



Co-funded by
the European Union



TECG REMED CB VET PROJECT •

Green Engineering Skills & Sustainable Jobs Framework

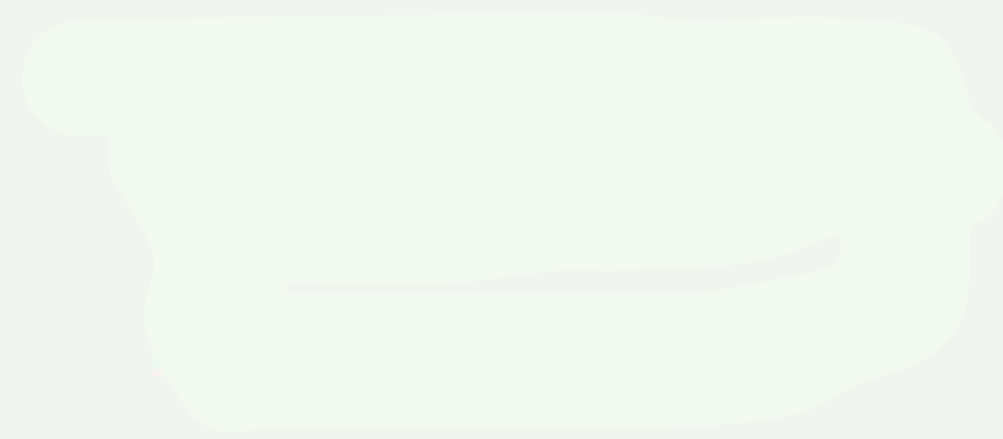
A Comprehensive Strategy for Jordan and the MENA Labor Transition Corridor

Fez , Morocco

Jun 12, 2026

Author: Dr. Ashraf Shaqadan, Zarqa University

"Fostering the Employability of Youth and Students: Leadership Models for University-Labor Market Synergy in Green Engineering"



The Macroeconomic Baseline & Structural Labor Market Profile

National Labor Market Benchmarks (Q1 2026)

16.1%

General Unemployment

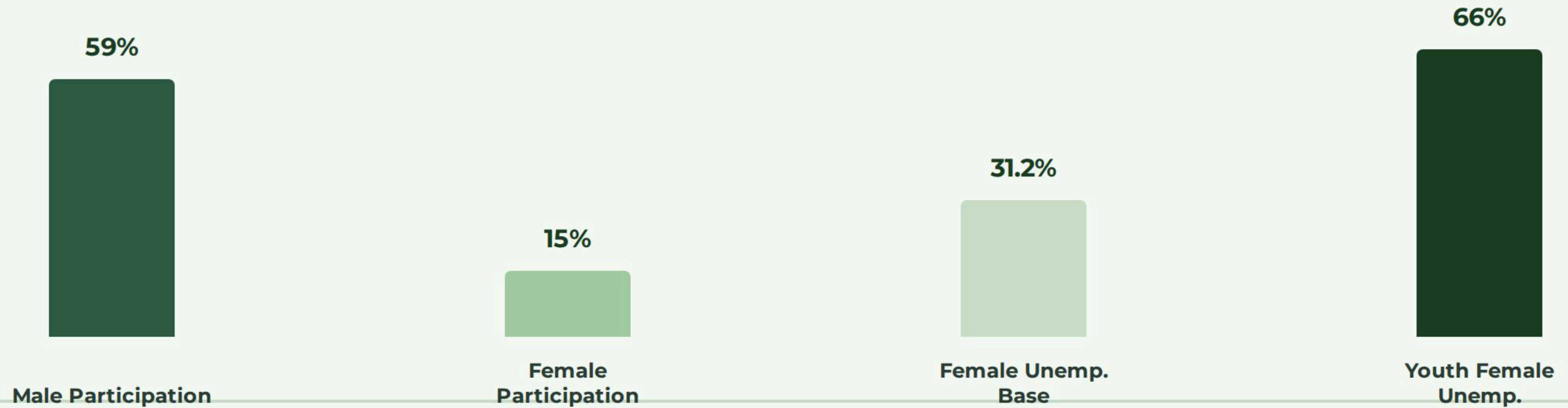
Recent Department of Statistics (DOS) quarterly releases track a stabilization down from post-pandemic peaks near 21.3%.

27%

Long-Term Disengagement

Jordanians currently recorded as completely detached from active employment for a duration exceeding five consecutive years.

Deep Demographic Divergence & Gender Segmentation



Stagnant 15% female labor participation represents the single largest underutilized engineering asset pool.



Priority Green Growth Frameworks & Industrial Sectors

Economic Modernization Vision (EMV) 2033

STRATEGIC TARGET

10% Green Quota by 2030

Jordan's formal long-term goal dictates that a minimum of 10% of total national employment must be comprised of validated green jobs.

