

# The European Union's IPA 2013 Programme

“Support to the Improvement of Statistical Information System” - Albania

Europe Aid/136334/IH/SER/AL

Service contract no. (CRIS) AL/IPA2013/03

Output 1c.1:

## Assessment of current situation and follow-up strategy on Labour Force statistics

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This project is funded by  
The European Union

A project implemented by



May 2017

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## Contents

<b>PROJECT REFERENCES</b> .....	3
<b>REPORT OVERVIEW</b> .....	4
<b>COMMON CONCLUSIONS</b> .....	5
<b>DESCRIPTION OF REPORT OBJECTIVES</b> .....	8
<b>BACKGROUND</b> .....	9
<b>METHODOLOGICAL APPROACH</b> .....	10
<b>ANNEX 1. THE LIST AND CONTENT OF PROPOSED COMPREHENSIVE TRAINING PROGRAMME FOR LFS STATISTICIANS (TRAININGS AND WORKSHOPS)</b> .....	14
<b>ANNEX 2. ABBREVIATIONS AND ACRONYMS</b> .....	16



## PROJECT REFERENCES

Project number	reference	Europe Aid/136334/IH/SER/AL
<b>Project title</b>	Support to the Improvement of Statistical Information System	
<b>Contract number</b>	AL/IPA2013/03	
<b>Location</b>	Albania	
<b>Contractor</b>	The project is implemented by the consortium who is composed by ASCENTA IT SERVICES SRL and IN2 Zagreb	
<b>Contracting Authority</b>	Central Finance and Contracting Unit (CFCU) within the Ministry of Finance	
<b>Beneficiary</b>	The national statistical institution of Albania (INSTAT)	
<b>Project start date</b>	06 <sup>th</sup> of June 2016	
<b>Project end date</b>	05 <sup>th</sup> of June 2018	
<b>Project duration</b>	24 months	

### Status of document:

<b>Submitted on</b>	03 <sup>th</sup> of May 2017	
<b>Version</b>	1.0	
<b>Status</b>	Draft	
	For discussion	x
	Approved	

### Change history:

Version	Date	Summary of Change
V1.1	15 <sup>th</sup> of June 2017	Updated version for the Beneficiary's for discussion



## REPORT OVERVIEW

<b>Project:</b>	Support to the Improvement of Statistical Information System
<b>Component:</b>	<b>Component 1</b> - Redesign and improve corporate statistical business processes and enhance institutional capacities in the production and usage of Agricultural and Labour Force statistics
<b>Sub-component:</b>	<b>Sub-component 1c:</b> Institutional capacities and capabilities enhanced for the production and usage of Labour Force statistics, including advanced statistical analysis of Labour Market dynamics
<b>Activity:</b>	1c.1 Assessment of the inter-institutional communication and reporting protocols
<b>Output:</b>	1c.1: Report: Assessment of current situation and follow-up strategy on Labour Force statistics
<b>Expert:</b>	Dragan Vukmirovic
<b>Date of report:</b>	15 <sup>th</sup> of June 2017
<b>Venue:</b>	Tirana, Albania



## COMMON CONCLUSIONS

In this report, an overview of of current situation and follow-up strategy on Labour Force Statistics (LFS) in INSTAT and some recommendations for their necessary improvements are presented.

Basic document for this report is: Sector review of Implementation of the Labour Force Survey in Albania, 2016 and Project output 1a2.2: Report on consultations with stakeholders.

In short, the conclusions are as follows:

- The LFS is largely compliant with European standards. INSTAT staff has a high familiarity with EU concepts and guidelines and good knowledge of statistical methodology and best practices. LFS following the methodologies and harmonised definitions as stipulated by Eurostat's Regulations, Guidelines and Explanatory Notes on the LFS, allowing the comparability of results at international level<sup>1</sup>.
- LFS data comply with the EU definition of unemployment as described in Annex 1 of Commission Regulation (EC) No 1897/2000<sup>2</sup>, and the sequence of questions addressing the International Labour Organisation (ILO) variables on unemployment is in line with requirements highlighted by implementing regulations. LFS questionnaire complies with twelve principles of Annex 2 of Commission Regulation (EC) No 1897/2000 in order to ensure that the rate of unemployment is estimated in harmonised manner.<sup>3</sup>
- With the help of experts INSTAT has achieved remarkable results in the production of high quality and reliable statistics in line with European and international standards in recent years. However, several areas in which some changes are necessary or envisaged to further improve quality; relevance and organization of the survey are identified.

