

TWINNING CONTRACT

**AM/14/ENP/ST/15**

# **Strengthening of the National Statistical System of Armenia – Phase II**



## **MISSION REPORT**

**on**

### **Poverty Statistics**

#### **Activity 4.4: Review of annual data results**

Mission carried out by

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National Statistical Service  
Republic of Armenia



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## List of Abbreviations

EU	European Union
NSSRA	National Statistical Service of the Republic of Armenia
EU_SILC	Statistics on Income and Living conditions (Eurostat)
MD	Material Deprivation
AROPE	At risk of Poverty or Social Exclusion
ILCS	Armenian Income and Living Conditions Survey

## **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 fourth activity in component 4 and the actions planned for this activity were carried out as scheduled.

The purposes of the mission were:

- Analysis of annual results
- Review of quality of data
- Review of questionnaire
- Identification of indicators
- Discussion on publication and dissemination
- To involve relevant stakeholders in the discussions

The planned activities and the expected output were all achieved.

The MS experts 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 MS experts and do not necessarily correspond to the views of EU, NSSRA, Statistics Finland or Statistics Denmark.

## **2. Assessment and results**

### **The EU Material deprivation indicators**

In the first twinning mission on poverty statistics in September 2015, it was agreed that developing social exclusion statistics in Armenia should focus on collecting data required for the EU-SILC material deprivation indicators. Material deprivation is one of the three components of the headline EU poverty measure AROPE, people at risk of poverty or social exclusion. The two other components are “relative at risk of income poverty” and “low work intensity”. In Armenia, several resource-based poverty indicators can be computed (income, consumption) and there is information on labour market inclusion in the Armenian ILCS. Therefore, the focus was put only on material deprivation.

The EU material deprivation indicators are intended to cover some key aspects of living conditions which appear to be customary across the whole EU and from which some people are excluded due to a lack of resources. In the EU, the lack of resources is measured with relative at risk of income poverty, with threshold set at 60 percent of median equivalised disposable income.

The EU material deprivation indicator has been revised recently, and the discussions on the practical implementations are still ongoing (situation in April 2017). The current “old” material deprivation indicator was developed in mid-2000s, but was seen to have too limited number of items of which some were not very robust. There were nine items in the old indicator, and all were measured at household level.

An extended set of deprivation variables were collected in EU-SILC 2009, and the new revised MD indicator is based on validation study of these data<sup>1</sup>. The final list of items consists of variables that have passed the tests of suitability, validity, reliability, and additivity in the European data. Whether or not the same variables in the Armenian data would pass these tests was not explored in the twinning project, but would be an important step in further analysis of the Armenian social exclusion data.

In particular, the *suitability* of the items for the Armenian context should be explored. Suitability refers to checking that citizens (also in different population sub-groups) consider the items necessary for people to have an acceptable standard of living in Armenia. Put in other words, the question is whether a certain EU-validated deprivation item also reflects low standard of living in Armenia because it is seen as a necessity. It should also be explored whether the ILCS contains other more suitable variables that could be used to build an Armenian MD indicator.

The table below shows the list of variables in the old and the revised material deprivation indicator. For each item, the answer category “no (cannot afford)” or “no, because cannot afford to” is used for the indicator, i.e. only enforced lack of the item is counted as deprivation. A person/household simply not needing the item for other reasons is not considered as deprivation.

*Table. List of Eurostat variables in the old (9 item) and new (13 item) material deprivation indicator*

<b>Current ("old") material deprivation items (9)</b>	<b>Revised ("new") material deprivation items (13)</b>
<b><i>At household level</i></b>	
• coping with unexpected expenses;	• coping with unexpected expenses;
• one week annual holiday away from home;	• one week annual holiday away from home;
• avoiding arrears (in mortgage or rent, utility bills or hire purchase instalments);	• avoiding arrears (in mortgage or rent, utility bills or hire purchase instalments);
• a meal with meat, chicken, fish or vegetarian equivalent every second day;	• a meal with meat, chicken, fish or vegetarian equivalent every second day;
• keeping the home adequately warm;	• keeping the home adequately warm;
• a personal car.	• a personal car
• a washing machine;	• the household cannot afford to replace worn-out furniture (but would like to have)
• a colour TV;	
• a telephone;	
<b><i>At personal level</i></b>	
	• To replace worn-out clothes by some new (not second-hand) ones
	• Two pairs of properly fitting shoes, including a pair of all-weather shoes
	• To spend a small amount of money each week on oneself without having to consult anyone

