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مكتب الارتباط الاقتصادي للتجارة و الصناعة في العراق
نوسینگه اقتصادی بهرمنهنگاری بازرگانی و بهنهمساری
آلمانی ال عراق

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The Impact of Water Scarcity in Iraq and The Importance of Sustainable Water Management

German Liaison Office for Commerce and Industry in Iraq
December 1, 2025

Warning Facts in Iraq

Iraq is facing one of its most severe water crises in modern history, threatening livelihoods and children's well-being. Consecutive droughts, reduced rainfall, and upstream inflow cuts have pushed national water reserves below 4 BCM, the lowest in over 80 years.

Severe decline in water revenues

Extreme heat leading to rapid evaporation of water

Quality services (customers' mistrust) and urban/rural disparity

Old or outdated infrastructure for water and wastewater

Water pollution led to Health-related Impact

Cholera is endemic in Iraq and other water-borne diseases.

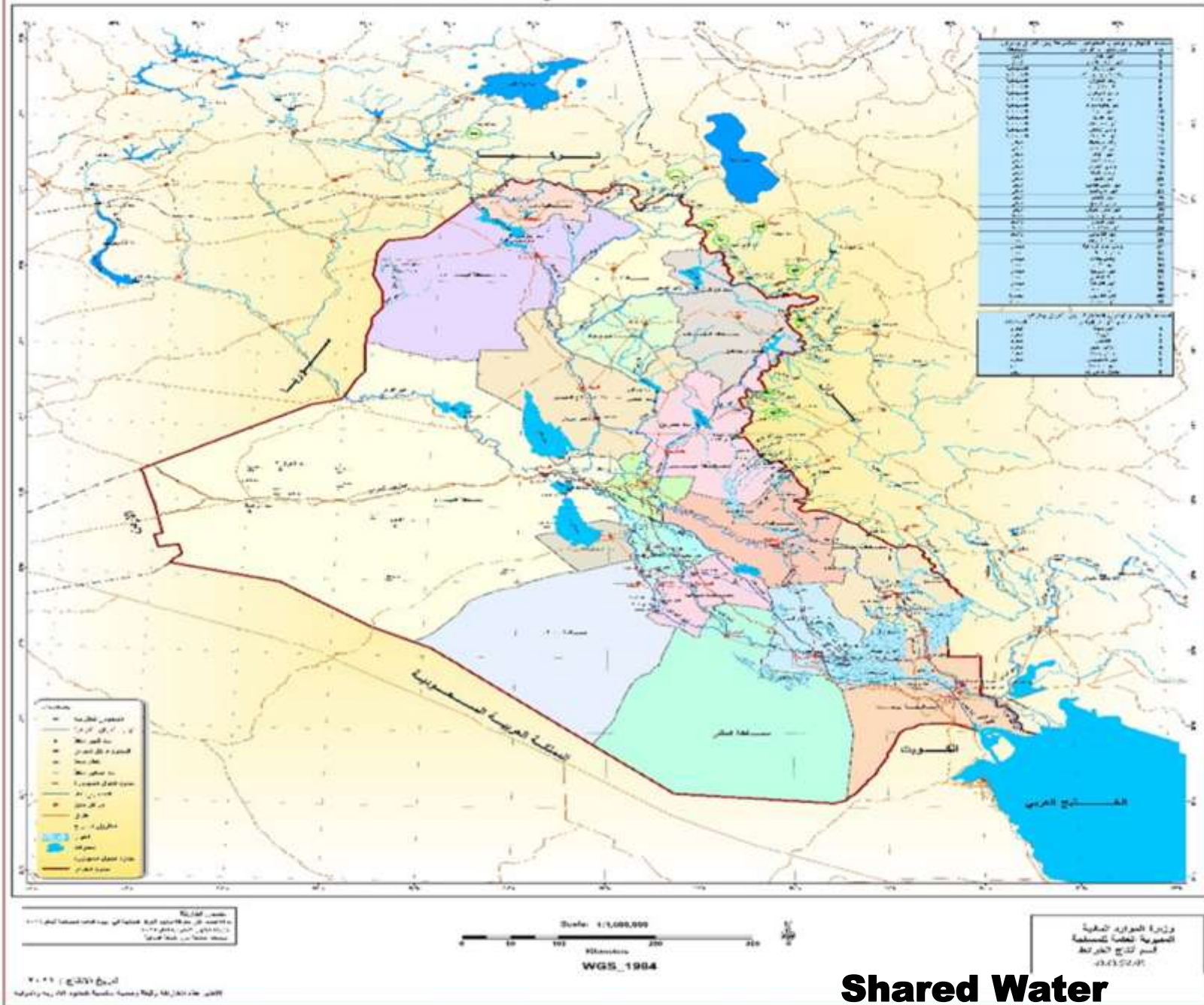


The impacts resulting from the decrease in water inflows

- 1- Low storage rate in dams and lakes
- 2- Decrease in agricultural areas
- 3- Desertification and dust storms
- 4- River pollution
- 5- Decrease in the rate of marsh flooding
- 6- High salt concentrations

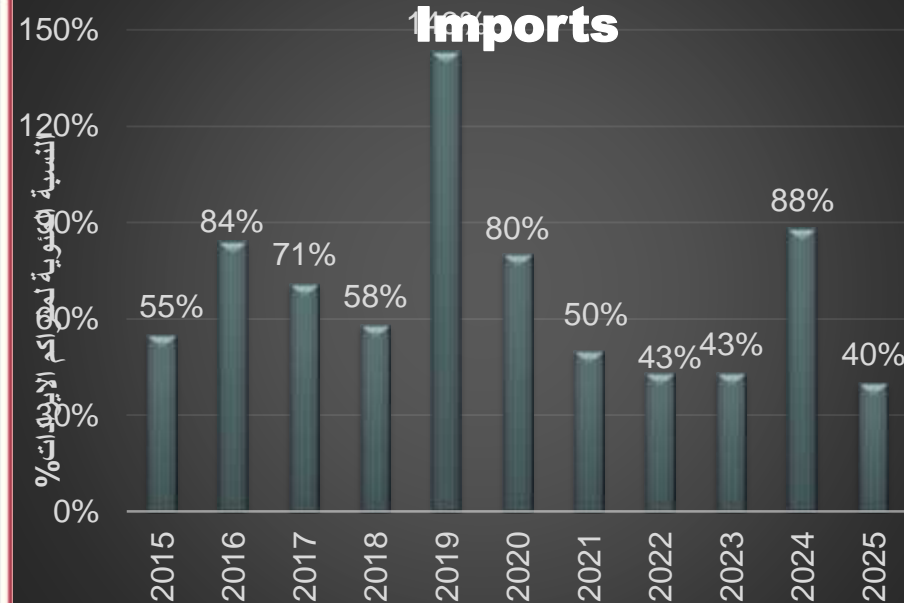


خارطة تبين الحدود الإدارية والتركية



Shared Water Basins

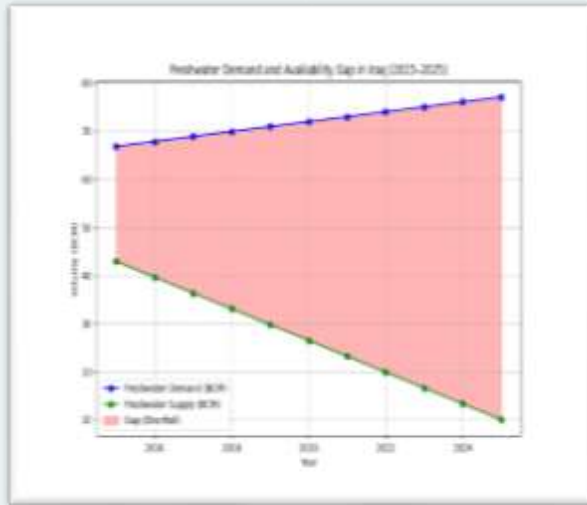
Lack of Water Imports



The percentage of realized inventory decrease to the total available inventory on 1/11, the beginning of the winter season.



WASH and Climate in Iraq - The Big Picture



Water Scarcity

Iraq's water reserves are at their lowest in **80 years**, its share of water from the Tigris and Euphrates has dropped to less than 40 per cent.