REGIONAL MARKET CONTEXT



\$30B MENA Hydrogen Corridor

Regional green hydrogen and derivative export markets are projected to reach \$30 billion annually by 2035, positioning the Levant as a transit node.

Water Scarcity & Circularity Loops

WWTP Biogas Integration

As the world's second most water-scarce nation, Jordan is retrofitting Wastewater Treatment Plants (WWTPs) into localized closed-loop systems.

-  **80% Energy Generation:** Onsite anaerobic sludge digestion.
-  **Industrial Substitution:** Replacing fresh water demands with treated industrial-grade effluent.



Energy Strategy: Grid Stability Orchestration

30% Renewable Target by 2030

Scaling solar and wind power blocks to meet 30% of domestic demand necessitates localized grid control technical staffing.

- ☑️ Utility-scale battery energy storage system deployment.
- 🔥 418M cu.ft/day Risha gas field target as a domestic baseload balance.





The Skills Gap Challenge & Structural Systemic Bottlenecks

The Fundamental Green Skills Deficit



Diagnostics Deficit

Industrial demand has shifted away from basic components toward Balance-of-System (BoS), SCADA telemetry, and automated diagnostic controls.



E-Mobility Shortage

Critical lack of technical vocational workers trained in high-voltage infrastructure safety and lithium battery life-cycle remediation.



Carbon Accounting

Absence of specialized labor familiar with carbon ledger reporting systems, Scope emissions calculation, and Article 6 protocols.

Socio-Cultural Bottlenecks Constraining Supply

"Culture of Shame" (Thaqafat al-Ayb)

Social pressure routinely diverts high-performing youth away from engineering vocational paths and field placements into oversaturated traditional public desk jobs.

Institutional Fragmentation

Misalignments between market signals (Ministry of Labor) and curriculum design (Ministry of Higher Education) limit prompt National Qualifications Framework revisions.

MENA E-Mobility Ripple: Region-wide EV integration is tracking at 25% CAGR (2026–2035), leaving regional infrastructure without certified service engineers.



**Institutional, Strategic &
Legal Policy Actions**

Jordan: National Legal Frameworks

ENVIRONMENT PROTECTION LAW NO. 6

Mandated Environmental Officers

Recent mandates under the Ministry of Environment require all key industrial installations and industrial free zones to retain certified Environmental Officers to enforce compliance standards.

GG-NAP FRAMEWORK

Green Growth National Action Plans

Legally binds state investment across six priority sectors (Water, Energy, Agriculture, Transport, Waste, Tourism) to explicitly align state funds with VET laboratory scaling.

MENA Regional Legislative Alignment



GCC Green Codes

Mandatory sustainable construction laws across the Gulf require technical inspectors certified in LEED and regional Mostadam metrics.



North Africa Energy Acts

Statutory hydrogen export frameworks in Morocco and Egypt provide corporate tax carve-outs for projects localized with certified domestic staff.



Unified Grid Accords

Cross-border multi-lateral synchronization standards are formalizing technical certification equivalency matrices across Levant corridors.





Governmental Initiatives & Empirical Field Models

The ARDI Program (Accelerating Rural Development)

\$125M WORLD BANK FUND

Targeting Rural Resilience



A flagship national policy designed to upgrade traditional smallholder practices into climate-smart sustainable asset systems.

-  **30,000 Households:** Direct technology-transfer beneficiaries.
-  **12,000 Placements:** Targeted jobs explicitly structured for women and rural youth.

TECHNICAL FOCUS

Decoupling Water Scarcity

The program integrates engineering solutions directly into localized cultivation to safeguard long-term water resources.

-  Hydroponic and high-efficiency localized drip systems.
-  Solar-powered pumping loops replacing diesel extraction.

Empirical Field Placements by Sector Focus

INITIATIVE CORE FOCUS	LEADING INSTITUTIONAL AUTHORITY	VERIFIED FIELD PLACEMENT METRIC
Renewable Energy Deployment	JREEEF / Ministry of Energy & Mineral Resources	3,500+ Direct Jobs in localized inverter and diagnostic deployment
Water Conservation & Effluent Loops	Water Authority of Jordan (WAJ)	1,200+ Active Placements in high-grade recycling systems
Urban Methane Energy Recovery	Greater Amman Municipality / Ministry of Environment	800+ Specialized Personnel in biogas harvesting loops
Climate-Smart Agro-Logistics	Ministry of Agriculture	12,000 Placements generated under the strategic ARDI framework



National TVET Governance & Labor Market Policy Mechanics

Ministry of Labor Strategic Policy Core



NEP Green Cap

The National Employment Program enforces a formal green job target, backing eligible private hires with a direct 50% state-funded wage subsidy.