<sup>1</sup> "Measuring material deprivation in the EU: indicators for the whole population and child-specific indicators". Eurostat methodologies and working papers, 2012 edition.

	• To get together with friends/family for a drink/meal at least monthly
	• To have regular leisure activities
	• To have internet connection

An ad hoc module on MD with new items was collected again in 2013, 2014 and 2015. From 2016 onwards six new items are collected in the yearly SILC survey and three old items were dropped.

There is some uncertainty on whether the enforced lack of internet connection should be included in the list, and whether it should be at household or personal level. Based on the information received during the mission from the discussions of the EU-SILC task force taking place at the same time (3-4 April), internet connection should be included at personal level. Therefore, it is included as an item in this report. However, as explained later, it had to be used at household level.

### **Collection of the EU MD variables in the Armenian ILCS**

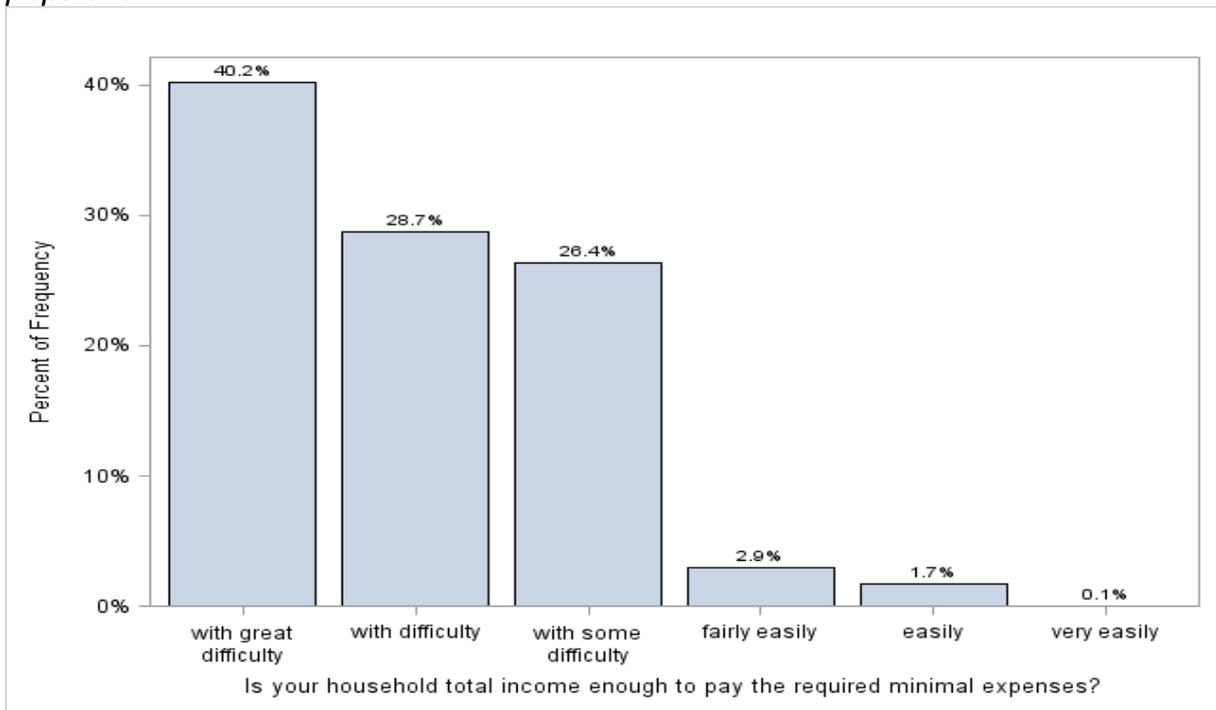
To collect the data required for the EU material deprivation indicator, a pilot was conducted in the fall 2015. After the pilot, a social exclusion module was added to the 2016 ILCS data collection. Some variables in the main questionnaire were also amended with the answer category “no, cannot afford to” to measure enforced lack of the item.