## Recommendations

A summary of the recommendations with high priority, which INSTAT should consider in its short and medium term LFS development plans, is provided below:<sup>4</sup>

- INSTAT should embark on the regular transmission of fully-verified LFS micro-data to Eurostat and standardised quality reports that includes:

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<sup>1</sup> Sector review of Implementation of the Labour Force Survey in Albania, 2016

<sup>2</sup> <http://publications.europa.eu/en/publication-detail/-/publication/601f967e-5ec0-4ee5-b664-f8f978a82a77/language-en>

<sup>3</sup> Sector review of Implementation of the Labour Force Survey in Albania, 2016

<sup>4</sup> Sector review of Implementation of the Labour Force Survey in Albania, 2016



- Refine and set up automatic procedures to prepare and fully-verify the LFS micro-data file to be transmitted to Eurostat on a quarterly basis, including the standardized quality report
- Calculate the standard errors and coefficient of variations for the most important quarterly and annual figures, as well as for all indicators to be included in the Eurostat Quality Reports
- Refine and set up automatic procedures to prepare the set of Eurostat main indicators to be published on quarterly and annual basis
- Achieve consistency between target population, sampling frame and population estimates, that includes:
  - Improve the weighing system/procedure adding the set of constraints on the age groups (5 years age-groups) as required by Eurostat, therefore putting contemporary constraints at national level as well as at the level of the statistical regions equivalent to NUTS II and at the prefecture level
  - Optimise weighting procedures to incorporate the most appropriate adjustment for total non-response bias, taking into account specific characteristics of non-respondents
  - Updating the sampling frame
- Set up automatic procedures for the longitudinal linkage of individual records to support:
  - Creation of the longitudinal KEY (unique identification number) for each individual to be included in the micro-data file to be delivered to Eurostat
  - Production of flow estimates at national level according to the current Eurostat methodology
  - Possible implementation of dependent interviewing Longitudinal imputation, including coding of ISCO, ISIC, ISCED
  - Estimation of correlations to be used for calculation of CVs
- Improve data and fieldwork management, that includes:
  - Set up of automatic/batch procedures for data management (to process the files received from interviewers on daily basis, to update the database of the completed interviews, to check for errors etc.
  - Set up of automatic/batch procedures for the production of a complete set of field and quality indicators to be used to regularly monitor the fieldwork



The full list of recommendations is provided in the report *Sector review of Implementation of the Labour Force Survey in Albania, 2016*.

From consultations with stakeholders and analysis of the current situation of LFS, the summarized main issues, identified by this activity that need to be addressed in the future, are as follows<sup>5</sup>:

- General capacity building regarding the theoretical and practical knowledge in time series analyses with a focus on stochastic models and seasonal adjustments.
- More extensive training in SPSS<sup>6</sup> and SAS<sup>7</sup> (parameterized macros) using real LFS data sets for data management and time series analyses;
- General capacity building regarding the Data Management of Statistical Information System including data sources linkage, data processing and data quality.
- Active participation in all the training sessions of representatives of National Employment Service (NES) and Ministry of Social Welfare and Youth (MSWY) that are in charge of labour statistics.
- Active participation the representatives from MSWY and NES in INSTAT training for increasing their capacity in data analyses and in using SPSS software for data processing.
- Recommendation is to increase the LFS staff capacities via a time series training which should effectively address the growing and diverse needs for skills and competencies in INSTAT in both its content and methods for the following topics:
  - Characteristics of time series data
  - Stochastic models
  - Forecasting of several time series
  - Examples and applications to the LFS survey (SPSS examples)

The list and content of proposed comprehensive training programme for LFS statisticians (trainings and workshops) are presented in Annex 1.

