



Transboundary water cooperation in the Orontes Basin

Orontes River



- Originates from **Hermel** springs in Lebanon at 1100 – 1200 m AMSL, with an average discharge of 400 MCM/year

- About 570 km long

- About 25000 km² basin, with 8% in Lebanon

- Average basin precipitation ranges from 300-800 mm/year

- Mean basin temperature ranges from 17 – 20 °C

- Basin population is around 6 million inhabitants

Historical

- Orontes is historically one the oldest **regulated** and invested rivers
- Norias along the river were used to **irrigate** high lands
- Norias were used to provide **drinking** water for main cities through astonishing networks
- **Water mills** were powered by river water



Norias – Hama

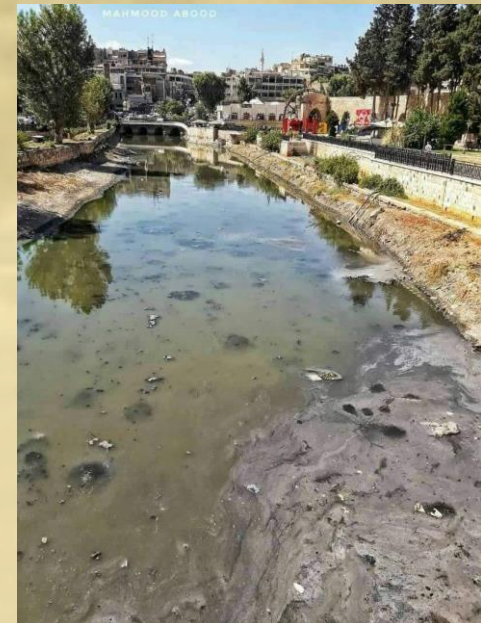


Watermill – Homs 1930s

Then



Now



The Orontes River Distribution Agreement of 1994

- An agreement on the Distribution of Orontes River Water Originating in Lebanese Territory was signed in **1994**
- For a normal average year of a **400 MCM** discharge the Lebanese side to get **80 MCM**
- The years with an average discharge **less** than **400 MCM** are considered scarce years, the Lebanese side is to get **20%** of the discharge
- River discharge is measured at the **Hermel Bridge**
- The year was divided into **4** periods with a specific share for every period (10, 10, 10, and 50 MCM)
- If Lebanon did not benefit from its full share during any period, then they can benefit from the **balance** of this share during the month that follows this period of the same year.
- **No** more wells to be bored in the river recharge area after 1994
- A **joint technical committee** is to be formed from both sides to supervise the good implementation of the agreement

The Orontes River Distribution Agreement of 1994

- This agreement is **active** and **effective**
- The joint technical committee meets **regularly**
- The joint technical committee meets **whenever necessary**
- The communication channels between the two sides are **smooth** and **fast**
- The joint technical committee sometimes discusses any **other** emerging water issues including those not related to the agreement

- This agreement **facilitated** the water planning process
- The agreement created an atmosphere of **trust** between the two parties that **prevents** any water disputes from developing
- The agreement created a **platform** to solve urgent water problems and discuss issues of common interest

Future Challenges

Main challenges

Climate changes

Pollution

Gauging and data exchange

Instability

RICCAR Report

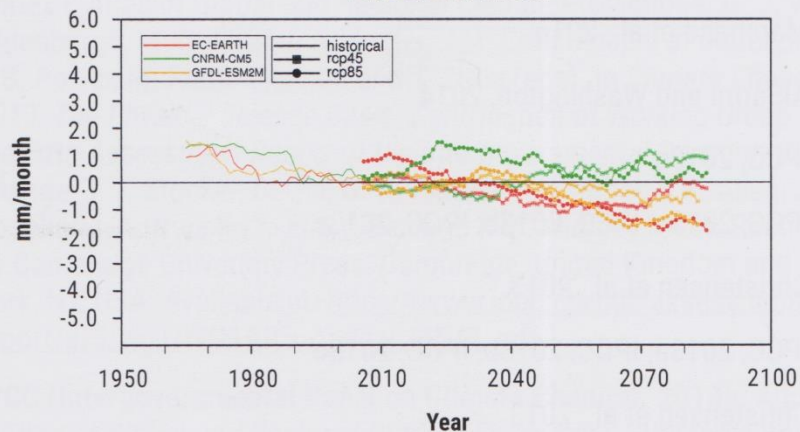
RICCAR MAIN REPORT (2017)