All variables required for both the old and the new EU MD indicator had been collected and were available in the data used by the experts. The data consisted of selected parts of the 2016 data, in a household file (5,184) and personal file (19,259) which could be linked. Sampling weights were inverses of inclusion probabilities, and were used in the analysis. There were no item non-response (do not know/do not want answer) in the social exclusion variables. Completeness of the data had been checked, and callbacks to the respondents made in case of uncertainties. This is a good practice and improves the data quality.

Internet connection was available only at household level in the 2016 questionnaire with the “cannot afford” option. At personal level, only access to internet was asked. Therefore, internet connection was used as a household level variable in the social exclusion indicators. It is foreseen that the new EU new material deprivation indicator (13 items) includes internet connection at personal level. The 2017 Armenian ILCS questionnaire already has new questions on access to internet at personal level, which could be used when the data becomes available.

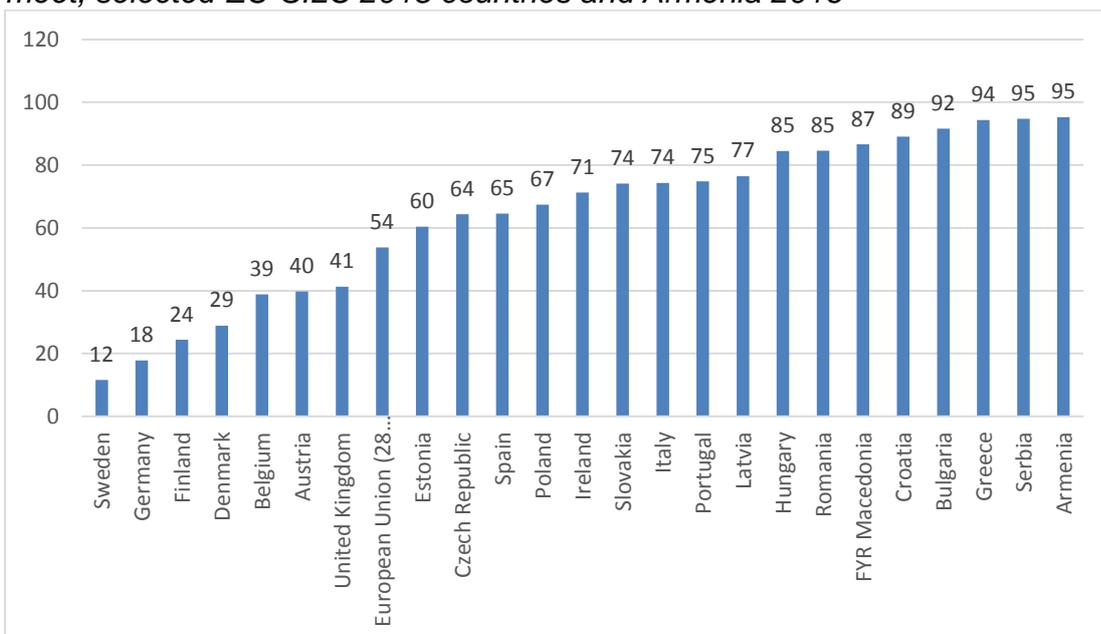
The questions added to the Armenian ILCS include “making ends meet” question, which is not part of the material deprivation indicator but is known to be highly correlated to the latent construct of deprivation. This variable can be used, in part, to assess validity of the material deprivation indicator. The simple cross-tabulations of Armenian EU-MD indicator with making ends meet question give promising and plausible results. However, the share of households reporting difficulties is very high. This “making ends meet” question should be retained in the ILCS questionnaire; it can be used in itself and for validation purposes.