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<sup>5</sup> Project output 1a2.2: Report on consultations with stakeholders

<sup>6</sup> [www.ibm.com/analytics/us/en/technology/spss/](http://www.ibm.com/analytics/us/en/technology/spss/)

<sup>7</sup> <https://www.sas.com/>



## DESCRIPTION OF REPORT OBJECTIVES

### Objectives:

Although recent improvements have been introduced in labour market statistics data collection, further progress needs to be made to increase the data quality assurance and reporting in this statistical area that is in Albania of high political interest and closely followed by the MSWY. There is an apparent need to upgrade the national capacities in advanced statistical analysis of the dynamics of the labour market, especially with respect to seasonal adjustments, calculation of labour cost indexes on a quarterly basis, econometric modelling, and the creation of reconciliation tables as in puts for national accounts.

The main objective of this report is:

- Assess of current situation on LFS
- Assess INSTAT capacities and training needs in data analyses and for data management and data integration in a diverse statistical system.

**Expected results for the sub-component 1c:** Institutional capacities and capabilities enhanced for the production and usage of LFS, including advanced statistical analysis of Labour Market dynamics

Support shall be provided for further improvements of labour market statistics and the related analysis:

- Thorough assessment of the actual situation with respect to the production and usage of the statistics and identification of improvements to be made;
- Technical assistance with the conduct of model-based data analysis of gross and net flows of population into the labour market;
- Training on seasonal adjustments to increase capacities for carrying out seasonal effects analysis on quarterly employment and unemployment estimates;
- Support the analysis of data from labour cost surveys, and assist with the calculation of labour cost indexes;
- Assist the development of methodologies for LFS longitudinal and cross-sectional analysis for clarifying the structure of the labour market in terms of its dynamic components;
- Provide technical assistance for increasing internal capacities to improve the cross-domain coherence between labour force survey estimates and national accounts;



- Assist the execution of quality analysis on LFS and the compilation of manuals and quality books in line with the applicable rules and practices of the European Statistical System (ESS);
- Support INSTAT with its endeavours to promote, through targeted actions, the usage and interpretation of labour market indicators.

## BACKGROUND

The report is related to the work within the IPA 2013 Project: Support to the Improvement of Statistical Information System (Project). Project is conceptualized into three main components with large number of activities, sub-activities and tasks having a different degree of complexity and largely depending on a number of various factors, of internal and external nature.

**Component 1** - Redesign and improve corporate statistical business processes and enhance institutional capacities in the production and usage of Agricultural and Labour Force statistics

**Component 2** - Develop and test system for upgraded corporate ICT infrastructure with inclusion of establishment and pilot implementation of centralised Data Warehouse(s)

**Component 3** - Strengthen communication function and statistical coordination role of INSTAT with focus on dissemination and quality management.

The activities to be performed during the Project have been singled out according to the objectives of the Project and were further defined according to discussions made during the meetings with the beneficiary's - INSTAT nominated experts. The institutional framework provides solid background, so that the project is managed in an efficient and transparent way at high professional level and respecting existing legislation.

The purpose of this Project is to enhance the institutional capacities in the Albanian Statistical System (ASS), and in particular in INSTAT, for streamlining the statistical processes and development of a redesigned IT architecture based on the data warehouse concept, enabling efficient and effective production, analysis and dissemination of official statistics meeting the requirements of the acquis in statistics and following best practices as implemented in the ESS.

***This report***, Improvements on data collection methodologies, standardisation and modern tools, is an output 1a.2.4 for the:



- **Component 1:** Redesign and improve corporate statistical business processes and enhance institutional capacities in the production and usage of Agricultural and Labour Force statistics;
  - **Sub-component 1c:** Institutional capacities and capabilities enhanced for the production and usage of Labour Force Statistics, including advanced statistical analysis of Labour Market dynamics
    - **Activity 1c.1: Assessment of the inter-institutional communication and reporting protocols**

## METHODOLOGICAL APPROACH

The methodological approach for creating this Report was based on planned activity 1c.1: Assessment of the inter-institutional communication and reporting protocols.