PROJECTED CHANGE IN CLIMATE ALONG THE MEDITERRANEAN COAST

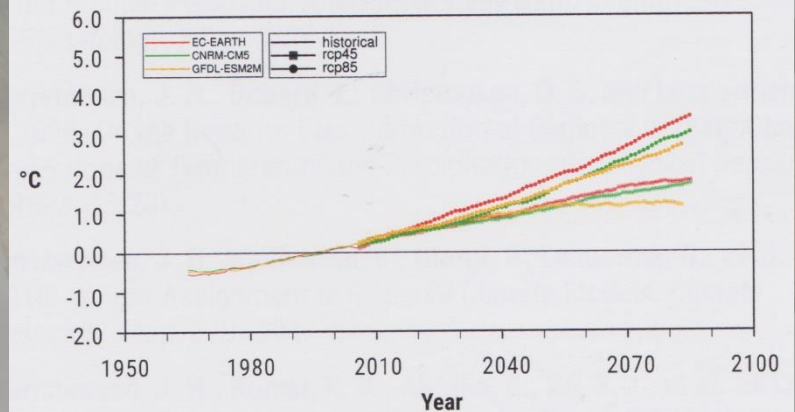
RCP 8.5

	Mid-century		End-century	
temperature	1.8 c°	↑	3.4 c°	↑
precipitation	-8%	↓	-16%	↓

