

Terms of Reference

I. General information

<i>Mission title</i>	Provision of GIS and Remote Sensing training service
<i>Beneficiaries</i>	University Professors from Water and Agriculture Departments
<i>Country</i>	Libya
<i>Total duration of the mission</i>	A maximum of 20 days – during up to 4 months

II. Context and mission objectives

Since the 2011 uprising that overturned the former regime, Libya has faced several significant challenges, including limited opportunities for reintegrating youth into the labour market, a high unemployment rate, a weak private sector, and freezing all national development projects due to the country's precarious security situation. Despite this, Libya remains an oil-rich country with a population of 6.9 million and with a GNI per capita of 8,430 in 2021. It is expected that the population in Libya will reach 8.4 million in 2030. It's projected that during that time, the working-age population in Libya (14-55) will increase from 4,142,000 in 2006 to 6,512,000 in 2030, which is expected to pave the way towards economic development in the upcoming years.

One of the core challenges inherited from Gaddafi's era is heavy reliance on employability within the public sector and the government itself. The public sector continues to be the largest employer in Libya, whereas globally, the private sector provides 9 out of 10 jobs. The public wage bill is almost 63% of Libyan GDP. According to the International Organization for Migration, about 70% of Libya's active labour force works in the public sector. Consequently, the Central Bank of Libya reported that the public sector salaries are 49.7% of the government expenditures, totaling 60 billion LYD. This imbalance is primarily because public sector employees usually have better benefits than private sector employees. Most public sector workers are covered by some form of social insurance, whereas only 46% of private sector workers have such coverage. Moreover, public sector employees also benefit from better job security, while private sector companies are more likely to offer informal contracts or no contracts at all.

Libya is also heavily reliant on oil and gas production, which serves as a primary source of national income. However, this sector offers limited employability opportunities, with only 2% of the workforce employed in the oil and gas sector. This, coupled with long queues for public sector jobs, contributes to high levels of unemployment among young people in the country. Additionally, the private sector struggles to find skilled and experienced employees due to poor educational outcomes and the disconnect between the educational institutions and labour market.

According to the 2021 Ministry of Education statistics report, there are approximately 2.3 million students in primary and secondary education, 500,000 students in higher education and about 80,000 students in Technical and Vocational Education and Training (TVET) education. The International Organization for Migration (IOM) 2021 report states that Libya will need to create between 510,000 and 1.4 million jobs in the next 30 years to keep employment rates constant.

The EU4Skills project seeks to address the critical challenges of unemployment in Libya, recognizing the critical need for comprehensive solutions in the field of employability. In 2020, Libya's

unemployment rate was 19,6% predominantly affecting women and youth. The Libyans face multiple barriers to accessing quality employment opportunities, necessitating a strategic and transversal approach. Despite Libya's heavy reliance on Oil and Gas Production as its primary source of national income, this sector employs only 2% of the workforce, highlighting a stark mismatch in job opportunities. In terms of Higher Education, Libya's performance is the highest among neighboring countries, with a ratio of 60.5% for both genders. However, the quality performance remains poor, ranking 102 out of 144 countries and labour market efficiency 133rd out of 144.

Despite Libya's high literacy levels and enrolment figures, the education system falls short in equipping with the necessary competencies to propel the economy forward. Employers in the private sector face significant challenges finding skilled and motivated Libyan graduates. Libyan businesspeople often point skills mismatch between competencies needed on the job market and the skills presented by Libyan workforce. High unemployment rate of graduates reflects this mismatch between the education system and labour market. This can be attributed to the lack of a robust communication mechanism between the labour market and educational institutions. Additionally, students have no access to career counseling services at Educational Institutions and rarely participate in internships during their study, leaving them ill-prepared to understand the expectations for the labour market and job search process upon graduation. This ultimately results in misalignment between the educational system's supply and the labour market demand.