Figure. Distribution of the variable “making ends meet”, ILCS Armenia 2016, % of population.



The share of population in households with difficulties in making ends meet (3 categories together) is much higher than on average in the European Union, but at the same very high level as in Serbia and Greece.

Figure. Percentage of population living households with difficulties in making ends meet, selected EU-SILC 2015 countries and Armenia 2016



Source: Eurostat Database table ILC\_MDDD11 and the ILCS

In terms of validity assessment, the experts suggest that the EU-MD indicators are verified against other available information, besides “making ends meet”, that should be correlated with material deprivation. Such information could be for instance income and consumption based poverty indicators. The experts did not have access to income or consumption data during this mission due to preliminary nature of the data.

EU material deprivation indicators are multidimensional deprivation indicators. It should be noted that a multidimensional poverty indicator tailored for Armenia has already been constructed and published for Armenia. This measure has more and quite different dimensions, and shows that around 30 % of Armenian people live in multi-dimensionally poor households. The MD-deprivation thresholds are arbitrary in their nature. When analyzing the results of the EU-MD indicator deprivation levels are quite high compared to the Armenian multidimensional poverty indicator. Thus construction of more suitable indicators would be justifiable for dissemination, where international comparisons are not in focus.

### **Computation of the “old” 9 item EU-MD indicator**

For the old EU-MD indicator, all variables are collected at household level. The computation is therefore straightforward. The households are merged with the personal file containing the household members and the household weight is applied. For all items, the “no, cannot afford to” or “no” answers are recoded to 1 and other answer categories to 0.

The deprivation variable arrears is composed of three variables (socex1\_1 rent or mortgage/socex1\_2 utility bills/socex1\_3 hire purchase installments), and takes the value of 1 if there are arrears (once, twice or more) in any of the three variables, and value 0 otherwise.

The deprivation variable telephone is composed of two variables (c8\_11 fixed line /c8\_12 mobile), and takes the value of 1 if the household has answered “no, cannot afford to” to either of the questions.

Different coding was used for variables on washing machine, telephone, and television (code 3 for “no cannot afford to, other variables have code 2).

The units of analysis are persons, not households. The nine household deprivation variables (coded to 1/0) are therefore merged to the personal file. Alternatively, the personal and household file can be merged before recoding the variables.

The sum of deprivations over the nine items is then added as an additional variable to the dataset. The tabulations can then be done across all thresholds from one to 9. The EU *material deprivation* indicator takes the value of 1 when the sum of deprivations is at least 3 and the value 0 otherwise. Likewise, the EU *severe material deprivation* indicator uses the threshold of at least 4 deprivations.

### **Computation of the “new” revised 13 item EU-MD indicator**

The new revised indicator has variables measured at personal level for adults aged 16 or more. This complicates the computations because deprivation variables have to be constructed/imputed also for children.

Eurostat has proposed two scenarios to impute the personal deprivation variables to children.

In the first, the same adult deprivation items are imputed to children when more than half the number of adults in the household lack an item, then the children living in the household are considered as deprived from that item. In the second method, the children are deprived if they also miss at least three household deprivation items (out of the seven household items included in the list), in addition to the condition of the first method.

Both „child deprivation imputation” methods were applied to the Armenian data. First, the proportion of adults in a household suffering from deprivation was computed for all adult personal deprivation variables. A deprivation index for the household was then constructed taking value 1 if the proportion was higher than 0.5. This index was then merged to the children, and used for the missing deprivation values for children.

The same „50 %” rule could be used for adults as well, instead of their actual personal responses, which may contain intra-household variations. In this mission report, the adult deprivation variables are used as reported in the data. Eurostat may have used aggregated household-level items in their computations instead of the personal responses. This point remains to be checked and clarified before the next mission. In practice, it is unlikely that the different methods would yield very different results.

In the second option, the additional condition applied to children is that their household is also missing at least three of the seven household level items. Separate deprivation item variables were constructed to the data to reflect this. Because internet connection was available only as a household variable, the condition applied to the Armenian data was three out of eight items.