1 out of **3** Children in Iraq lack access to safely managed water

By 2060: **50%** of population may not have enough water

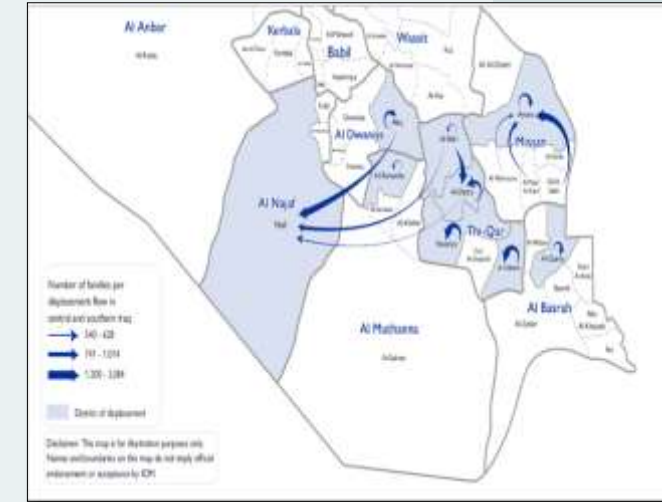


Water Pollution

50% of household water supplies are contaminated

3 out of **5** Children in Iraq lack access to safely managed sanitation.

Over **6 million** cubic meters of untreated sewage are dumped directly into the open environment and rivers daily



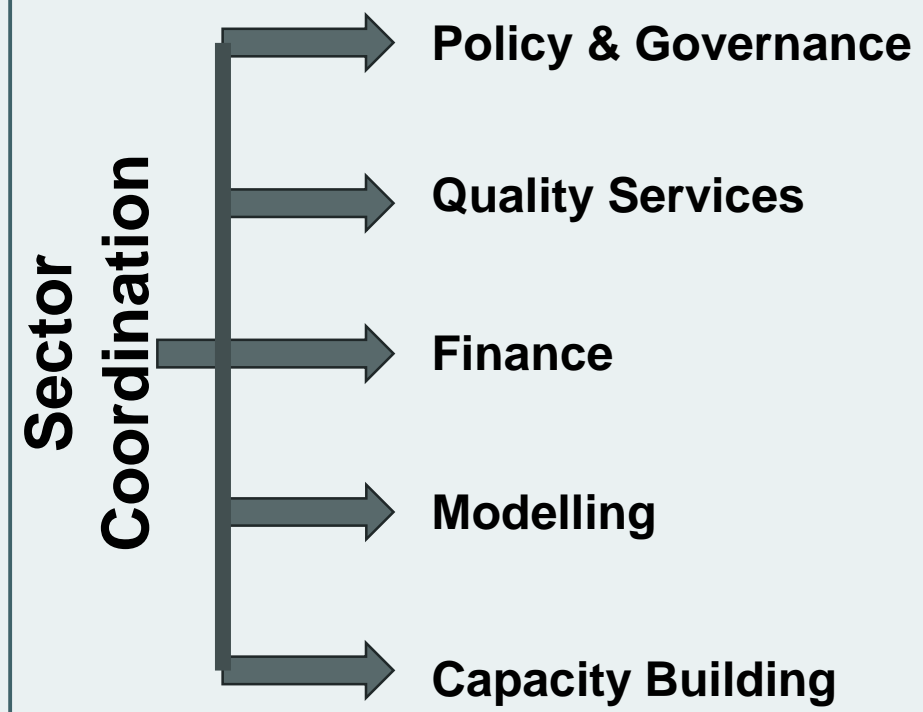
Climate impact

Iraq ranks as the **5th** most vulnerable country to water and food shortages and extreme temperatures

Around **30,000 families** remain displaced because of climatic factors across 12 governorates

By 2040: rainwater may reduce up to **20%** and By 2050: temperature may increase by **2-4°C**

UNICEF Programme System Strengthening



Establishment of a government-led Water Safety Plan at federal and KRI level



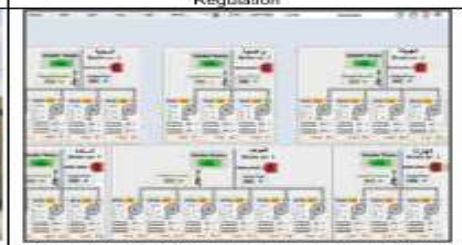
Enhanced governance, financing and accountability (WASH Bottleneck Analysis Tool and WASH Regulation)



