

TERMS OF REFERENCE



INDIVIDUAL CONSULTANCY TO UNDERTAKE CAPACITY BUILDING ON STATA IN MOZAMBIQUE AS A RESOURCE PERSON

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1. BACKGROUND INFORMATION

1.1 Background

The Southern African Development Community (SADC) is a Regional Economic Community comprising 16 Member States, namely; Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, Zimbabwe. Established in 1992, SADC is committed to Regional Integration and poverty eradication within Southern Africa through economic development and ensuring peace and security.

Article 14 of the SADC Treaty establishes the SADC Secretariat as the principal executive institution of SADC. The Secretariat performs its mandate and functions within the policy, strategic and programme provisions outlined in the Regional Indicative Strategic Development Plan (RISDP).

The Regional Infrastructure Development Master Plan (RIDMP), the SADC Regional Agricultural Policy (RAP), the Industrialisation Strategy and the Roadmap, among others, are complementary guiding frameworks for achieving the regional integration agenda. SADC has also developed various Protocols for domestication and implementation by Member States including the most recent one, the Protocol on Statistics, to enhance harmonization of statistics. The operating framework for implementing statistical activities as priorities for the region is the Regional Strategy for Development of Statistics (RSDS) and is aligned to SADC Vision 2050 and RISDP 2020-30.

1.2 Current situation in the sector

The SADC Vision 2050 earmarks Statistics a priority cross-cutting sector whereby by 2050, the region strategic objective in statistics is to realize a robust and responsive regional statistical system to underpin regional integration processes, including measurement of progress and impact. The SADC RISDP 2020-30 draws impetus from the Vision 2050 and thereby identify key intervention areas to achieve the expected outcome of enhanced statistical infrastructure, systems, and capacity across the region for production and effective use of harmonized regional statistics. The key intervention areas include primarily the development and implementation of policy and legal frameworks for coordinating regional statistics and capacity across the entire data value chain of the regional statistical system strengthened.

The Regional Strategy for Development of Statistics (RSDS) 2020-30 is complementary sectoral strategy for achieving regional integration as embedded in RISDP 2020-30, for statistics sector. In line with the strategic objective, expected outcome, implementation plan and strategic outputs of Statistics as embedded in RISDP 2020-30, the 6 identified strategic intervention areas of RSDS 2020-30 priorities for implementation are as follows:

- (i) Policy frameworks for development of regional statistics;

- (ii) Institutional strengthening and sustainability of the SADC Regional Statistical System;
- (iii) Harmonization of regional statistics;
- (iv) Digital transformation of regional statistics;
- (v) Capacity for data production, management, dissemination and use; and
- (vi) Quality of regional statistics.

In addition to the policy frameworks related to statistical matters in the region, a legal framework in the form of the Protocol on Statistics has been developed and approved to enhance the level of statistical development both nationally and regionally, facilitating the pursuit of monitoring and measuring progress of development agendas at national, regional, continental and global level. The Protocol is conceived as a binding instrument that will entrench and give legal effect to the statistical functions in the SADC region and is expected to give legal mandate to the SADC Secretariat to co-ordinate and provide oversight to the implementation of SADC Regional Statistical System.

At statutory level, the SADC Statistics Committee, comprising of Head of Statistics in the SADC Member States provides policy, strategic and professional guidance for the statistical development and integration processes in the region. The Committee meets at least once a year and monitor progress in the SADC Statistics Programme and oversees the implementation of statistical development. The Statistics Unit of Secretariat primary function is to co-ordinate and rationalize all regional statistical activities in line with continental and international statistical frameworks and provides technical and secretarial support to the Statistics Committee. The Committee reports directly to the SADC Council of Ministers.

