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
- 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
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
Main challenges

- Climate changes
- Pollution
- Gauging and data exchange
- Instability
### RICCAR MAIN REPORT (2017)

**PROJECTED CHANGE IN CLIMATE ALONG THE MEDITERRANEAN COAST**

**RCP 8.5**

<table>
<thead>
<tr>
<th></th>
<th>Mid-century</th>
<th>End-century</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>temperature</strong></td>
<td>1.8 °C</td>
<td>3.4 °C</td>
</tr>
<tr>
<td><strong>precipitation</strong></td>
<td>-8%</td>
<td>-16%</td>
</tr>
</tbody>
</table>

**Graphs:***

- **Precipitation:** Showed a decrease in precipitation from the mid-century to the end-century.
- **Temperature:** Demonstrated an increase in temperature from the mid-century to the end-century.
Rasten Dam Lake Storage (million m³)

- 2016-2017
- 2017-2018
- 2018-2019
- Maximum Storage

Dead storage
Gauging and Data exchange

Main challenges

Ability
Accuracy
Consistency
Data exchange
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