**The first step** was to review the input documents and other necessary information:

- Law no. 9180, dated 05.02.2004 "official statistics",
- Official Statistics Programme for the period 2017-2021(OSP2017-2021)
- Sector review of Implementation of the Labour Force Survey in Albania, 2016
- Project output 1a2.2: Report on consultations with stakeholders, Draft
- Project output 1a2.1: Review of the processes & data flows and necessary improvements in INSTAT
- Report on sector review of the Business statistics in Albania, 2015
- Light Peer Review of the Implementation of the European Statistics Code of Practice in the Republic of Albania - Final Report, 2014 (LPR 13)
- Report on Limited Peer Review of the Institute of Statistics of Albania, 2015 (LPR 15),
- List of tools (existing and envisioned),
- Quality reports and definitions,
- Non-key expert (NKE) mission reports

The basic documents for the preparation of this report are: Sector review of Implementation of the Labour Force Survey in Albania, 2016 (SRI LFS) and Project output 1a2.2: Report on consultations with stakeholders.

**Second step:** Consultation with INSTAT LFS staff.

**Third step:** Analysis of report on consultation with stakeholders in other government institutions which provide administrative data to INSTAT with emphasis on the specificity of the Labour market and assessment of Labour Force data providers capacities and the consistency between sources.

**Final step:** Draft report preparation.

## OVERALL ASSESSMENT

The LFS is one of the most relevant sources of labour market statistics in Albania. LFS is a quarterly survey, covering the whole country, conducted on continuous basis among private households for the purpose of gathering information about the labour force, using internationally agreed concepts and definitions. INSTAT publishes four quarterly statistical reports and produces an LFS publication every year. Anonymised LFS micro-data is made available to researchers in order to allow for more advanced statistical analysis.

LFS are collected, compiled, analysed and disseminated based on the 5-year Official Statistics Programme. Current Official Statistical Programme 2017-2021 is firstly approved by the Statistical Council, and then by the Albanian Parliament.

In the current organizational structure of INSTAT there is LFS unit under the Social Statistics Directory (Figure 1).