Secretariat is prioritizing statistical capacity building through the Regional Statistics Project, funded by the World Bank Group with the project development objective of enhancing institutional capacity of the regional statistical system of the region. The scope of support to be delivered by SADC Secretariat to Member States also include trainings and technical assistance (TA) on statistical software to process and analyze censuses, surveys and large volume data. Within this context, Mozambique Statistics Office (Instituto Nacional de Estatística/INE) has requested Secretariat support in building capacity on STATA for intermediate and advanced level to enhance analytical skills of technical staff on three areas: demographic, social & vital statistics; economic statistics (national accounts and sectoral statistics); and data processing for surveys and censuses.

2. OBJECTIVES OF THE ASSIGNMENT AND EXPECTED RESULTS

2.1 Overall objective

The overall objective of this exercise is to enhance the capacity of Member States on collection, processing and analysis of census and surveys.

2.2 Specific objectives

The specific objective of the assignment is to undertake a national training on STATA to Mozambique to process and analyse censuses and surveys data, in three thematic areas, namely:

- (i) Demographic, Social and Vital Statistics
- (ii) Economic Statistics
- (iii) Survey and census processing

Furthermore, the objectives are also to:

- strengthen the technical capacity of INE staff in using STATA for advanced statistical analysis, focusing on Official Statistics.
- promote the use of do-files and automation techniques to improve efficiency, traceability, and standardization of analysis processes.
- assess the existing practices and use of STATA by the different departments of INE and encourage adoption of common methodologies across technical departments, ensuring coherence, quality, and statistical comparability

2.3 Expected results

The consultant is expected to achieve the following result:

- i. Strengthened technical capacity of INE Mozambique in the management and processing of data from census and surveys using STATA; and
- ii. Identification of gaps regarding use of STATA by the different departments of INE for roll out to close the gaps with specific timelines and associated tasks.

3. SCOPE OF WORK

3.1 Scope of work

This assignment primarily consists of providing national training for 10 working days on STATA to process and analyze census and survey data and also, to assess current practices on STATA by the different departments of INE as a resource person.

The training will be structured into two distinct levels:

- **Level I – Intermediate:** for staff with basic STATA skills needing to advance towards greater analytical autonomy.
- **Level II – Advanced:** for those already using the software who seek to deepen advanced and automated analysis and processing techniques

It is estimated 2 weeks intervention (10 working days) for undertaking the intermediate level and advanced level training with an audience that regroups statisticians from

different directorate of Mozambique Statistics Office (INE), with respectively 5 days for intermediate level advanced level training each respectively.

The training is expected to cover theoretical and practical sessions on data management, statistical analysis, tabulations, graphics and maps and how to process, compile and derive statistics indicators from census and surveys, among others. Gaps identification of current practices, analysis and remedial actions must be defined in detail to achieve results stated at 2.3 above through interactions with the audience.

The training report should contain summary of topics covered during training week, and training materials as annexes.

3.2 Geographical area to be covered

The assignment will be carried out in Mozambique.

3.3 Target groups

This consultancy is expected to target the Mozambique Statistics Office (Instituto Nacional de Estatística/INE), in particular, statisticians involved in processing and analysis of census and survey data from different departments of INE

3.4 Specific work

The assignment will be carried out primarily through the following tasks.

In particular, the consultant will be required to:

1. The consultant will be required to produce an Inception Report demonstrating how the training will be organised and its effectiveness towards impactful results. It should have the objectives and expected outcome of the training, a structured agenda and programme to cater for practical training on intermediate and advanced level on STATA. It should also contain the pre and post-training surveys to determine knowledge prior to the training and measure its effectiveness at the end.
2. The training must provide for theoretical and practical explanation on STATA. The consultant is required to obtain the dataset on past census and surveys data from Mozambique prior to the event and prepare training materials and STATA do files that cover at least the topics below, from intermediate to advanced level.

To cater for the needs of the different directorates, the training shall be split into core training on STATA on intermediate and advanced level respectively for all participants and specific training for the different directorates.

For intermediate level, the core shall include:

- Refresher training on STATA overall
- Data management/manipulation and cleaning including validation of data, detecting outliers, and treatment of missing data amongst others.