Discussions with various government bodies, including the Ministry of Higher Education, the Ministry of Economy and Trade, the Ministry of Technical Education and Vocational Training, the Ministry of Local Government, the Ministry of Labour, the Ministry of Finance, the Ministry of Planning, the Central Bank, and private sector unions, revealed the systemic gaps in the Libyan government policy related to enhancing youth employment. These challenges included the absence of a cohesive national policy and strategic alignment between higher education, vocational and technical training, and employment exacerbated by the current political fragmentation. There is also a pressing need for the government to advance reforms in higher education, technical education and vocational training sectors, including increased investment in improving the quality of education, improving curricula, teaching methods and field training.

The European Union funds this 42-month project to the tune of €7M and entrusts Expertise France with its implementation. EU4SKILLS aims to complement, support, and deepen the work carried out by the E-NABLE project.

EU4SKILLS consists of four main components which are closely linked in terms of the objectives and activities they seek to achieve, they mainly focus on: **Enhancing employability governance within the Libyan educational system (C1), supporting employability and business opportunities through digital transformation (C2), reinforcing skills and employability in green and blue economies for both public and private sectors (C3) and strengthening the financial sector capacities to improve SME financial inclusion and employability at an institutional level (4).**

The water and agriculture sectors are regarded as key pillars of Libya's sustainable development and economic diversification strategy. Both sectors face increasing challenges related to water scarcity, climate variability, land degradation, inefficient resource management, and the growing need for evidence-based planning and decision-making. Addressing these challenges requires access to reliable spatial data as well as the development of technical capacities capable of collecting, managing, analyzing, and visualizing geographic information.

Geographic Information Systems (GIS) have become essential tools for supporting water resource management, agricultural planning, environmental monitoring, land use assessment, and academic research. GIS technologies enable institutions and professionals to strengthen data-driven decision-making, improve resource allocation, and develop sustainable solutions to sectorial challenges.

As part of Component 3 of the EU4SKILLS project, which focuses on reinforcing skills and employability in green and blue economy sectors, Expertise France seeks to strengthen the capacities of university professors working in water and agriculture departments through a specialised QGIS training programme. The assignment aims to enhance participants' technical competencies in spatial data management, analysis, and visualization, while promoting the integration of GIS applications into teaching, research, and practical problem-solving. Ultimately, the training will contribute to strengthening higher education capacities and supporting sustainable natural resource management in Libya.

• **Mission objective:**

This mission is part of Component 3 of the EU4SKILLS project, specifically under the activities aimed at strengthening skills and employability in the green economy sectors. Geographic Information Systems (GIS) and Remote Sensing have become essential tools for supporting water resource management, agricultural planning, environmental monitoring, and evidence-based decision-making.

In this regard, Expertise France wishes to hire a local individual expert to provide a QGIS and Remote Sensing training programme to 12 university professors working in water and agriculture departments. The Contractor will be required to deliver a two-level training programme in Tripoli, consisting of a 5-day introductory training (Level 1) and an advanced training (Level 2) for up to 10 days.

At a minimum, the training should enable participants to:

- Understand GIS concepts, components, and spatial data models;
- Work confidently within the QGIS environment;
- Create, edit, and manage spatial datasets and geodatabases;
- Perform spatial analysis and basic modelling techniques;
- Produce professional maps and layouts for analysis and reporting purposes;
- Apply GIS tools and methodologies to real-world case studies related to water resources management, agriculture, environmental monitoring, and land-use planning;
- Understand the fundamental concepts of Remote Sensing and its integration with GIS;
- Identify different satellite platforms, sensor types, and earth observation data sources;
- Interpret satellite image characteristics, including spatial, spectral, radiometric, and temporal resolutions;
- Load, display, and enhance satellite imagery using GIS software;
- Perform basic image interpretation, band combinations, and image visualization techniques.
- Integrate GIS and Remote Sensing tools into academic teaching, research activities, and evidence-based decision-making processes.