The Indicators Sub-group (ISG) of the EC Social Protection Committee has expressed slight preference for the second imputation method. Consequently, the experts recommend that the second method is chosen when the Armenian new revised EU-MD indicator is computed.

The preliminary results on Material Deprivation has been presented to the NSSRA staff in the form of a working paper.

## **Measuring material deprivation for children**

A thematic ad-hoc module on MD was included in the 2009 wave of the EU Statistics on Income and Living Conditions (EU-SILC). This module consisted of household items, adult (16+) items as well as items specifically focused on the deprivation of children (hereafter “child-specific items”).

The 2009 ad-hoc EU-SILC module included information on the specific situation of children. In the first in-depth analysis of the 2009 EU-SILC data, an optimal set of children’s MD items was identified and a child MD index was recommended for use by EU Member States and the European Commission. These child MD items were then included again in the 2014 ad hoc EU-SILC module on deprivation and well-being, allowing additional analysis by Guio et al (forthcoming). The 2012 and 2016 analyses tested the robustness of the child items at the EU level and in all Member States.

In EU-SILC, data relating to the living conditions of children are not collected from the children themselves but from the adult answering the “household questionnaire” (household respondent). According to the survey protocol to be followed by countries, if in a given household at least one child does not have an item, it is then assumed that all the children belonging to that household lack that item. It would of course be preferable to know the deprivation levels of each child in a household separately; it would then be possible to study differences in child deprivation within each household as well as between each household (e.g. if girls suffer

more deprivation than boys, or teenagers more than younger children living in the same household). Collecting this type of information has been considered quite delicate and it would also lengthen significantly the EU-SILC questionnaire.

In the Armenian data, child deprivation questions are asked individually from each child, and depending on the age of the child (1-17 or 6-17 years). This is different from EU-SILC, where child specific questions are asked from the household respondent for all children in the household. E.G Do all children have books suitable for their age. Furthermore the questions in EU-SILC only relates to children in the household under the age of 16.

Among the items proposed to measure child MD, some are identical or similar to the proposed new (13-item) whole population indicator, either collected at the household level or at the adult level. The final list of items proposed by Guio et al (2012) for the measurement of child MD, subsequently confirmed by Guio et al. (forthcoming), consists of 12 “child-specific” and 5 “household” items:

1. Child: Some new clothes (Not second-hand)
2. Child: Two pairs of shoes
3. Child: Fresh fruits & vegetables daily
4. Child: Dinner with meat, chicken or fish every second day.
5. Child: Suitable books
6. Child: Outdoor leisure equipment
7. Child: Indoor games
8. Child: Leisure activities
9. Child: Celebrations of birthdays, holidays etc...
10. Child: Invite friends over
11. Child: School trips
12. Child: A weeks holiday away from home
13. Household: Replace worn-out furniture
14. Household: Arrears
15. Household/Personal for adults: Internet
16. Household: Home adequately warm
17. Household: Car

The preliminary results on Material Deprivation for children based on preliminary data from the first half of 2016 has been presented to the NSSRA staff in the form of a working paper.

### **3. Conclusions and recommendations**

The EU Material Deprivation items have been successfully collected in the 2016 ILCS Survey alongside some additional national items, including a module on Child Deprivation. Data quality seems to be very high. The data collected seem to be coherent with other background information such as the household’s ability to make ends meet. The collected data provide the necessary information for making solid international comparisons with both the current and the revised EU-SILC material Deprivation indicators.

Some of the preliminary tables show high levels of deprivation in Armenia. The Material Deprivation indicators have been constructed in a European context. The EU-indicators calculated based on the ILCS indicators are comparable with the European indicators, but they are not necessarily suitable for the Armenian context, as they imply very high levels of deprivation, that do not necessarily coincide well with other Armenian poverty indicators. This

should be further evaluated by NSSRA and the NSSRA is encouraged to construct new national indicators that they find suitable in an Armenian context.

