation, related to new or significantly improved products, new to the market

4. Turnover from innovation, related to new or significantly improved products, new to the firm, but not new to the market
5. Innovative enterprises involved in innovation cooperation
6. Innovation expenditures
7. Innovative enterprises that indicated highly important effects of innovation
8. Innovative enterprises that indicated highly important sources of information for innovation
9. Enterprises facing important hampering factors
10. Enterprises that developed the innovations itself or together with the other enterprises/institution

2.3. Identifying user needs

The experts pointed out that in order to compare situation of Armenia in the field of science, technology and innovation (STI) activities respective data produced according to the international standards are needed. Indicators and data are also essential to advice national policy making, for example how to target innovation funding and other support measures. In the stakeholder meeting the participants expressed interest on these indicators. Clarification of the national data needs in collaboration with the stakeholders (such as the Committee of Science) is one of the tasks before second MS experts mission.

2.4. Initial discussion on data sources

It was stressed by the NSSRA experts that innovation data cannot be compiled from registers or other administrative sources, a dedicated survey to enterprises is needed. Essential data source for the survey population is business register. It was confirmed by the unit responsible of the business register in the NSSRA that the register contains the information needed for sampling, NACE code and size of the enterprise in terms of number of employees. Ministry of Economy has information on the patents and other IPR, which is useful in the selection of the enterprises for the questionnaire testing before pilot or full survey.

3. Conclusions and recommendations

The different stages of a survey were evaluated by MS experts and no major technical, political or organisational obstacles for the survey were observed at this stage. However, at present there is no budget for implementation of the survey.

The observations, conclusions and recommendations are in the following structured around the typical phases of a questionnaire-based survey.

3.1. Preparing the survey

The resource situation was not clarified at the time of the mission. The MS experts strongly recommend that a budget for the implementation of the Innovation survey is established as

soon as possible. The budget preferably could be made in two or three versions, reflecting the possible scenarios with respect to the expected financial situation of NSSRA.

The need for resources is determined especially by choice of data collection method, sample size and the number of indicators chosen. NSSRA thus needs to balance the available resources with the information requested by main users – including detail level and desired quality/certainty of the results.

The EU framework of the Innovation survey is defined in the relevant legislation and in several manuals, the most important of which are:

- The Commission Regulation (EU) No 995/2012, implementing Decision No 1608/2003/EC of the European Parliament and of the Council concerning the production and development of Community statistics on science and technology,
- The harmonised survey questionnaire accompanied by a set of definitions and methodological recommendations (see annex).
- The *Oslo manual* - internationally recognised standard methodology for collecting innovation statistics.

For this project the model questionnaire is believed to be the most useful document

When the content of the questionnaire will be agreed, the questionnaire is expected to be approved without problems and in a short time by the State Council after which it will be registered in the RA Ministry of Justice as a normative act. Shortly after approval the collection of data can be started. Possibilities for the online (web) questionnaire application should be examined.

3.2. Define purpose of survey

Main purposes of the survey that were identified are:

- Collection of important information regarding the Innovations
- To produce statistics comparable to European statistics
- To gain experience in order to be able to conduct a series of annual surveys
- To be able to produce (some of the) necessary data for international questionnaires, e.g. UNESCO, EU and EACU, etc.

3.3. Questionnaire

The new questionnaire should follow principles laid down in international questionnaire design. It should have a clear and logical, modular structure. The use of filter questions is recommended to minimise respondents' burden.

The questionnaire should be accompanied by instructions, either to the enterprises (if a postal questionnaire), or to the interviewers, clear definitions and explanations of e.g. technological terms.

Methodological experts of NSSRA in other divisions are expected to assist Social Sphere and Environment Statistics Division with the design of the questionnaire. MS experts recommend that an early decision concerning the survey design is taken. Decisions regarding the overall survey design depend among other things on availability of resources and user needs. Any potential obstacles or challenges should be addressed as early as possible in the project.

Recommendation by MS experts is to implement the harmonized European innovation survey questionnaire along with methodological and quality guidelines with possible national questions. National questions should be defined in co-operation with the stakeholders and users of innovation data.

3.4. Target and frame population

The target population of the survey is enterprises active in Armenia and the frame for sampling should be constructed from the business enterprise register of the NSSRA.

The coverage of the survey could follow the coverage of EU survey including enterprises with min. 10+ employees. It is possible for NSSRA to expand the coverage (e.g. include smaller enterprises than 10 employees) if it is considered relevant.

The MS experts recommend to follow international classification of economic activities (NACE rev. 2) and a measure of size of the enterprise (number of employees). As a supplement stratification by region could be considered if it is thought to have special influence on innovation statistics.

Sample size should be determined from balancing user needs and available resources. It was emphasized by the MS experts that the sample should be representative for the target and frame population concerning innovation and should aim at covering innovative as well as non-innovative enterprises.

