



Food and Agriculture
Organization of the
United Nations

5th Meeting of the Near East and North African Laboratory Network (NENALAB)

26 February 2025

Lebanon SOIL LABORATORY

Challenges, Opportunities, and
the Path Forward

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Current Status of Soil Laboratories in Lebanon

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Key Institutions Involved in Soil Analysis

- **Lebanese Agricultural Research Institute (LARI)** : Focal Point Lab and main government lab under the Ministry of Agriculture.
- **Universities labs**: Specialized in Environmental Engineering, Soil Mechanics, Geotechnical and soil research facilities.

Laboratory Capabilities:

- Focus on soil fertility, contamination, erosion, and land use.
- Limited advanced equipment for precision soil analysis.

Key Challenges Faced by Lebanese Soil Laboratories

➤ **Outdated Infrastructure & Equipment**

- Majority of labs lack modern instruments for detailed soil assessments.

➤ **Weak Quality Control & Standardization**

- No harmonized protocols across different laboratories.
- Limited participation in international proficiency tests.

➤ **Limited Funding & Government Support**

- Insufficient investment in research and lab development.

➤ **Lack of Health & Safety Protocols**

- Poor ventilation and waste management in most of the labs.

➤ **Training & Capacity Gaps**

- Irregular staff training in modern techniques and quality assurance.

Recommendations for Strengthening Soil Laboratories

➤ Infrastructure & Equipment Investment

- Upgrade lab facilities and instruments.

➤ Quality Management & Standardization

- Implement international soil testing protocols.

➤ Health & Safety Enhancements

- Introduce better ventilation and waste disposal systems.

➤ Capacity Building & Training

- Regular workshops and technical training for lab staff.

➤ Develop a National Soil Laboratory Network in partnership with international organizations (NENALAB)

- Create a collaborative database for soil analysis results.

Conclusion & Next Steps

- Lebanese soil laboratories are essential for agricultural and environmental sustainability.
- However, challenges such as outdated equipment, weak quality control, and limited funding hinder their effectiveness.
- A structured National Soil Laboratory Network could improve collaboration, standardization, and overall lab performance.
- Future efforts should focus on investment, training, and policy support to enhance soil testing capabilities in Lebanon.
- A structured National Soil Laboratory Network could improve collaboration, standardization, and overall lab performance.



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Thank you