Validity and internal consistency should be systematically checked on the individual Material Deprivation items prior to publication of the data. Validity could for instance be checked using cross-tabulations on other poverty indicators, E.G. Consumption and income levels for households with Material Deprivations as well as urbanization.

In the case that the results on single Material Deprivation items seems implausible to the NSSRA it might be necessary to review the interviewer practices to further validate the results. If necessary a revision of the interviewer instruction could be another tool moving forward to ensure the questions are posed correctly.

Constructing the relevant tables for both analysis and dissemination requires a lot of work and technical skill. The Household Survey Division is currently relying heavily on the skills of one, maybe two co-workers in the IT-department to produce relevant tables. This has the potential to severely delay the processes in case of absence or other unexpected tasks. Thus, the NSSRA are strongly encouraged to increase the efforts in practicing and teaching basic programming skills to the employees in the Household Survey Division. On the job training, where employees work together with the IT-department as tables are being constructed, could be a good way to improve the IT-skills in the Household Survey Division.

The 2016 ILCS survey data have provided many interesting results on material deprivation and should be disseminated in some form during 2017. However, it's also important that the NSSRA are confident that the results are plausible and feel prepared to explain the results when they are published. The results should be accompanied by a quality report, that describe coverage, statistical uncertainty and risk of bias that may influence the results when published – such a report already exists for the ILCS as a whole and could be reused.

The first year of the survey could partly be considered as a pilot, meaning that should the NSSRA during the analysis find some items to be unreliable it may be necessary to proceed with only a partial dissemination in 2017 followed by a full publication in the following years as the survey is improved.

Prior to the next mission in June NSSRA should analyze the results of the proposed indicators by MS Experts. NSSRA should in this period evaluate the validity of the results for the individual Material Deprivation items and are encouraged to come up with ideas for good national thresholds/indicators.

At the next mission in June it's our hope that the NRSSA can present a plan for publication in the Armstatbank and possibly a section/chapter in the national report on Poverty (*Social Snapshot and Poverty in Armenia*) dedicated to material deprivation. The recommendation is to have the first results published no later than by the end of 2017.

## Online resources

The EU-SILC website

<http://ec.europa.eu/eurostat/web/income-and-living-conditions>

SILC working papers are available under CIRCABC in the methodology tab along side the latest manuals (DOC65).

Methodology on Material Deprivation (The old indicators)

[http://ec.europa.eu/eurostat/statistics-explained/index.php/EU\\_statistics\\_on\\_income\\_and\\_living\\_conditions\\_\(EU-SILC\)\\_methodology\\_-\\_material\\_deprivation\\_by\\_dimension](http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_statistics_on_income_and_living_conditions_(EU-SILC)_methodology_-_material_deprivation_by_dimension)

The EU-SILC database

<http://ec.europa.eu/eurostat/web/income-and-living-conditions/data/database>

Guio, Gordon, Marlier, *Measuring material deprivation in the EU – indicators for the whole population and child-specific indicators*, 2012, Eurostat.

<http://ec.europa.eu/eurostat/documents/3888793/5853037/KS-RA-12-018-EN.PDF>

## Annex 1. Terms of Reference

<p style="text-align: center;"><b>Terms of Reference</b></p> <p style="text-align: center;"><b>EU Twinning Project AM/14/ENP/ST/15</b></p> <p style="text-align: center;"><b>3-7 April 2017</b></p>
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### Component 4: Poverty Statistics

#### Activity 4.4: Review of annual data results

#### 0. Mandatory results and benchmarks for the component

Mandatory results:

- Social exclusions statistics introduced and calculated (July 2017)

Benchmarks:

- Questionnaire for social exclusion pilot survey drafted (October 2015)
- Pilot survey conducted (December 2015)
- Test results calculated (December 2015)
- System of indicators on social exclusions for children introduced (July 2017)
- Staff of NSSRA trained on issues related to the social exclusions statistics (July 2017)

#### 1. Purpose of the activity

- Analysis of annual results
- Review of quality of data
- Review of questionnaire
- Identification of indicators
- Discussion on publication and dissemination
- To involve relevant stakeholders in the discussions

