

Regulation of outflow from Lake Saimaa and the Vuoksi River Discharge Rule

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Finland and Soviet Union in early 1960s: needs for joint management of transboundary waters

- Severe water quality problems, hydropower development, flood risks and water allocation problems
- Common understanding of risks, benefits and costs
- Single agreement: all transboundary rivers and lakes (>400, about 19 significant)



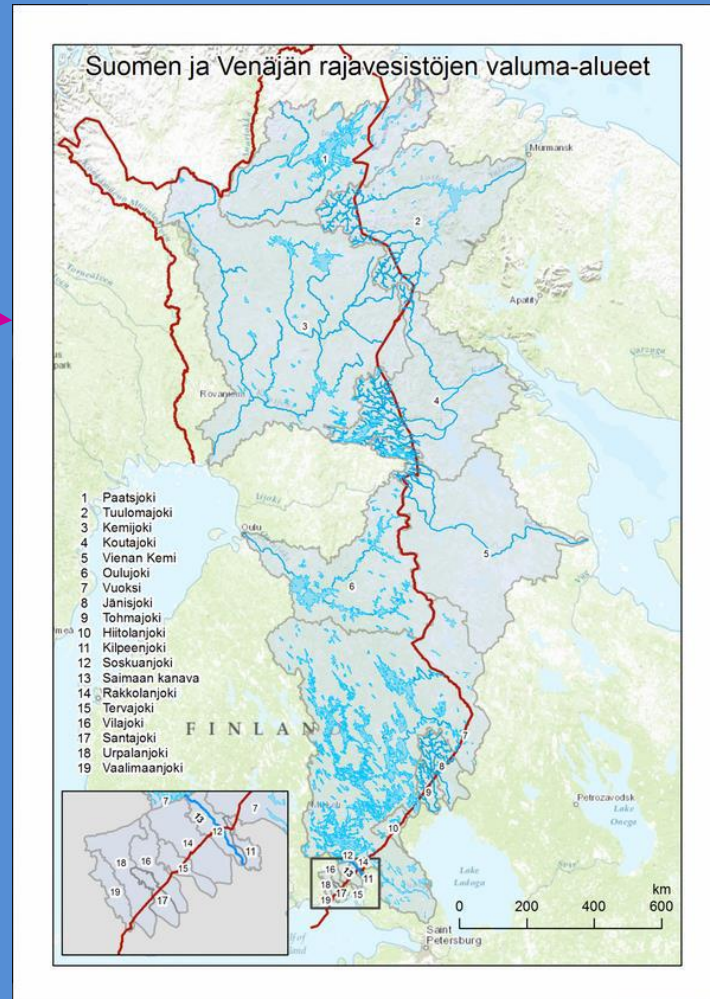
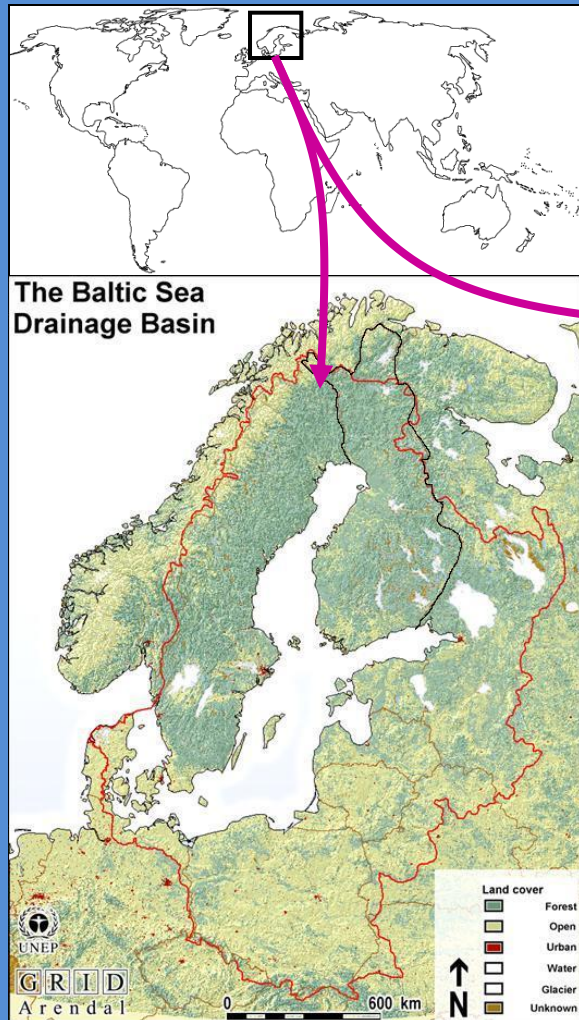
Signing ceremony in 1964

Finnish - Russian Agreement on the Utilisation of Transboundary Watercourses (1964) – A case of IWRM before IWRM