UNICEF co-lead WASH sector in WASH Working Group at federal and KRI level



Wastewater treatment unit in General Health Central Lab in Baghdad



Automated water supply system to improve efficiency and consistent water distribution



Setup of a water filtration system within a water treatment plant to enhance water quality



Activation of Water Harvesting Pond, part of Duhok city DRR, Duhok



Establishment of water desalination unit aimed at providing clean and safe drinking water



Backwash Recycling innovation-Basra



Net Zero water to address challenges of water scarcity



Rainwater harvesting PONDs-Erbil



Green Energy via 2 Solar Systems in Kharab Baza main water facility-Dohuk

Sustainable Water Management: What Iraq Needs Now

Policy Vision for Solutions

- 1- Effective Water Diplomacy**
- 2- Strict National Legislation**
- 3- Decentralized Water
Management**

Sustainable Water Management: What Iraq Needs Now

Technical Vision for Solutions

- 1. Rehabilitation of Infrastructure**
- 2. Diversifying Water Sources**
- 3. Improved Treatment**
- 4. Smart Monitoring and Control**
- 5. Increasing Efficiency of Use**

Iraq – Nationally Determined Contribution (NDC 3.0)

Sectors: Water, Sanitation, and Solid Waste (2025–2035)

National Context and Climate Challenges:

- Declining water inflows from upstream countries are expected to create a **water deficit exceeding 30 billion m³ annually by 2035**.
- Renewable water availability per capita is **less than 700 m³/year** — below the water poverty threshold.
- Increasing drought frequency, desertification, water pollution, and deteriorating infrastructure.
- Over-extraction of both surface and groundwater due to population growth and urban expansion.

Strategic Vision (2035):

Smart, resilient, decentralized, and equitable systems ensuring the right of all to safe water, sanitation, and sound waste management, with a balanced integration of adaptation and mitigation measures:

- Strengthening Integrated Water Resources Management (IWRM) from source to end-use.
- Desalination using renewable energy in southern regions.
- Treatment and reuse of wastewater for agriculture and industry.
- Adoption of SCADA technologies to monitor networks and control water losses.
- Reducing waste burning and capturing methane from landfill sites.

Estimated Costs:

- Total required financing: USD 31.9 billion
 - Unconditional: USD 27.7 billion (domestic public and private funding).
 - Conditional (international support): USD 4.2 billion (Green Climate Fund, GEF, World Bank, etc.)

Alignment with National Frameworks

Iraq's Strategic Study for Water and Land Resources - National Development Plan
Climate Investment Plan - Biennial Transparency Report
Sustainable Development Goal 6 (Clean Water and Sanitation)

Quantitative Targets by 2035:

Non-Revenue Water (NRW)- Safe water coverage – Rural & Urban - Wastewater collection - Effective wastewater treatment - Reuse of treated wastewater - Solid waste recycled - Methane captured

Monitoring, Reporting, and Verification (MRV):

- Unified digital system to measure emissions and track environmental performance indicators.
- Data integration at the governorate–national, partner levels.
- Measurable indicators updated annually in collaboration with the Ministry of Environment, Ministry of Planning, line ministries, and local authorities

Implementing Partners:

- Line ministries (Water Resources, Municipalities, Environment, Planning).
- Governorates and local councils.
- Private sector and civil society.
- International partners (UNICEF, UNEP, UNDP, World Bank, GCF).

Opportunities for Collaboration with German and Iraqi Companies

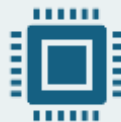
- Advanced water treatment technologies
- Solar and renewable solutions for water systems
- Smart water management (meters, leak detection, SCADA)
- Digital monitoring and quality testing
- Industrial wastewater solutions
- Capacity building and technical exchange



**Urban water
planning
services,**



**Integrated water
resource
planning
services,**



**Technology
(Electrical,
electronics,
control systems
including IOT
and SCADA
systems)**



**Water solutions
at governorate or
region level,**



**Small to medium
scale
infrastructure**



**Capacity building
including
research, data
generation, AI,
trainings.**

Thank you

Eng. Bassam Layth

**WASH Officer | Climate-Smart
Programming**

UNICEF | Iraq Country Office