The trainer(s) will lead participants in developing a practical GIS project integrating spatial data management, analysis, and map production. The details of the practical exercise will be agreed upon with the participants at the beginning of the training programme. It's expected that this training program will produce/contribute to:

- Skilled GIS users capable of operating ArcGIS Pro
- Improved institutional GIS capacity
- Better spatial decision-making
- Foundation for advanced GIS and Remote Sensing training
- Confidently work with satellite imagery in a GIS environment
- Select appropriate band combinations for different applications
- Perform basic image enhancement and interpretation
- Understand how Remote Sensing supports mapping and spatial analysis

The trainer should adopt a train-the-trainer approach, ensuring that participants are not only able to understand and apply QGIS concepts and tools, but also equipped to transfer this knowledge effectively to their own classrooms. The training should include guidance on adapting the acquired materials to existing teaching curricula, developing practical exercises, and integrating QGIS applications into relevant academic courses. The ultimate objective is to support professors in becoming multipliers of knowledge, enabling students—the final beneficiaries—to gain practical QGIS skills and maximize the benefits of this capacity-building initiative.

III. **Deliverables and reporting**

In accordance with the mission objective, the expert will be responsible for delivering:

- A 5-day in-person QGIS and Remote Sensing training program (Level 1) for 12 university professors in Tripoli.
- A 10-day in-person QGIS and Remote Sensing training program (Level 2) for the same group of participants in Tripoli.
- Training materials covering all the topics mentioned herein, including presentations, practical exercises, datasets, satellite imagery, and supporting documentation.
- The trainer must send the PC requirement for working with QGIS at least 3 weeks before the start of the training.
- The trainer will be responsible for guiding the participants to download/install the software on the first day of the training.
- A detailed training agenda and methodology for both training phases.
- A set of pre- and post-training assessment questions to evaluate participants' knowledge acquisition for each phase.
- Practical exercises and a final GIS project to be developed by participants during the training.
- A final narrative report in English, including a summary of the training activities, participants' performance, pre- and post-training assessment results, key achievements, challenges encountered, and recommendations for future capacity-building activities.

Deliverable	Date of Delivery
1. Pre/post-test questions	At least 10 days before the start of each training phase
2. Training agenda (detailed)	At least 1 week before the start of each training phase.
3. Training material	At the start of the training day
3. Level 1 training (5 days)	Starting from 19 July 2026
4. Level 2 training (10 days)	Dates to be confirmed
5. Final narrative report	Maximum 10 days after completion of the training programme

IV. Profile of experts

Qualifications

- Advanced university degree in GIS, Geography, Geometrics, Environmental Sciences, Engineering, Agriculture, Water Resources, or related disciplines.

Professional Experience

- At least 10 years of professional experience in GIS and spatial analysis.
- Proven experience in delivering QGIS training programmes.
- Experience working with water, agriculture, environmental, or natural resource management projects.
- Experience in designing practical GIS exercises and training materials.
- Previous experience working in, or providing trainings for, higher academic institutions.

Skills

- Excellent communication and facilitation skills.
- Excellent written and oral communication skills in Arabic; a good command of English is a plus.
- Strong report-writing skills.
- Previous experience in donor-funded or international cooperation projects is considered an advantage.

V. Place, Duration and Methods of Execution

1) This mission must be completely fulfilled in 20 non-consecutive days, divided as follows:

- Preparation: 4 days
- Phase 1: 5 days
- Phase 2: up to 10 days
- Reporting: 1 day

2) Implementation period :

Start date : 15/07/2026

End date : 15/11/2026

3) Location: *The mission will be delivered entirely in Tripoli, Libya. All trainings must be delivered in person.*

VI. Mission report

A final report must be submitted by email at the end of the mission (no later than 10 days after the end of the training).

The document must be written in English and should explain the content of the training delivered, details the activities, the progress of the participants, difficulties encountered and recommendations, etc.