

► Statistical Infrastructure and Capacities Required to Implement an LFS

Introduction

A Labour Force Survey (LFS) is the primary source of official statistics on employment, unemployment, labour underutilization, informal employment, working time, and other labour market indicators. Implementing a high-quality LFS requires more than a questionnaire and fieldwork. It depends on a comprehensive statistical infrastructure, institutional arrangements, technical expertise, and operational capacities that ensure the production of reliable, timely, and internationally comparable labour statistics.

Countries seeking to implement or modernize an LFS should establish the necessary capacities across the entire statistical production process, from survey design and data collection to processing, analysis, dissemination, and quality assurance.

1. Institutional and legal framework

A successful LFS requires a strong institutional foundation. The National Statistical Office (NSO) or responsible statistical agency should have a clear legal mandate to collect, process, and disseminate labour statistics. The legal framework should guarantee:

- Independence and professional integrity of statistical operations,
- Confidentiality and protection of respondents' information,
- Authority to conduct household surveys and access administrative data when required, and
- Sustainable funding for (regular) survey implementation.

Effective coordination mechanisms should also exist between the NSO, the labour ministry, the central bank, social security institutions, and other key stakeholders to ensure that labour statistics respond to national policy needs.

2. Statistical methodology capacity

Countries must possess sufficient technical expertise to design and manage complex household surveys. Core methodological capacities include both capacities on survey design and on sampling, as described below.

The adoption of internationally harmonized instruments, such as the ILO model LFS questionnaire, facilitates comparability and compliance with the latest International Conference of Labour Statisticians (ICLS) standards. The ILO model questionnaire is specifically designed to support the measurement of employment, unemployment, labour underutilization, status in employment, informality, and own-use production activities.

Specialized staff should be capable of calculating design weights, non-response adjustments, calibration factors, and variance estimation.

- **On survey design, statisticians should be able to:**
 - Define survey objectives and key indicators,
 - Design questionnaires,
 - Establish appropriate reference periods and concepts, and
 - Develop sampling strategies and survey protocols.
- **On sampling, the LFS requirements include:**
 - An up-to-date population/household sampling frame,
 - Expertise in stratification and multi-stage sample selection, and
 - Procedures for rotation schemes when surveys are conducted continuously or periodically.

3. Information technology infrastructure

Modern LFS increasingly rely on Computer-Assisted Personal Interviewing (CAPI) systems, given their increased efficiency and data quality results. Consequently, adequate IT infrastructure is essential.

In this sense, countries should have:

- Secure servers or cloud-based infrastructure,
- Data backup and disaster recovery systems,
- Reliable internet connectivity for synchronization of survey data,
- Tablet or mobile devices for field data collection, and
- Software for questionnaire programming, data management, and monitoring.

The implementation of a structured statistical production environment is strongly recommended. According to the ILO guidance on applying the Generic Statistical Business Process Model (GSBPM), all survey procedures, data, metadata, programs, and outputs should be maintained on a shared server with systematic organization, regular backup, and standardized file management procedures.

Standardization of data, metadata, programs, and procedures improves efficiency, quality, reproducibility, and long-term sustainability of survey operations.

4. Fieldwork and data collection capacity

Field operations represent one of the most resource-intensive components of an LFS. They require sufficient human resources, training systems, and field monitoring systems.

- **The human resources required include:**
 - Experienced field supervisors,
 - Well-trained interviewers,
 - Regional coordinators, and
 - Quality control staff.
 - Some of these roles can be performed by the same staff, where appropriate.
- **Training programmes should cover:**
 - Labour force concepts and definitions,
 - Interview techniques,
 - Use of CAPI devices,
 - Questionnaire flow and routing,
 - Handling difficult interviewing situations, and
 - Quality assurance procedures.
 - The ILO has developed structured training protocols based on predefined respondent profiles to facilitate systematic interviewer training and ensure consistent understanding of labour market concepts and questionnaire logic.
- **Effective field monitoring systems should be capable of tracking:**
 - Response rates,
 - Interview duration,
 - Enumerator productivity,
 - Data synchronization status, and
 - Geographic coverage.
 - Paradata and fieldwork indicators are increasingly used to monitor quality during data collection.

5. Data processing and quality assurance capacity

A country implementing an LFS must have specialized expertise in data processing and validation.