- Regulations on impacts in neighbouring country
 - Water flow and structural measures
 - Floods and water scarcity
 - Timber floating and navigation
 - Fish migration
 - Pollution and water quality
 - Public health and economy
- Joint Finnish – Russian Commission on the Utilisation of Transboundary Watercourses



Finland – Russia Transboundary Water Cooperation

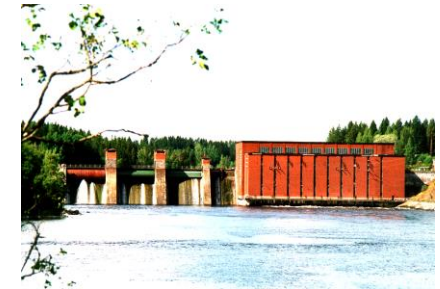


The Lake Saimaa - River Vuoksi System

- Catchment 70 000 km²
 - Finland 77 %, Russia 23 %
- Lake Saimaa
 - surface 4 460 km²
 - precipitation ~ 600 mm/a
 - water level fluctuation 3,3 m, annual mean 0,7 m
- River Vuoksi natural discharge
 - mean 600 m³/s
 - max 1170 m³/s
 - min 220 m³/s



The profile and power plants of the River Vuoksi

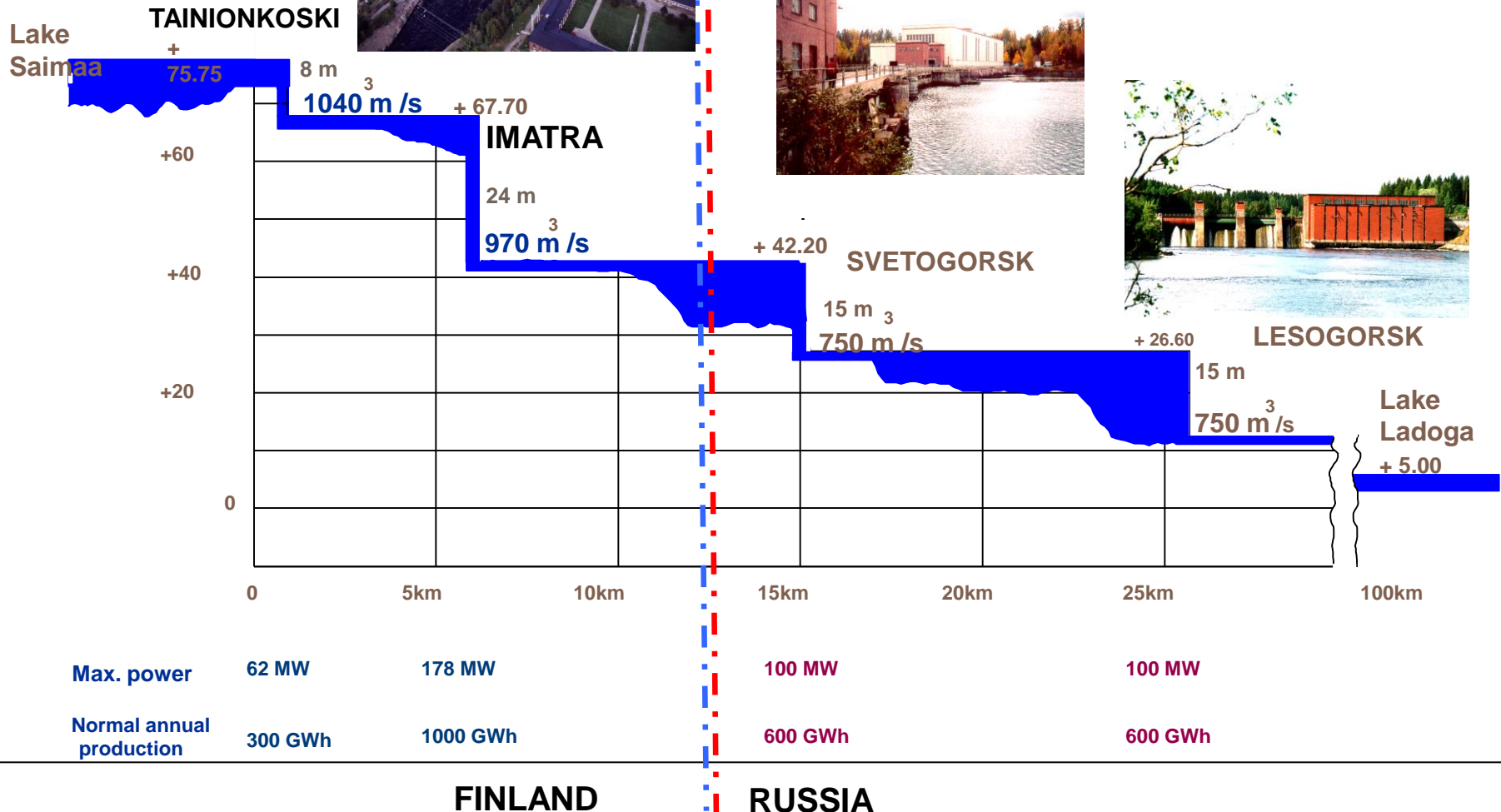


VUOKSI

Total head (utilized) = 63 m

Installed power = 440 MW

Normal annual production = 2500 GWh

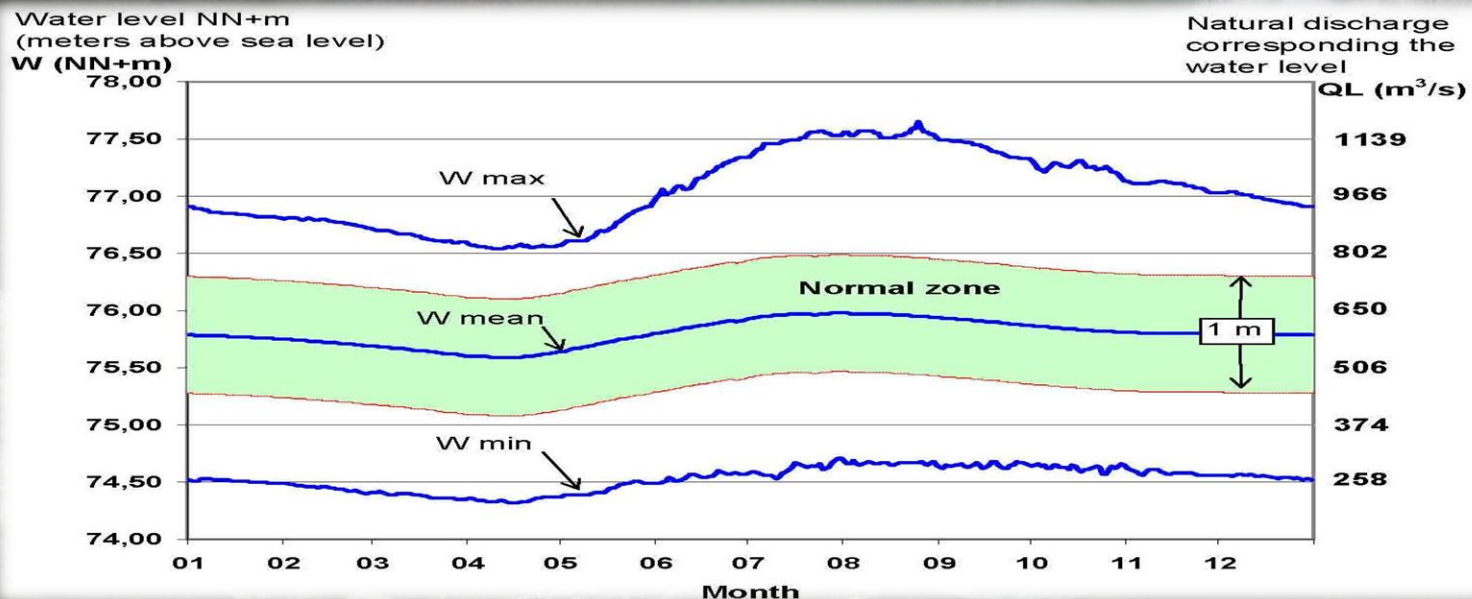


Lake Saimaa and River Vuoksi Discharge Rule

- Hydropower and flood risks main challenges in 1970s
- Initiative of the Russian Party at the Joint Transboundary Commission 1973
- Development targets at the outset
 - Increase winter discharge and minimum flows in River Vuoksi
 - Prevent exceptionally high and low water levels in Lake Saimaa and in the River Vuoksi
- Jointly accepted 1989, implemented 1991

The Discharge Rule

- Natural water level and discharge in normal circumstances
- When water level forecast goes beyond normal zone discharge may be increased or reduced
- Natural discharge resumed when flood or drought threat ceases
- Discharge above normal zone may cause losses on both sides



Risk-based water allocation

- Main objective: minimize damages in both countries under flood or drought
- Based on:
 - Continuous hydrological monitoring and forecasting
 - Real-time data and information exchange
 - Common principles for defining flood risk and flood hazard maps
 - Assessment of various risks, damages and benefits based on commensurate data
 - Potential losses for hydropower one factor among others
 - Discharges aim at minimizing total risks and damages
 - Common balance account of losses and gains due to exceptional discharge
 - Eventual compensation based on the balance to be agreed between governments
 - Goal of the Discharge Rule: optimal overall outcome for both countries

Finland - Russia Cooperation: Some General Observations

- Joint transboundary integrated water resources management is achievable for two very different societies
- Survived cold war and collapse of Soviet Union
- Common views on reasonable and equitable use of shared natural resource
- Clear focus on mutual management interests
- Pragmatic joint work aiming at beneficial outcomes for both sides
- After decades of collaboration still seen as a good example by both Parties



Thank you!