SSCs Institutional Expansion

Expanding the legal roster from 13 to 21 active Sector Skills Councils operating under the TVSDC to grant companies authority over NQF standards.



60k Technical Placements

A binding target under the TVET strategy mandating that a minimum of 35% of all trainees be women, and 7% be drawn from marginalized groups.

Macroeconomic Modeling: GAIN vs. BAU (2030)

113,000

Active Policy Scenario (GAIN)

Total new employment units generated through comprehensive green integration modeled via *FRAMES-Jordan* with GIZ support.

5,500

Business-As-Usual (BAU) Path

Projected job growth tracking along historical legacy industrial profiles without targeted green curriculum integration.

Monetizing Carbon Abatement: Article 6 Funding

SOVEREIGN ASSET GENERATION

Article 6.2 ITMO Transfer Loops

The formal bilateral climate partnership between Jordan and Norway establishes a path to convert verified greenhouse gas reductions into liquid **Internationally Transferred Mitigation Outcomes (ITMOs)**, routing international capital directly back into local technical vocational facilities.

MUNICIPAL CAPITAL MARKETS

CVDB & Green Bond Vehicles

Securing direct operational accreditation with the Green Climate Fund (GCF) enables the Cities and Villages Development Bank (CVDB) to underwrite municipal green bonds for urban transit corridors and regional waste infrastructure networks.

The Strategic Green Transition Horizon (2025–2035)

2025-26



Establishment of Jordan/Norway Article 6.2 ITMO capital routes.

2027-28



60k placements completed; full NQF competency scaling.

2030



10% green job ratio attained across national workforce.

2033



Vision 2033 structural targets achieved.

2035+



Levant Green Hydrogen Hub export networks operational.

Compendium Strategic & Institutional References

- **Department of Statistics (DOS).** (2026). *Quarterly Labor Force Survey Matrix: Q1 2026 Institutional Statistical Release*. Hashemite Kingdom of Jordan.
- **Ministry of Labor (MOL).** (2026). *National Employment Program (NEP) Operational Directives and Wage Subsidy Framework for Sustainable Sectors*. Government of Jordan.
- **Ministry of Environment (MoEnv).** (2021). *Green Growth National Action Plans (GG-NAPs) 2021–2025 for Priority Sectors*. MoEnv / Global Green Growth Institute (GGGI).
- **Prime Ministry of Jordan.** (2022). *Economic Modernization Vision (EMV) 2033: Sustainable Growth Pillars*. Hashemite Kingdom of Jordan.
- **Technical and Vocational Skills Development Commission (TVSDC).** (2025). *Strategic Roadmap for Green Competency Integration & National Qualifications Framework Revisions*. Ministry of Labor.
- **GIZ Jordan.** (2023). *Green Jobs Assessment: GAIN Macroeconomic Modeling and FRAMES-Jordan Analytical Results*. GIZ Amman Office.
- **UNFCCC.** (2025). *Bilateral Registries, Transaction Protocols, and ITMOs Under Article 6.2: The Jordan-Norway Climate Partnership Case Study*. UNFCCC Secretariat Bonn.
- **Shaqadan, A.** (2025). *Green Engineering Skills and Capacity Assessment across Technical Vocational Streams in Jordan*. TECGREMED WP2 Deliverable Compendium. Zarqa University.

Questions & Discussion

Building a Resilient, Climate-Agnostic Engineering Economy

TECGREMED Capacity Building VET Consortium Project

Zarqa University . Hashemite Kingdom of Jordan

Image Sources



<https://civis.eu/storage/files/en-co-fundedvertical-rgb-pos-1600x1600-resize.png?token=936f6873c38428ab1213391ba26f33c8>

Source: civis.eu



https://static.wixstatic.com/media/b48f1b_c00cf94bfc9415ab901d63e4a309525~mv2.jpg/v1/fill/w_280,h_363,al_c,q_80,usm_0.66_1.00_0.01,enc_avif,quality_auto/b48f1b_c00cf94bfc9415ab901d63e4a309525~mv2.jpg

Source: www.tecgremed.com



<https://edu-syria.eu/wp-content/uploads/2023/06/ZU-LOGO-1-e1695279171205.png>

Source: edu-syria.eu



<https://www.cambi.com/hs-fs/hubfs/Blog/2025%20Blog%20Posts/Biogas%20Wastewater/biogas-balloon-wastewater-treatment.jpeg?length=1085&name=biogas-balloon-wastewater-treatment.jpeg>

Source: www.cambi.com



https://www.kfw.de/stories/kfw/bilder/gesellschaft/zusammenhalt/jordanien-zaatari-solaranlage/jordanien-zaatari-solarkraftwerk-luftaufnahme_rs_stage_small.jpg

Source: www.kfw.de