3.5. Activities to be carried out by relevant experts of NSSRA before next mission in February 2016:

- For experts of the NSSRA to study carefully the three main documents delivered by the consultants (the innovation model questionnaire, notes to the questionnaire and methodological recommendations)
- Adequate resources for the pilot survey reserved
- Good co-operation with the business register and other enterprise statistics divisions ensured
- Possibilities of the online questionnaire examined
- Clarification of the national data needs in collaboration with the stakeholders (such as The Committee of Science) to be added to the model questionnaire
- Preliminary list of questions for the pilot questionnaire prepared (also in English) to be finalized in the February mission
- To prepare information on the target population of the enterprises for consultants to provide guidelines on the sampling issues

Annex 1. Terms of Reference

Terms of Reference

EU Twinning Project AM/14/ENP/ST/15

19-22 October 2015

Component 5: Innovation Statistics

Activity 5.1: Assessment of the current status

0. Mandatory results and benchmarks for the component

Mandatory results:

- Innovation statistics introduced (July 2017)

Benchmarks:

- Questionnaire for gathering innovation statistics is drafted (February 2016)
- Pilot survey conducted (January 2017)
- Test results analyzed (January 2017)
- Methodology on innovation statistics introduced (April 2017)
- Plan for regular production and publication developed (April 2017)
- Staff of NSSRA trained on issues related to innovation statistics (July 2017)

1. Purpose of the activity

- Assessment of current situation
- Understanding of the production methods applied in the NSSRA.
- Presentation of international and European standards incl. definition of innovation
- Overview of the Science, Technology, Innovation statistics currently produced by NSSRA
- Identifying user needs
- Initial discussion on data sources
- Development of plan for how to develop innovation statistics
- To involve relevant stakeholders in the discussions

2. Expected output of the activity

- Current situation assessed
- Definition of innovation clarified
- User needs identified
- Data suppliers identified
- Plan for development of innovation statistics drafted
- A lining up of work programme for the next activity (5.2 is scheduled to 1-5 February 2016)

3. Participants

NSSRA

Component leaders

- Mr. Gagik Gevorgyan
- Ms. Nelly Baghdasaryan

Other staff

- Nazaryan Anahit
- Hakobyan Anna
- Grigoryan Alina

MS experts

Mr. Ari Leppälahti, Expert, Statistics Finland

Mr. Gediminas Samuolis, Expert, Statistics Lithuania

Other stakeholders taking part in the activity

Representatives from:

- Ministry of Economy of RA
- Ministry of Education and Science of RA, State Committee of Science
- National Academy of Sciences of RA

will also be invited.

Annex 2: Programme for the mission

Time	Place	Event	Purpose / detail
Monday, morning	Hotel / NSSRA	Meeting with RTA	To discuss the programme of the week
	NSSRA <i>In Library</i>	Meeting with BC Component Leader and BC Experts	Assessment of current situation Presentation of international and European standards incl. definition of innovation
Monday, afternoon	NSSRA	Meeting with BC Component Leader and BC Experts	Understanding of the production methods applied in the NSSRA.
Tuesday, morning	NSSRA	Experts	Overview of the Science, Technology, Innovation statistics currently produced by NSSRA
Tuesday, afternoon	NSSRA <i>In Library</i>	Meeting with stakeholders	Meeting with stakeholders <i>At 15:00</i>
Wednesday, morning	NSSRA	Meeting with BC Component Leader and BC Experts	Identifying user needs. Initial discussion on data sources
Wednesday, afternoon	NSSRA	Meeting with BC Component Leader	Presentation of MS Experts' findings and agreement on the reached conclusions
		Ad-hoc meetings	Final clarifications with BC Experts, prepara- tion of report and presentation for BC Project Leader
Thursday, morning	NSSRA	Debriefing with BC Project Lead- er	Conclusions recommendations for the next activity and the implied work programme for BC Experts

Annex 3. Persons met

NSSRA:

Anahit Safyan, Member of the State Council on Statistics of RA
Gagik Gevorgyan, Member of the State Council on Statistics of RA
Nelli Baghdasaryan, Head of Social Sphere and Natural Protection Division
Anahit Nazaryan, Social Sphere and Natural Protection Division
Anna Hakobyan, Social Sphere and Natural Protection Division
Anzhela Dashyan , Business Register Division
Karine Aramyan, Business Register Division
Nvard Grigoryan, Business Register Division
Hasmik Soghomyan, International Statistical Cooperation Division

External stakeholders:

Aida Khachatryan, State Committee of Science of the RA Ministry of Science and Education
Loretta Movsisyan, RA Ministry of Economy
Shakeh Mejlumyan, RA Ministry of Economy
Tatevik Tovmasyan, National Center of Innovation and Entrepreneurship, RA Ministry of Economy
Zaruhy Yesayan, National Center of Innovation and Entrepreneurship, RA Ministry of Economy

RTA Team:

Peter Bohnstedt Anan Hansen, Resident Twinning Adviser
Margarit Bejanyan, RTA Assistant
Anush Poghosyan, RTA Language Assistant