

Summary of the Lebanon dossier

Irrigation water, climate, fertilisers and crops. The essentials of the 29-page dossier.

Key figures

Figure	What it means
882 Mm³	Water demanded each year for irrigation, against about 350 Mm³ for households, industry and tourism (national water strategy, 2020).
112,956 ha	Irrigated area in 2010, i.e. 48.9% of the utilised agricultural area. The Bekaa and Baalbek-Hermel account for 55% of it (agricultural census).
147 Mm³	Water saved per year in the central scenario, i.e. 17% of irrigation water. Range from 73 to 293 Mm³ per year.
39%	Share of the national water deficit (373 Mm³ per year according to the World Bank) represented by the central saving. It is also 42% of the average inflows to Lake Qaraoun.
$88 M	Annual value in the central scenario: $37 M for water at $0.25/m³ and $51 M for the yield gain.
$2.74 bn	Agricultural imports in 2024, against $476 M of exports (FAOSTAT).
16,794 t	Mineral nitrogen used in 2024 (FAOSTAT). Indicative spending: At least $21.3 M.

M = million · bn = billion · Mm³ = million cubic metres · t = tonnes.

Our products

Green Solutions develops products for water, fertilisation and crop protection. Four product families concern this dossier.

Product	Claimed use	Published evidence (level)
EVERGREEN® (water retainer)	Retains rain or irrigation water as a gel, close to the roots.	Trials on maize, potato, watermelon, date palm and soybean. Level B to C.
ECOSORB® (water retainer made from maize starch)	Same use; lasts 2 to 3 years depending on the site.	Soybean trial (China); laboratory acrylamide analysis. Level B to C.
ECOFERT® (fertiliser)	Fertiliser certified by SOHISCERT and EU Organic.	Published certificate; potato trial combined with EVERGREEN®. Level A (certificate), C (results).
Paulownia ALTIFOLIA®	Fast-growing tree for agroforestry.	Website figures; no trial in Lebanon. Level C.
Water Vital®, NAPEMA®	Outside the scope of this dossier.	No independent source in the documents consulted.

Key points

- **Irrigation is the main use of water.** Irrigation demand reaches 882 Mm³ per year, more than twice all other uses combined.
- **Very uneven rainfall.** From 347 mm per year in Baalbek to 703 mm in Tripoli. There is almost no rain from June to September, when the atmosphere demands 150 to 200 mm of water per month.

- **The 2025 drought showed how fragile the system is.** Inflows to Lake Qaraoun fell to about 45 Mm³, against 350 Mm³ on average. 70% of potato growers in the Bekaa did not sow.
- **The climate is becoming hotter and drier.** National projections announce 10 to 20% less rainfall by 2040 and a sharp fall in snow cover.
- **The gains are concentrated on a few crops.** Potatoes and vegetables provide 59% of the water saved in the central scenario, because published trials exist for these crops.
- **The country imports most of its cereals.** In 2024: 496 thousand tonnes of wheat and 453 thousand tonnes of maize, for a wheat production of 159 thousand tonnes in 2023.

How to read the figures

Every figure refers to a source with a confidence level. A: Official statistics or international database (FAO, World Bank, agricultural census, European Commission). B: Research institute, university or public body outside statistics. C: Manufacturer's statement, non-independent demonstration, press or estimate. The sources are listed in Annex A of the dossier.

Water saved by crop group (central scenario)

Six crop groups provide 132.6 Mm³ per year, 90% of the central saving.

Crop group	Share of irrigated area	Irrigation water (Mm³/yr)	Water saved (Mm³/yr)
Potatoes and other tubers	22.1%	195	50.8
Vegetables	13.6%	120	36.3
Cereals (wheat, barley)	21.0%	185	18.5
Citrus	15.6%	138	13.8
Tobacco	8.5%	75	7.5
Maize	3.3%	29	5.7

By governorate

The Bekaa and Baalbek-Hermel provide 80 Mm³ per year in the central scenario, 54% of the total.

Governorate	Irrigated area (ha)	Irrigated share	Rainfall (mm/yr)	Water saved (Mm³/yr)
Baalbek-Hermel	31,703	55.0%	347	41.1
Bekaa	29,866	71.7%	410	38.8
Akkar	15,649	44.3%	481	20.3
South Lebanon	12,203	47.6%	646	15.8
Mount Lebanon	9,396	45.6%	631	12.2
North Lebanon	9,200	38.2%	703	11.9
Nabatieh	4,939	18.9%	616	6.4

Areas: 2010 agricultural census. Rainfall: 1991–2020 average at the governorate capital. Details in section 6 of the dossier.

External trade

- **A marked agricultural deficit.** Lebanon imports about 5.7 times more agricultural products than it exports.
- **Water-sensitive exports.** In 2024: Olive oil ($69.1 M), grapes ($28.5 M), wine ($20.8 M) and potatoes ($15.2 M).
- **Potatoes run short part of the year.** The country exports 36 thousand tonnes and imports 83: Irrigated production in the Bekaa and Akkar does not cover the whole year.

Full dossier: 29 pages, with the sources (Annex A) and the calculation method (Annex B). Green Solutions · contact@green-solutions-group.com · green-solutions-group.com