

## **ILO Country Office for Nepal**

### **Terms of Reference (TOR)**

### **Database Administrator**

<b>Requirement</b>	National Consultant (Database Administrator)
<b>Assignment</b>	Technical Assistance to Social Security Fund on Database Administration
<b>Workstation</b>	Office of Social Security Fund, Babar Mahal
<b>Start date</b>	December 2020
<b>End date</b>	May 2021
<b>Total working days</b>	120 days

#### **1. Background & Context:**

Labour Market in Nepal has seen a perennial demand supply gap with domestic formal employment inadequate to provide jobs for the approximate and long-stated figure of over 400,000 new workers entering the job market each year. The gap has so far been filled by migration, with over 4 million Nepalese having legally migrated abroad within the last two years, or by the informal economy.

The Government of Nepal in line with the Constitution of Nepal (2015) has moved to pass or amend a host of new laws. There have been two key initiatives among recent laws and programmes of the Government of Nepal which have been targeted at creating a social safety net for workers in Nepal – Prime Ministers Employment Programme (under Right to Employment Act 2019) and Social Security Fund (under Social Security Act 2017).

The framework for the Social Security Fund (SSF) was first established in the Budget Speech of 2071/72 (2014-15) by enacting “the Unified Social Security Act for the effective implementation of social security programme”. During this period several studies were carried out to develop a comprehensive social security policy and framework for Nepal in accordance with the ILO Social Security (Minimum Standards) Convention, 1952 (No. 102). A combined effort of tripartite stakeholders with technical support of the ILO Country Office for Nepal led to the passing of the Social Security Act and Regulations (2017 & 2018) which completed the legal process to create the SSF.

The SSF has currently under consideration the following nine social security schemes: medical care, sickness benefit, unemployment benefit, old-age benefit, employment injury benefit, family benefit, maternity benefit, invalidity benefit and survivors' benefit. It has been agreed that these nine branches of social security will be introduced in a phased manner starting with the schemes providing maternity benefit, medical care, sickness benefit, employment injury benefit and old age retirement scheme. Design and delivery of a comprehensive social security as envisioned in the Social Security Act and represented by the Social Security Fund will mark a significant achievement in Nepal's progress towards promoting decent work and advancing social justice in Nepal.

The possibilities embodied by SSF are immense but so were the challenges. ILO Skills for Employment Project (ILO SEP) provided support to SSF under its industrial relations component which saw the successful implementation of the tripartite Social Security Act (2017) as a basis for sound labour relations and domestic employment creation in Nepal. ILO SEP together with SSF conducted a complete technical review of fund operations in 2019. The review outlined critical constraints in scheme design, mechanisms, human resources, and administration. Weak administrative capacity, namely lack of adequate manpower to cater to even the then number of enterprises and workers registering within the fund was seen as a key issue. The SSF staff then were neither permanent nor expected to stay for long in that position which meant that any individual capacity building initiative would not be sustainable.

SSF took proactive immediate steps to resolve issues. A new Executive Director in 2019 and other changes paved the way for hiring of over 60 permanent staff spread across the 4 main departments in their central office. A series of meetings between SSF, GiZ and ILO SEP helped develop a joint plan for technical support in November 2019, under which ILO SEP provided training and other administrative capacity building support to SSF till July 2020. Part of the technical support included an update of technical review done in 2019. This update incorporated new changes and support provided under ILO SEP, GiZ, and SSF joint plan, and outlined areas where continued technical support to SSF would be necessary in the coming months.

ILO Country Office for Nepal at the time started implementation on a new project entitled, *'Enhancing Social Protection System: Towards Investments for Results in Nepal in Nepal'* (EC-DEVCO) as part of the European Union's global Action on improving synergies between social protection and public finance management. The objective of the project is to support the Government of Nepal (GoN) in improving social protection policies; financing strategies; coordination mechanism; and implementation and monitoring systems in order to increase coverage to the excluded, including persons with disabilities (PWD), informal sector workers and people living in disaster prone areas.

A meeting of SSF, ILO SEP, and ILO EC-DEVCO projects was held in September 2020 to discuss how ILO can continue supporting capacity needs of SSF going forward. Follow up meetings with SSF, especially department heads under IT and Scheme Implementation and Promotion Unit department helped to unpack urgent capacity needs. Based on these meetings, ILO SEP and ILO EC-DEVCO worked to develop a joint plan for immediate technical support.

Under the joint plan, an immediate area for support to the SSF IT team was confirmed in conversations with the Executive Director and the SSF IT team who requested for technical support to cover the human resource until a more permanent hire can be made. The request for enhancing SSF's IT capacity and enabling capacity building and knowledge transfer is also aligned with the overall objectives of the ILO EC-DEVCO and as such a Terms of Reference for a Database Administrator was developed as per SSF standards to be supported under the ILO EC-DEVCO project. The consultant will work within the IMD division of SSF, under the supervision and direction of Director.