- Editing and validation of databases (data cleaning, filters, imputation rules).
- Creation of automated tabulation routines using do-files.
- Descriptive statistics
- Statistical analysis
- Stata Graphics
- STATA maps
- Stata syntax files
- Visualization
- Automated reporting
- Basic programming in STATA (Macros and macro content, manipulation of macros,...)
- Introduction to time series

The core for advanced training are, among others:

- Advanced data management (treatment of alphanumeric variables, merging and aggregating data, processing of date variable and time series operations, advanced management of graphs,...)
- Advanced programming in STATA (local and global macros, loops, sums and counters, temporary variables, programming to reproduce, debugging a programme, applications,
- Estimations methods, tests and predictions
- Projections
- Time series analysis
- Econometric modelling
- Multivariate regressions
- Integration of STATA with other tools (CsPro, Excel,...)
- Integration of STATA with other tools (e.g., CSPro outputs, export to Excel/PDF, MS SQL).

For the different directorates, the content should at least address the following, among others:

On demographic, Social and Vital statistics:

- Data manipulation and cleaning of census and social survey data in STATA.
- Analysis of mortality, fertility, nuptiality, and migration.
- Production of social and demographic indicators.
- Application of indirect estimation methods in STATA (e.g., Brass, Trussell).
- Generation of standardized indicator tables for dissemination.
- Other relevant topics.

On economic statistics:

- Preparation and harmonization of administrative and survey data.
- Time series analysis, econometric modeling, and multivariate regressions.
- Construction of macroeconomic indicators (Gross Domestic Product/GDP, Gross Value Added, Balance of Payments).
- Projections and simulations for macroeconomic analysis.
- Development of automated scripts for time series processing.
- Other topics as proposed by the trainer.

On data processing:

- Editing and validation of databases (data cleaning, filters, imputation rules).
- Creation of automated tabulation routines using do-files.
- Generation of complex tables with multiple variables and groupings.
- Integration of STATA with other tools (e.g., CSPPro outputs, export to Excel/PDF, MS SQL).
- Support in preparing standardized statistical reports.

3. Produce a Training Report that should include the following:

- Technical summary of topics covered during training weeks for use;
- An assessment of the current practices on STATA by different departments at INE Mozambique and gaps identified;
- Recommendations for closing of identified gaps with timelines and actions;
- Pre- and Post-Training Surveys assessment of participants knowledge and identifying areas of improvement; and
- Training Materials as annexes for use by INE Mozambique and sharing to non-participants.

4. QUALIFICATION AND EXPERIENCE REQUIREMENTS

This assignment is expected to be carried out by an individual consultant as the Master Trainer and there should be evidence of in-depth knowledge with statistical analysis software (STATA). The specific profile is provided below:

Qualifications and Skills

- A minimum of Masters Degree in statistics, economics, IT or related field
- Written and oral fluency in the English language is essential. Knowledge of Portuguese is an added advantage.
- Excellent oral and written communication, analytical, presentation and report writing skills in English Language.
- Excellent time management and organizational skills to prioritize workload and deliver needful during the training week.

General Professional Experience

- The Expert Must have at least ten (10) years of experience using statistics analysis software STATA pertaining to Official Statistics.

Specific Professional Experience

- Proven experience in statistical data processing and analysis, spatial analysis, modelling and data visualization using STATA for at least 3 major surveys for Official Statistics at national level;
- Experience in the design and implementation of training materials for the conduct of statistical data analysis training in Official Statistics using STATA;
- Extensive experience in as a resource person in delivering at least 3 training on STATA at national level, particularly using household and census data.

The expert must be independent and free from conflicts of interest in the responsibilities they take on.

Note that civil servants and other staff of the public administration, of the partner country or of international/regional organizations based in the country, shall only be approved to work as experts if well justified. The justification should be submitted with the tender and shall include information on the added value the expert will bring as well as proof that the expert is seconded or on personal leave.