- **Related to data management, countries need to:**
 - Create of raw and cleaned datasets,
 - Code of occupations and industries,
 - Edit and validate data according to set procedures, and
 - Impute missing data when necessary.
 - Some of these roles can be performed by the same staff, where appropriate.
- **Labour force status and related indicators require sophisticated derivation procedures. Countries should be capable of producing variables on:**
 - Employment,
 - Unemployment,
 - Labour force participation,
 - Time-related underemployment,
 - Status in employment (ICSE-18),
 - Informal employment,
 - Informal sector employment, and
 - Own-use production statistics.
 - The ILO Variable Derivation Guide provides standardized procedures and flow charts for producing these indicators in accordance with the 19th, 20th and 21st ICLS standards.
- **In terms of quality assurance, countries should implement systematic validation procedures to identify:**
 - Mismatched question text or translation,
 - Inconsistent response categories,
 - Incorrect validation rules,
 - Routing errors,
 - Missing values,
 - Out-of-range values, and
 - Classification errors.
 - Comprehensive testing of questionnaires and processing systems before field implementation is essential. The ILO recommends extensive pre-testing using predefined respondent profiles and automated validation routines before survey deployment.

6. Statistical analysis and dissemination capacity

Producing labour statistics is not sufficient; countries must also be able to analyse and disseminate results effectively.

- **Data analysis capacities required of staff:**
 - Producing standard labour market indicators,
 - Calculating confidence intervals and sampling errors,
 - Conducting trend analysis, and
 - Producing disaggregated statistics by sex, age, education, geographic area, disability status, migration status, and other characteristics.
- **Dissemination strategies should cover:**
 - The publication of statistical bulletins,

- The production of analytical reports,
 - The maintenance of online databases,
 - Responding to data requests, and
 - Disseminating microdata under appropriate confidentiality safeguards.
- Timely dissemination strengthens the usefulness of labour statistics for policymaking, labour market monitoring, and international reporting obligations.

7. Project management and continuous improvement

Most often, an LFS is not a one-time activity but a continuous statistical programme. Therefore, countries need project management capacity to coordinate all phases of survey implementation.

The GSBPM framework provides a structured approach covering the full statistical production process, including specifying needs, design, build, collection, processing, analysis, dissemination, and evaluation.

Continuous improvement mechanisms should include:

- Periodic questionnaire reviews,
- Methodological evaluations,
- User consultations,
- Quality assessments, and
- Documentation and metadata management.

Conclusion

Implementing an LFS requires a combination of institutional commitment, statistical expertise, operational capacity, and technological infrastructure. Countries need strong legal frameworks, professional survey methodologists, robust sampling systems, trained field staff, modern CAPI infrastructure, data processing expertise, and effective dissemination mechanisms. When these capacities are developed within a structured statistical production framework and aligned with international standards, the Labour Force Survey becomes a powerful tool for monitoring labour markets, supporting evidence-based policymaking, and tracking progress toward national and international development goals.

► LFS implementation checklist

The checklist below summarizes the tasks and activities required of a National Statistical Office or any competent authority in the process of implementing an LFS, organized by Generic Statistical Business Process Model ([GSBPM](#)) phase. In the usual chronological order of implementation, the GSBPM phases are: *specify needs, design, build, collect, process, analyze, disseminate, and evaluate*.

1. Specify needs and institutional readiness

1.1. Governance and Legal Framework

- Legal mandate exists to conduct household surveys
- Statistical confidentiality provisions are in place
- Data protection regulations are established
- Sustainable funding has been secured
- Project governance structure established
- Survey manager appointed
- Coordination mechanism with key stakeholders

1.2. Human Resource Planning

- Core LFS implementation team established
- Survey methodologists identified
- Sampling specialists identified
- IT specialists assigned
- Data processing staff assigned
- Labour statistics analysts assigned

2. Design the Survey

2.1. Define Survey Objectives

- Labour market indicators to be produced are defined
- Frequency of survey rounds established
- Dissemination requirements identified
- User needs assessment completed

2.2. Questionnaire Development

- Questionnaire selected/adapted
- National adaptations documented
- Labour concepts aligned with latest ICLS standards
- Interviewer instructions prepared
- Question wording reviewed and tested

2.3. Sampling Design

- Sampling frame available and updated
- Sample size estimated
- Sample design developed
- Stratification defined

- Sample allocation completed

- Rotation scheme developed (if applicable)

- Weighting strategy defined

- Variance estimation strategy defined

3. Build Survey Infrastructure

3.1. IT Infrastructure

- Collection devices (tablets) secured and prepared
- Survey server setup
- Backup system operational
- Internet connectivity assured
- Telecommunications / data transmission channels established
- Arrangements are made to charge the tablets and power banks in the field
- Data transmission, storage and processing are secured to the highest standards

3.2. CAPI Development

- Electronic questionnaire structure built (i.e. variables, value-sets, forms)
- Question text uploaded
- Filters and skips programmed
- Derived variables programmed
- Validation checks programmed
- Language versions implemented
- Paradata collection configured
- Data synchronization procedures setup

3.3. Statistical Production Environment

- Standardized file structure established
- Data repositories established
- Documentation repositories established
- Processing scripts organized
- Version control procedures established