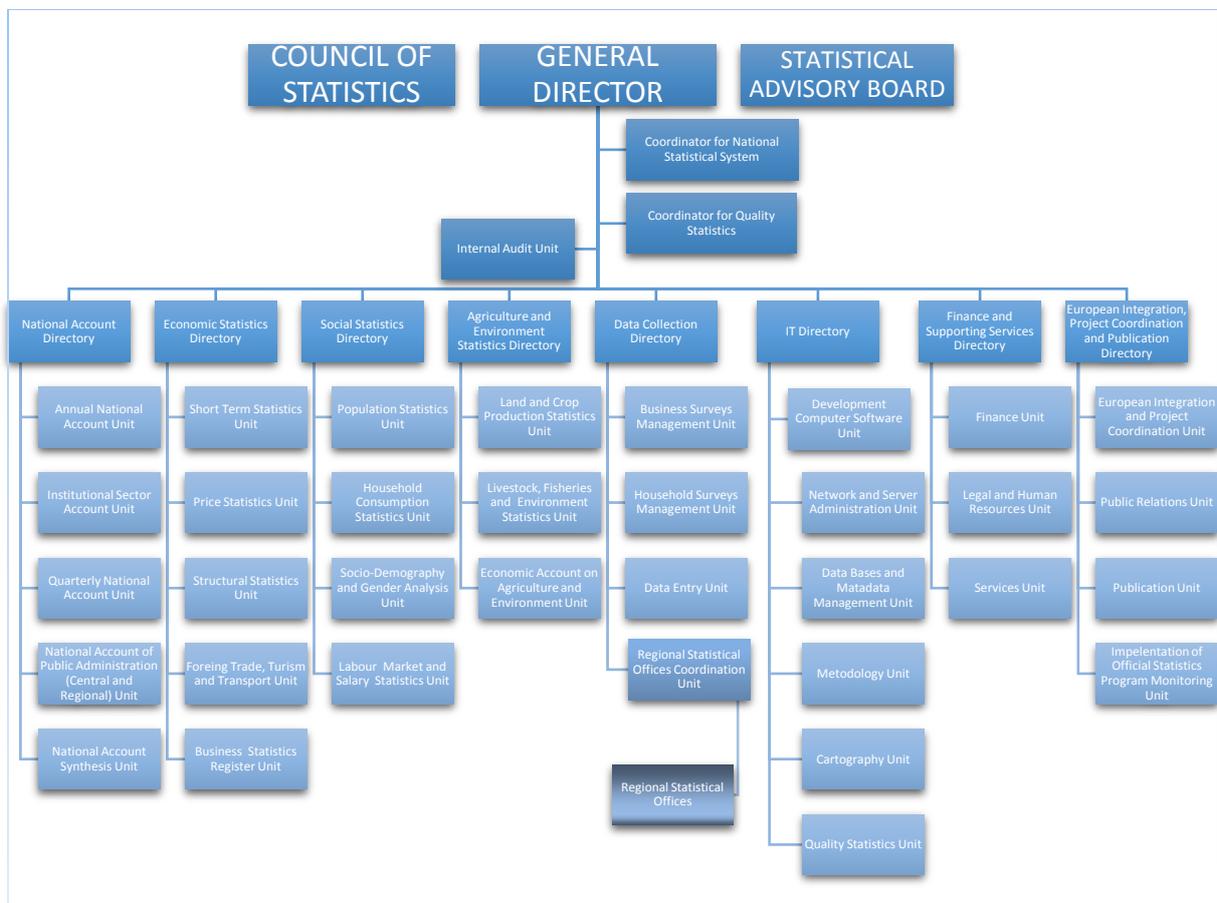


Figure 1. INSTAT's organisational chart



INSTAT introduced LFS in 2007 using face-to-face interviews and paper questionnaires (PAPI). This survey was carried out on an annual basis till 2011 with a fixed reference week.

During 2012 the LFS became a quarterly survey, with a rotating sampling scheme, in order to provide reliable quarterly estimates on employment and unemployment at national level. The data collection changed from PAPI to CAPI using small electronic devices (PDA), thus making it possible to provide more frequent and timely LFS statistics. Based on this change INSTAT is publishing quarterly labour market indicators starting from the first quarter of 2012.

In LFS are selected individuals aged 15 years and over. Working age population is the population between 15-64 years old. All individuals aged 15 years and over in the selected household are subject of LFS. During 2015 the sample size has been progressively increased. Starting from the first quarter 2016 the LFS will be able to provide more accurate quarterly data at the prefecture level.

Based on EU regulations and 5 years official statistical program, INSTAT introduced for the first time a quarterly survey in April 2011 with a rotating sample design. The same selected household is interviewed for 5 consecutive quarters. Also in this process there is a replacement of one-fifth of household in every quarter.

On the other hand, administrative data is collected and provided to INSTAT based on the Official Statistical Program.

- The employment data of non-agriculture private domain are collected and provide to INSTAT by NES. The main source of these data is the regional employment offices and the General Directorate of Taxation.
- Two sets of data are used:
  - Data on non-agriculture employment in the private sector compiled by the NES based on tax returns of establishments; and
  - Data on jobseekers registered at the NES.

Regarding the unemployment figures, the information related to **registered jobseekers** is provided to INSTAT by MSWY.

Data collection process is done in a proper manner. Also INSTAT Labour Market and Salary Statistics Unit gave detailed information about the survey process and tabulation programme used for the compilation and publication of results. LFS unit contains wealth information that should be tabulated using time series comparison, gross flows measurements and increase the number of indicators produced

Further progress in domain of LFS should be done in strengthen the INSTAT staff in making in depth analyses of labour market data. Also, INSTAT staff emphasise the need for calculation of labour cost indexes on a quarterly basis and econometric modelling.



The representatives from MSWY and NES require actively participating in INSTAT training for increasing their capacity in data analyses and in using SPSS software for data processing.

## CONCLUSIONS

LFS is one of the most important statistical sources about the Albanian labour market. It is the only data source which can be used for production of quarterly and yearly figures of the main aggregates and, in a longitudinal perspective, flows estimates as well. Due to the needs of short and long term analysis quarterly figures are produced also seasonally adjusted time series can be produced. Training should be done to increase the INSTAT staff capacities for carrying out seasonal effects analysis on quarterly employment and unemployment. Understanding of the basic modeling techniques as well as development of computational skills is using statistical software such as SPSS/SAS is very important. During the training all the examples and procedures should be tested in real LFS datasets.

Also, as a request from other institutions, recommendation is to including in the training sessions participants from different INSTAT units dealing with statistics production (not only LFS unit representatives) and participants from other institutions working in statistical units.