5. REPORTING REQUIREMENTS AND TIME SCHEDULED FOR DELIVERABLES

5.1 Reporting requirements

The consultant shall operate under the guidance of the Senior Programme Officer (SPO) – Research & Statistics and direct supervision of Officer – Research and Statistics.

All the deliverables shall be delivered to the Officer – Research and Statistics, Technical Lead (TL).

All reports shall be in electronic format in MS Word, Excel, PowerPoint or STATA files as the case may be. The Expert shall work with the Secretariat up to the end of the assignment, shall have delivered the following in electronic format within two (2) months:

Name of report	Content	Time of submission
Inception Report	As per 3.4 – 1 above	No later than 7 calendar days after the signing of the contract.
Training report	As per 3.4 – 3 above	No later than 14 calendar days after the completion of the regional training workshop.

5.2 Submission and approval of report

Two copies of the reports referred to above must be submitted to the TL identified in the contract. The deliverables must be written in English. Each claim for payment should have the deliverable followed by a signed cover page with: title/reference of the

consultancy, date, deliverable description, amount claimed. The TL is responsible for reviewing the deliverables and seeking final approval by the Director - PPRM.

5.3 Project management

Overall responsibility for supervision of the Consultancy will lie with the Officer – Research and Statistics (TL). The Consultant shall be responsible for the operational day-to-day management and coordination of the consultancy work as agreed by the TL.

5.4 Management structure

The Consultant shall report to the Officer – Research and Statistics and perform the assigned tasks.

6. LOGISTICS AND START DATE

6.1 Location

The assignment will involve traveling to Mozambique.

6.2 Office accommodation

None required

6.3 Facilities to be provided by the contracting authority

For the expert working on this consultancy, the Contracting Authority shall facilitate for visa entry in the conference venue, if required.

6.4 Facilities to be provided by the contractor

The contractor must ensure he/she is adequately prepared and equipped for delivery of the training and drafting of deliverables. Moreover, the Consultant is expected to be fully self-sufficient in terms of international travel associated expenses in the conference venue, laptop and related device connectivity for projector for this consultancy.

6.5 Equipment

No equipment is to be purchased on behalf of the contracting authority / procuring entity as part of this service contract or transferred to the contracting authority / procuring entity at the end of this contract. Any equipment related to this contract that is to be acquired by the procuring entity must be purchased by means of a separate supply tender procedure.

6.6 Start date and period of implementation

The intended start date is as soon as both parties have signed the contract agreement and the period of implementation of the contract will be 60 calendar days from the date of signing the agreement. *Note: the 60 days is the duration of the assignment and not the number of days required to undertake it. It caters for coordination of work to be*

done by recipients of the assignment and to a certain extent, flexibility for the consultant to deliver on the outputs.

7. MONITORING AND EVALUATION

7.1 Definition of indicators

The indicators to be used are timeliness, technical coverage and analytical quality of the Report as detailed in the section 5 above. In addition, assessment of the effectiveness of the training to be done using pre and post-test surveys with recipients of the capacity building activity.

7.2 Special requirements

The Consultant must declare any potential conflict of interest between the provision of the requested services, and other activities in which, a member of their consortium of group (s), or any expert proposed in their offer is engaged.

8. ASSUMPTIONS AND RISKS

8.1 Assumptions underlying the project

The intended start date is as soon as both parties have signed the contract agreement and the period of implementation of the contract will be within 90 calendar days from the date of signing the agreement.

8.2 Risks

The nature of the assignment presents negligible risks associated with the consultancy. Some of the foreseen risks are the following:

Possible risks	Risk Level	Mitigation Measures
1. Unavailability of key stakeholders during the training session	Medium	Engage effectively with the National Statistics Office on coordinating the process

FINANCIAL PROPOSAL

9.1 Financial proposal

The financial proposal should include all consultancy fees and all costs .

9.2 Schedule of payment

Payments for the assignment shall be related to the reports and their approval as follows:

20% of the contract price shall be paid upon submission and approval of the Inception Report

80% of the contract price shall be paid upon submission and approval of the Training Report



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