

Transcend 3rd Webstival
27-29 April 2026

Financial Capacity Building for Transformative Adaptation

Orontes River Basin (Lebanon).

Overview of the Orontes river (Nahr Al Assi)



Orontes river (Nahr Al Assi)

Financial Capacity Building for Transformative Adaptation.

At Governmental Policy Level

Bilateral treaties between Lebanon & Syria at the Governmental Policy level and the financial capacity



Financial aspects of the river
are defined by international
agreement & significant
planned infrastructure
investments



Lebanon – Syrian Agreement
Water allocation & legal
framework

1994 Agreement: bilateral
treaty , river's water shared.
80 MCM / year , right to use
part of the upstream flow.

**1997 Amendment
Agreement.**
80 MCM / year (allow
Lebanon to build irrigation
and water projects (dams
and canals))

**2002 Amendment Treaty
Agreement**

Orontes river (Nahr Al Assi)
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At Governmental Policy Level



2002 , they reviewed the treaties of 94/97 and had Amendment Proposal of “Orontes Project Development Agreement”

The goal of Amendment is:

Increase Lebanon’s water share to 96 MCM / year & implementing others infrastructure activities.

The agreement's provisions 97-2002 were not accomplished. During the implementation of the Amendment proposal project, the sites were bombed during the 2006 war on Lebanon.

Orontes river (Nahr Al Assi)

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At Governmental Policy Level

Economic Impact:

***Agriculture & food safety –
1994/1997 vs 2002***

- Increase Lebanon's water share to 96 MCM / year & others infrastructure activities

Lebanese Ministry of Energy & Water (MOEW) has developed a multiple plan to increase exploitation of the river with 210 Million Dollars as cost

- phase 1 : construction a 27 MCM diversion dam (planned for direct use) near Zarqa spring , including three pumping stations and an irrigation network for 3000 hectares.

- phase 2 : construction a 37 MCM dam (planned for storage capacity) at upstream of Hermel bridge to irrigate additional 3800 hectares.

- Establish of a 50 MW hydroelectric power plant on the riverbank - Increased Government revenues from electrical power.

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Economic Impact:

***Agriculture & food safety –
1994/1997 vs 2002***

- Trout Farms will be increased or expanded (local Restaurants, fresh trout on the spot, or packed and transport to different markets) , fish farms depend on steady , clean river water.
- Livestock & Dairy: Development of feed production, cattle breeding, and dairy manufacturing in Hermel is another goal with 2002 proposal linked to Orontes resources. Dairy and cattle sectors also rely on irrigated feed crops from the Orontes.
- * Agricultural productivity from the basin river supports local livelihoods and contributes to national food security.

Main goal : Social development to encourage local people to remain in villages.

Orontes river (Nahr Al Assi)

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Amendment 2002 treaty
Agreement

New Amendment agreement:

Climate change, Technical solutions , River Water Management, Nature based solution

Orontes river (Nahr Al Assi)

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Economic Impact:

Agriculture & food safety.

Current Situation

- Irrigate around 2000-3000 hectares per year.
- Major crops: Potatoes , wheat , vegetables & fruit trees
- Hosting around 140-200 trout farms along the river with 2500-3000 tons annually , 120 families benefit from these farms.
- 30 Restaurants (trout fish fresh on spot).
- Packed trout fish to different markets and production of Trout Salmon.
- Livestock & feed : Development of feed production “ La Reine “ company for fish feed production , 10 tons/hour , fish farms or producers saved around 20 % on feed compared to imported one.

Orontes river (Nahr Al Assi)

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At Governmental Policy Level

Economic Impact:

Environmental & Touristic

Current Situation

- Acts as living ecosystem corridor in a relatively dry region, Supports biodiversity & sustains rural landscapes.
- Provides habitat for native fish & birds.
- Natural water cycle helps recharge ground water & local aquifers.
- Provides local business ecosystem , 140-200 trout farms are benefit from the river, 120 families are benefit from the trout farms with 10-12 tons per year per family with income 20.000 – 60.000 dollars per year / family depending the cost and market. With a total income 1.3-1.6 Million Dollars per year in Hermel areas.
- Many farmers are linked to restaurants serving fresh trout.

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Economic Impact:

Environmental & Touristic.

Current Situation

- Rafting : 3-5 compagnies, 50 days work in summer , 3.000 – 10.000 visitors with income 60.000 – 300.000 \$ per year.
- Serving 150 employees / 50 days.
- More than 30 restaurants are located in the riverside in Hermel (with view on water and trees).

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Economic Impact

Drought Year

2024-2025

Reduction of the rainfall in Hermel was around 60 %

The agricultural, food security and touristic sectors are impacted by the drought year, *the water level in the river was very low.*

The Orontes river faced several environmental pressures on water use, heavy use for irrigation & fish farms and the native fish and organisms are affected by low oxygen in water and the quality of water is changed

Flow rate : 0.5-1 CM/S.

Spring feeding the river had weakened & low river levels and flow slower. Usually, the rainfall in this area is 200 mm per year , the most stressed area in Lebanon , known by semi –arid areas, *the reduction in water flow in river was 30-50 MCM/year.*

Farmers and fish farms had less water to use and the reduction on yields was between 30-60% and farmers are relied on river faced higher cost and there was increased competition on water by using wells and groundwater were overused.

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Economic Impact

Drought Year

2024-2025

20-50 % was the reduction of trout fish production, also fish deaths were reported and river ecosystems weakened from low oxygen in water and ***water quality degradation.***

Overall local Hermel's economy depends on the Orontes for irrigation, fish farming, and livestock.

Hermel's economy is deeply tied to the Orontes river and depend on water level and quality.

Orontes river (Nahr Al Assi)

At Local level / Institutional level

Financial Capacity Building for Transformative Adaptation.

Assessment Study

Undertake a detailed characterization of the river and perform a comprehensive assessment or update the existing baseline study.

Technical Solutions

Develop integrated technical solutions for effective , optimize & sustainable river water management , flow regulation & Resource allocation.

Orontes river (Nahr Al Assi)

At Local level / Institutional level

Financial Capacity Building for Transformative Adaptation.

Water management/ safety

Restoring natural flood river acts as natural storage for floodwater, reduce risks from extreme weather.

Pollution Control

Using constructed wetlands & reintroduce native vegetation to strengthen riverbanks, filter pollutants naturally & provide flood regulation, groundwater recharge & enhanced biodiversity, Develop a driven DSS system

*Orontes river (Nahr Al Assi)
At Local level / Institutional level
Financial Capacity Building for Transformative Adaptation.*

Methodology , Mechanism & Strategic plan for financial capacity for transformative Adaptation.

**Strategic Action /Short – Long
Term/Timeline with Priority/
Competent Authority with
Estimated costs.**

Source Funding:

- **Government Funding is limited**
- International donors (EU, United Nations Agencies, World Bank).
- Blending Financing (Local community & International donors).

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Methodology , Mechanism & Strategic plan for financial capacity for transformative Adaptation.

**High Relief Commission:
Lebanese Governmental Body –
responsible for disaster relief (nature – war – explosion).**

**Gate program: Green Agri- Food
Transformation for Economic recovery, World
Bank , 200 M dollars.
30 M\$ are dedicated for water harvest.**

**Disaster Risk management
Unit: started in 2020,
documentation & data
monitoring.**

**Disaster Management Fund (MoA):
Responsible solely for covering natural disasters in the
agricultural sector.
Draft Law has been prepared but still requires review &
ratification by parliament and define the Execution
mechanism**

THANK YOU FOR YOUR ATTENTION