## **2. Objective & Tasks:**

The consultant will provide strategic direction to and oversight of all aspects of database administration for the SSF while ensuring transparency, accountability and effective use of resources in the outworking of SSF's Vision and Mission. Specific tasks related to this objective are as follows:

- I. Software Installation, Upgradation, Maintenance**
  - a. Install, configure and maintain database servers;
  - b. Set and maintain database standards;
  - c. Upgrade, and manage database system and applications;
  - d. Map out the conceptual design for a planned database;
  - e. Consider both back-end organisation of data and front-end accessibility for end-users;
  - f. Commission new applications and customise existing applications in order to make them fit for purpose.
  
- II. Data Extraction, Transformation, and Loading:**
  - a. Plan and coordinate data migrations;
  - b. Extract and/or load data;
  - c. Create and manage database reports, visualizations, and dashboards;
  - d. Create automation for repeating database tasks.
  - e. Preserve data integrity.
  
- III. Specialized Data Handling/Review of current database architecture**
  - a. Review current database architecture, design and suggest alternatives. Work closely with SSF staff on architectures, coding standards, and quality assurance policies.

- b. Write database documentation, including data standards, procedures and definitions for the data dictionary (metadata);
- c. Plan and ensure compliance with established best practices, related policies and legislation;

**IV. Database Backup and Recovery**

- a. Design and implement redundant systems, policies, and procedures for disaster recovery;
- b. Monitor, optimize and allocate physical data storage for database systems; and,
- c. Develop, manage and test back-up and disaster recovery plans.

**V. Security and authentication**

- a. Develop processes for optimizing database security;
- b. Manage security of a database;
- c. Communicate regularly with technical, applications and operational staff to ensure database integrity, consistency and security;
- d. Setting up cybersecurity measures;
- e. Perform database transaction audit and security audits;
- f. Ensuring regular updates of software/database
- g. Implement database encryption and data encryption;
- h. Develop, implement, and maintain change control and testing processes;
- i. Establish end-user database access control levels and privileges and monitor regularly;

**VI. Capacity Planning**

- a. Carry out capacity planning for data storage and data access performance;
- b. Further refining the physical design to meet system storage requirements; and,
- c. Recommend and implement emerging database technologies.

**VII. Database Monitoring**

- a. Respond to and resolve database access, performance and bottleneck issues;
- b. Monitor database system details, performance for better responses to users
- c. Provide reporting on various metrics including availability, usage and performance;
- d. Ensure that storage and archiving procedures are functioning correctly;
- e. Diagnose and troubleshoot database errors.

**VIII. Database Tuning/Optimization**

- a. Refine the logical design so that it can be translated into a specific data model;
- b. Performance testing and benchmark activities;
- c. Performance tuning of database systems; and,

**IX. Capacity Building and Knowledge Transfer**

- a. Provide training, and knowledge sharing to SSF staffs in all above mentioned activities.

### 3. Deliverables

- a) Technical report on software installation and maintenance;
- b) Technical report on review of current database architecture and specialized data handling including, but not limited to, database documentation (data standard, procedures, and definitions for the data dictionary);
- c) Capacity building and knowledge transfer plan to be shared with the SSF and the ILO team for technical inputs and feedback;
- d) Technical report on database backup and recovery;
- e) Report on activities undertaken for data extraction, transformation, and loading;
- f) Report on processes developed for database security including setting up cybersecurity measures;
- g) Report on authentication activities, database tuning, and troubleshooting;
- h) Report on capacity planning and performance monitoring; and,
- i) Training provided to SSF IT team based on the capacity building and knowledge transfer plan developed as per 3 d).

### 4. Payment Schedule:

Payment will be made in two instalments upon submission of agreed deliverables to the satisfaction of the ILO and SSF

**First instalment:** 50% will be paid upon delivery of 3 a), b), c) & d)

**Final instalment:** 50% will be made at the end of the contract, upon submission of all remaining deliverables to the satisfaction of SSF and ILO Country Office for Nepal.

### 5. Tentative Timeline

SN	Key Activities	Working days
1.	Software installation and maintenance	10
2.	Data extraction, transformation, and loading	15
3.	Specialised data handling/Review	15
4.	Database backup and recovery	15
5.	Security and authentication	15
6.	Capacity planning	10
7.	Database monitoring and troubleshooting	15
8.	Database tuning	10
9.	Capacity building and knowledge transfer	15
<b>Total working days</b>		<b>120</b>

## **6. Qualification & Experience Required**

Consultant must be undergraduate degree in computer engineering /electronics engineering/software engineering/IT or equivalent with a minimum of seven years-experience in related field. Previous experience in working with a government institution or development partners will be added advantage. Preference will be given to candidates having Oracle certification.

## **7. Submission**

Qualified and experienced national experts are requested to submit your application (expression of interest) along with updated CV with evidences of similar type of work experiences and expected daily rate of consultancy to [kathmandu@ilo.org](mailto:kathmandu@ilo.org) no later than 17:30hrs, Friday, 30 October 2020. Please indicate “Consultancy on TA to the SSF on Database Administration” in your email subject line.