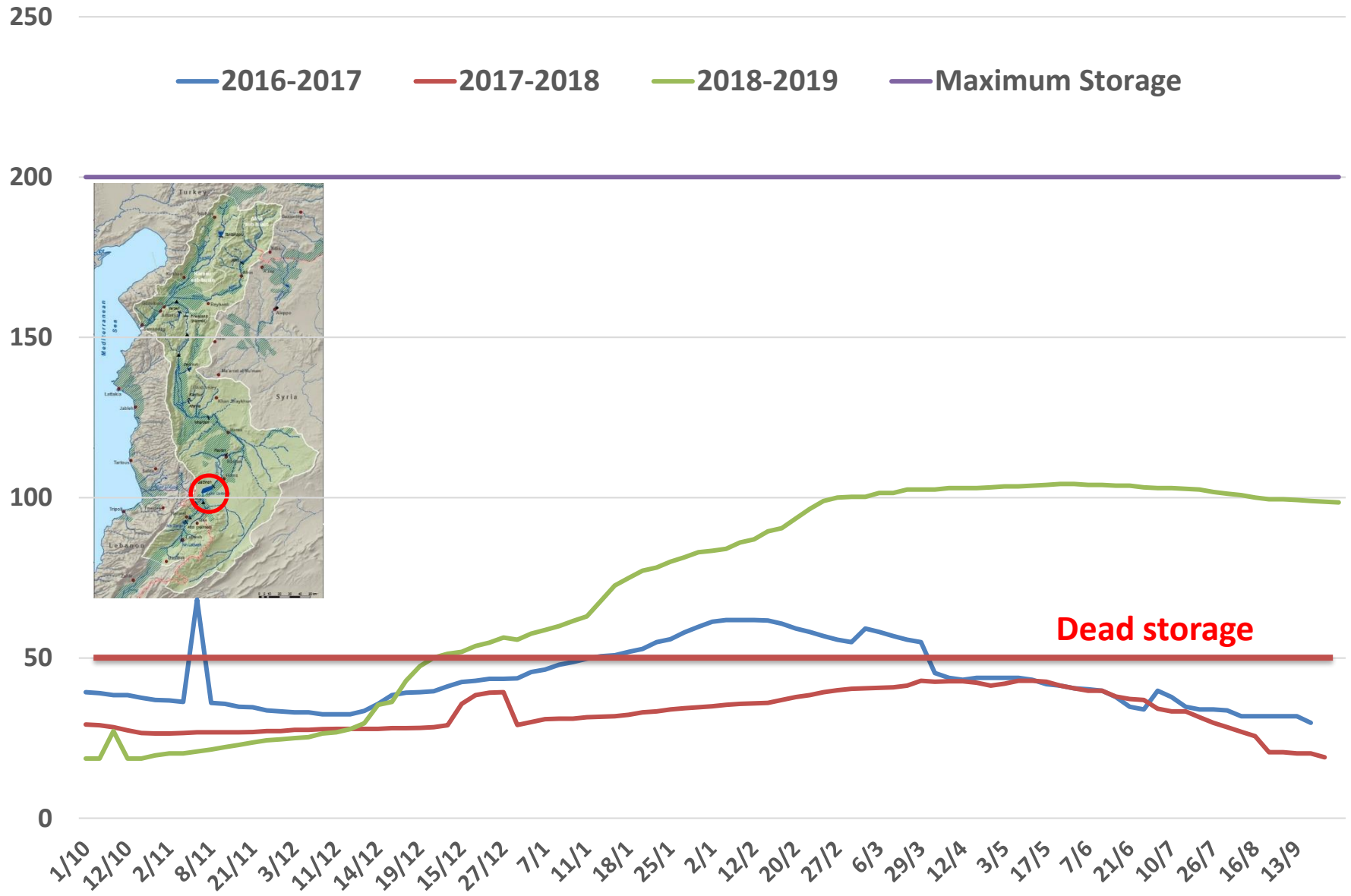
PRECIPITATION



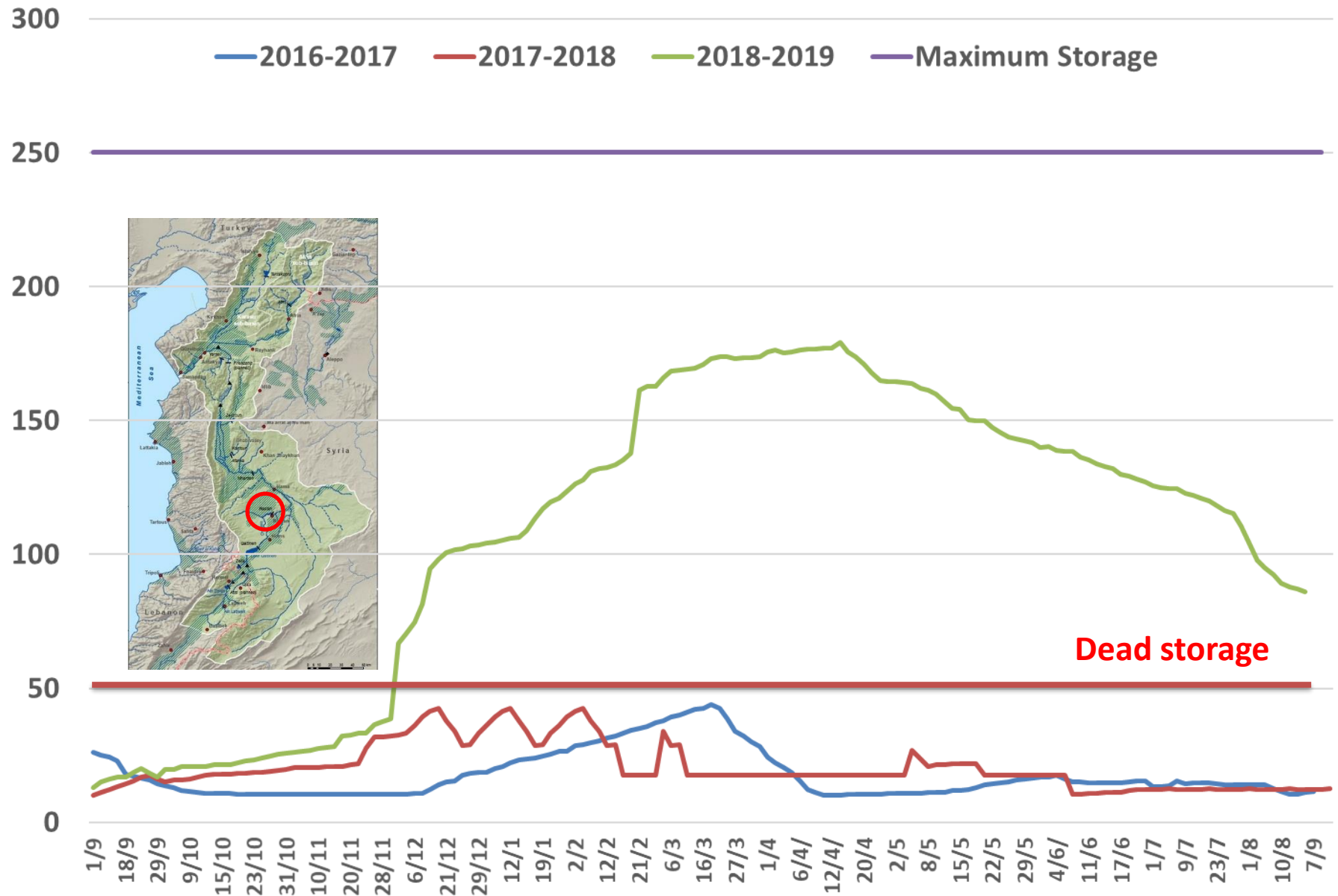
TEMPERATURE



Qatena Dam Lake Storage (million m³)



Rasten Dam Lake Storage (million m³)



Gauging and Data exchange

Main challenges

Ability

Accuracy

Consistency

Data exchange

The need for suitable management approach

All of the above raises a crucial issue

Future basin management approach

The key issue is good basin management on both sides to face and overcome

- Water **scarcity**
- **Pollution**
- Environmental **deterioration**
- **Increasing** water demand
- For Syria it all has to be done under the pressure of war consequences, rebuilding, and recovery priorities which might **negatively** affect the efforts to establish good basin management



Thank you for your
attention