#### 2. Expected output of the activity

- Results analysed
- Quality reviewed
- Questionnaire reviewed
- Indicators identified
- Plan for publication and dissemination developed
- A lining up of work programme for the next and last activity
  - Activity 4.5 is scheduled to June 2017 (*Follow-up on achievements and recommendations for the future*)

### **3. Participants**

#### **NSSRA**

Component leaders

- Mr. Gagik Gevorgyan, Member of Council on Statistics of RA
- Ms. Lusine Markosyan, Head of Households Surveys Division of NSS RA

Other staff

- Ms. Armenuhi Arushanyan, Head of IT Development Division of the IT and Information Resources Management Department, the National Statistical Service of RA.
- Ms. Aida Badalyan, Leading specialist of the Households Survey Division, the National Statistical Service of RA;
- Ms. Arus Galstyan, first category specialist of the Households Survey Division, the National Statistical Service of RA;
- Ms. Laura Avetisyan, second specialist of the Households Survey Division, the National Statistical Service of RA;
- Ms. Diana Martirosova, Households Surveys Division, NSS RA

#### **MS experts**

Mr. Jarl Quitzau, Expert, Statistics Denmark

Mr. Veli-Matti Törmälehto, Expert, Statistics Finland

#### **Other stakeholders taking part in the activity**

Representatives from

- Ministry of Labour and social issues of RA
- Ministry of Education of RA
- Ministry of Health of RA and
- UNICEF

will also be invited.

## Annex 2: Programme for the mission

<b>Time</b>	<b>Place</b>	<b>Event</b>	<b>Purpose / detail</b>
Monday, noon (3/4)	NSSRA	Meeting with RTA	To discuss the programme of the week
Monday, afternoon (3/4)	NSSRA	Meeting with BC Component Leader and BC Experts	Assessment of situation and presentation by <b>BC</b> of the expected outcome of current mission
Tuesday, morning (4/4)	NSSRA	Meeting with BC Component Leader and BC Experts	Analysis of the annual results and review of quality of data
Tuesday, afternoon (4/4)	NSSRA	Meeting with BC Component Leader and BC Experts	Review of the questionnaire and discussion on needs for improvements
Wednesday, morning (5/4)	NSSRA	Meeting with BC Component Leader and BC Experts	Identification of indicators Discussion on publication and dissemination
Wednesday, afternoon (5/4)	NSSRA	Meeting with BC Component Leader and BC Experts	Continued discussions on publication and dissemination Preparation for stakeholders meeting
Thursday, morning (6/4)	NSSRA / <i>Meeting room</i>	Meeting with stakeholders	Meeting with stakeholders
Thursday, afternoon (6/4)	NSSRA	Meeting with BC Component Leader and BC Experts	Preparation of final conclusions, road map and Mission Report
Friday, morning (7/4)	NSSRA	Meeting with BC Component Leader  Ad-hoc meetings	Presentation of <b>MS Experts'</b> findings and agreement on the reached conclusions  Final clarifications with BC Experts, preparation of report and presentation for BC Project Leader
Friday, afternoon (7/4)	NSSRA	Debriefing with BC Project Leader	Conclusions and decisions and their consequences for the next activity and the implied work programme for BC Experts

## **Annex 3. Persons met**

### **NSSRA:**

- Stepan Mnatsakanyan, President of the NSSRA
- Gagik Gevorgyan, Member of Council on Statistics of RA
- Anahit Safyan, Member of the State Council on Statistics of RA
- Lusine Markosyan, Head of Household Surveys Division
- Diana Martirosova, Household Surveys Division
- Anna Amroyan, Household Surveys Division
- Arus Galstyan, Household Surveys Division
- Laura Avetisyan, Household Surveys Division
- Armenuhi Arushanyan, IT Development Division

### **External stakeholders:**

- Lusine Yeremyan, UNICEF

### **RTA Team:**

- Peter Bohnstedt Anan Hansen, Resident Twinning Adviser
- Liana Atoyán, RTA Assistant
- Anush Poghosyan, RTA Language Assistant