4. Develop Processing Systems

4.1. Data Processing Procedures

- ▶ Data import procedures developed
- ▶ Editing procedures developed
- ▶ Coding procedures developed
- ▶ Validation procedures developed
- ▶ Imputation procedures developed (if required)

4.2. Indicator Derivation Procedures

- ▶ Employment derivation programmed
- ▶ Unemployment derivation programmed
- ▶ Labour force derivation programmed
- ▶ Labour underutilization derivation programmed
- ▶ ICSE-18 classification procedures programmed
- ▶ Informality derivation procedures programmed
- ▶ Own-use production derivation procedures programmed

4.3. Standard Outputs

- ▶ Standard tabulations programmed
- ▶ Quality indicators programmed
- ▶ Standard dissemination tables developed

5. Test the Entire System

5.1. Internal Testing

- ▶ Questions and their translations are confirmed to correspond to their variables
- ▶ Dynamic text for each question is tested
- ▶ Response categories and their respective values are verified to be as documented
- ▶ Input type for each question verified
- ▶ Filters and skips verified
- ▶ Validation checks verified
- ▶ Derived variables verified
- ▶ Additionally requested electronic questionnaire features are tested
- ▶ Data and paradata transfer procedures tested
- ▶ Processing system tested

5.2. Pre-Test Using Profiles

- ▶ Test profiles prepared
- ▶ Internal pre-test conducted
- ▶ Processing chain tested
- ▶ Validation procedures tested
- ▶ Errors corrected
- ▶ Retesting completed

- ▶ Zero critical errors remain

5.3. Testing the survey management system

- ▶ Questionnaire application deployed on the server and interviewers' devices
- ▶ Assignments deployed and tested by interviewers
- ▶ Progress reports received at HQ
- ▶ Updates deployment tested

6. Prepare Field Operations

6.1 Recruitment

- ▶ Supervisors recruited
- ▶ Interviewers recruited
- ▶ Field coordinators recruited

6.2 Training

- ▶ Training materials finalized
- ▶ Interviewer manuals finalized
- ▶ Supervisor manuals finalized
- ▶ CAPI training completed
- ▶ Labour force concepts training completed
- ▶ Practical interview exercises completed
- ▶ Profile-based training completed

6.3 Fieldwork Preparation

- ▶ Assignments generated
- ▶ Devices distributed
- ▶ Contact procedures established
- ▶ Callback procedures established
- ▶ Monitoring procedures established
- ▶ Application updates procedure established

7. Conduct Data Collection

7.1 Fieldwork Execution

- ▶ Interviews conducted
- ▶ Data synchronized regularly
- ▶ Response rates monitored
- ▶ Interview duration monitored
- ▶ Field quality checks performed
- ▶ Paradata monitored

7.2 Quality Control

- ▶ Supervisor reviews completed
- ▶ Recontacts performed where required
- ▶ Daily monitoring reports produced
- ▶ Field issues resolved regularly

8. Process Survey Data

8.1. Data Management

- ▶ Raw data retrieved
- ▶ Data archived
- ▶ Validation checks run
- ▶ Coding completed
- ▶ Editing completed
- ▶ Derived variables generated

8.2. Weighting

- ▶ Design weights calculated
- ▶ Non-response adjustments applied
- ▶ Calibration completed
- ▶ Final weights validated

8.3. Final Dataset

- ▶ Final microdata file created
- ▶ Quality indicators calculated
- ▶ Standard tables generated

9. Analyze Results

- ▶ Statistical Analysis
- ▶ Labour force indicators calculated
- ▶ Disaggregated estimates produced
- ▶ Standard errors calculated
- ▶ Time-series consistency checked
- ▶ Quality assessment completed

10. Disseminate Results

10.1. Publications

- ▶ Statistical bulletin prepared
- ▶ Analytical report prepared
- ▶ Metadata documentation finalized
- ▶ Tables released

10.2. Data Access

- ▶ Database updated
- ▶ Public-use microdata prepared (if applicable)
- ▶ User support mechanisms operational

11. Evaluate and Improve

11.1. Post-Survey Evaluation

- ▶ Response rates evaluated
- ▶ Fieldwork performance reviewed
- ▶ Data quality assessed
- ▶ Processing procedures reviewed

- ▶ User feedback collected

11.2. Continuous Improvement

- ▶ Methodological improvements identified
- ▶ Documentation updated
- ▶ Training materials revised
- ▶ Next survey cycle planned
- ▶ Lessons learned documented

11.3. Readiness before launch

Confirm that:

- ▶ Questionnaire is finalized
- ▶ Sample is selected
- ▶ CAPI is fully tested
- ▶ Processing system is tested
- ▶ Validation system is operational
- ▶ Staff is trained
- ▶ Equipment is available
- ▶ Funding is secured
- ▶ Dissemination plan is prepared
- ▶ Quality assurance framework is operational