Regarding the software used during LFS data processing, there is a need to build statistical capacity for the staff to increase skills in writing their own macros to increase productivity and improve LFS data management. The methodology unit is using SAS procedures during weighting phase and also some procedures available by EUROSTAT for checking micro data before transmitted are written in SAS, training in SAS are important for the sector. The staff has limited knowledge in SAS. Also, further discussion are needed to be done with the ICT team for the software licenses plan, because SAS/SPSS are not open source and in case of limited budget training in R (open source statistical package<sup>8</sup>) should be considered for the staff.

## Recommendations for the future

As many European statistical offices are moving towards the use of Big Data profiting from the advantages of using them in their statistical system, INSTAT also has to increase capacities in this field.

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<sup>8</sup> <https://www.r-project.org/>



## **ANNEX 1. THE LIST AND CONTENT OF PROPOSED COMPREHENSIVE TRAINING PROGRAMME FOR LFS STATISTICIANS (TRAININGS AND WORKSHOPS)**

### **Training Topics at a Glance:**

#### **Analysis of time series**

- Characteristics of time series data
- Moving average models
- Partial autocorrelation
- Exploratory Data Analysis - Trends in time series data

#### **Stochastic models**

- Regression with time series data
- Smoothing and removing trend
- Periodograms used in time series data
- ARMA and ARIMA time series models

#### **Time Series Data Analysis**

- Seasonal decomposition
- Intervention effects
- ARCH and AR models
- Forecasting of several time series

As statistical information is a final product of more or less complex range of operations, the training aimed to strengthen the technical capacity of the staff of INSTAT, Ministry of Social Welfare and Youth and Employment and National Employment Service in the use of LFS data for the production of decent work indicators and their analysis. For the staff, being trained in the complete life cycle of the survey, from data collection to policy analysis, and by being responsible for the final execution and analysis of the surveys, it is a good benefited for improving survey data processing system and improve data/process quality.



## **Training Topics at a Glance:**

### **Data Collection**

- Statistical data sources (administrative/census/surveys/big data)
- Data collection methods (Web, CATI/CAPI/Mixed methods)

### **Data processing and data integration**

- Editing and imputation process
- Logical/physical integration of administrative and statistical data
- Statistical matching
- Record linkage using Link King- demonstration of linking 2011 PHC data with LFS

### **Quality and access to data**

- Product and Process Quality
- Access to official statistics- macrodata/ microdata
- Statistical disclosure control system- microdata aggregation

### **Metadata System**

- Structure Metadata
- Management Metadata
- Reference Metadata

### **Big Data for Official Statistics**

- Expected benefits of using big data
- Big data sources- mobile phone data/social media
- Big data challenges (legislative/mission changes of NSI-s)

### **Examples of Big Data uses in European Statistical System**



## **ANNEX 2. ABBREVIATIONS AND ACRONYMS**

**ASS** - Albanian Statistical System

**CAPI** – Computer assisted personal interviewing

**CATI** – Computer assisted telephone interviewing

**CFCU** - Central Finance and Contracting Unit

**Compendium** - The Statistical requirements compendium

**CV** - Coefficient of variation

**ESS** - European Statistical System

**EC** – European Commission

**EU** – European Union

**EU SILC** - European Union Statistics on Income and Living Conditions

**HBS** - Household Budget Survey

**ICT** – Information Communication Technology

**ILO** - International Labour Organisation

**INSTAT** - Institute of Statistics of Albania

**IPA** - Instrument for Pre-accession Assistance

**ISCED** - International Standard Classification of Education

**ISCO** - International Standard Classification of Occupations

**ISIC** - International Standard Industrial Classification

**LFS** - The Labour Force Survey

**LPR – 13** - Light Peer Review of the Implementation of the European Statistics Code of Practice in the Republic of Albania – Final Report, 2014

**LPR – 15** - Report on Limited Peer Review of the Institute of Statistics of Albania, 2015

**LSMS** - Living Standards Measurement Survey

**MSWY** - Ministry of Social Welfare and Youth (Ministria e Mirëqenies Sociale dhe Rinisë)

**NES** - National Employment Service in Albania (Shërbimi Kombëtar i Punësimit)



**NKE** - Non-key expert

**OSP 2017-2021** - Official Statistics Programme for the period 2017-2021

**PAPI** – Paper and Pencil Interviewing

**PDA** - Personal Digital Assistant

**SRI LFS** - Sector review of Implementation of the Labour Force Survey in Albania, 2016