



# GTK'S ONGOING MAR PROJECTS AND PREPARATIONS

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EIP Water AG 128 MARtoMARket side meeting on “How H2020 MARSoluT will contribute to tackle water, pollution and enhance MAR preparedness in EU



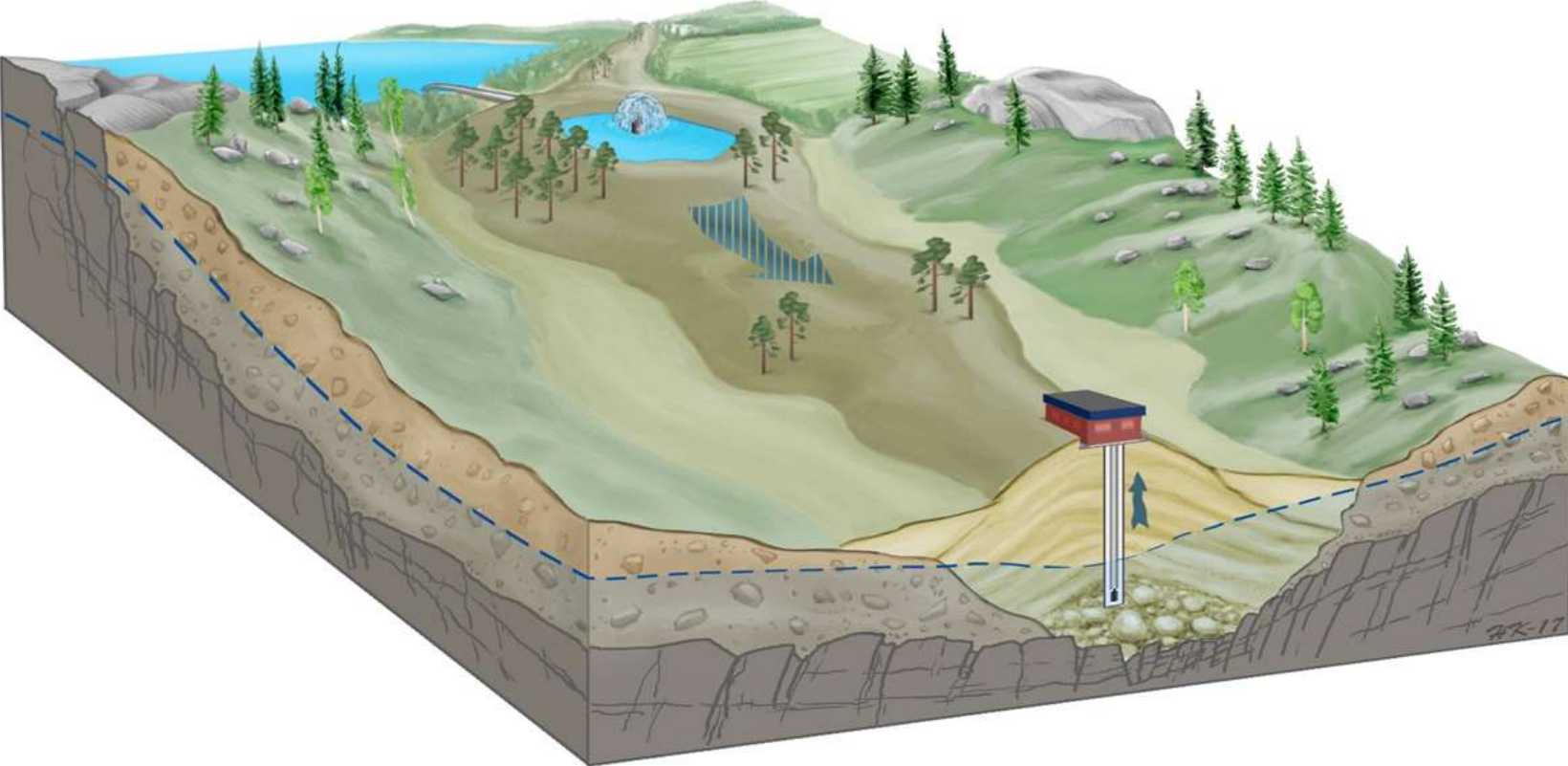
# GEOLOGICAL SURVEY OF FINLAND (GTK) - WATER MANAGEMENT SERVICES

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- Hydrogeological mapping and 3D modelling
- Groundwater flow and transport modelling
- Water quality and vulnerability assessment
- Managed aquifer recharge
- Training and capacity building



# MAR IN FINLAND



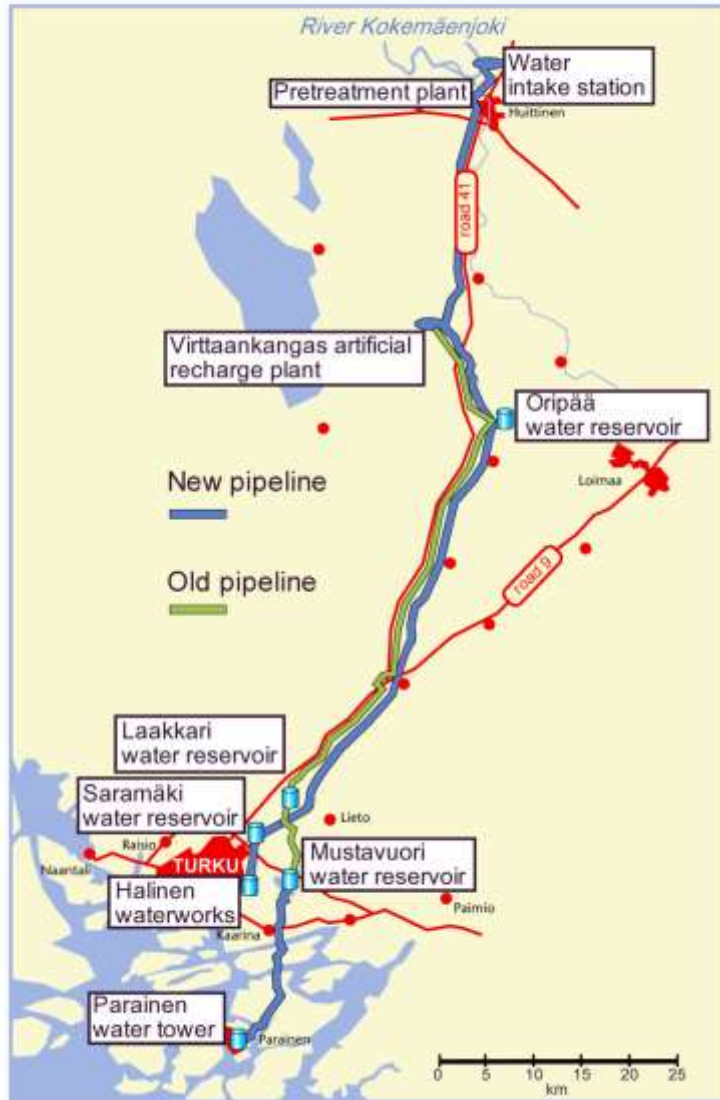
# MAR IN FINLAND

- MAR has over 100 year long traditions in Finland
- ~ 25 MAR plants , capacities 1 000 – 100 000 m<sup>3</sup>/day, all using ASTR > no post treatment needed
- About 20% of water supply is based on MAR in Finland
- Finnish know-how in public and private sector covers the whole concept for implementing MAR
- Finnish MAR network/consortium was established recently (under Finnish Water Forum)



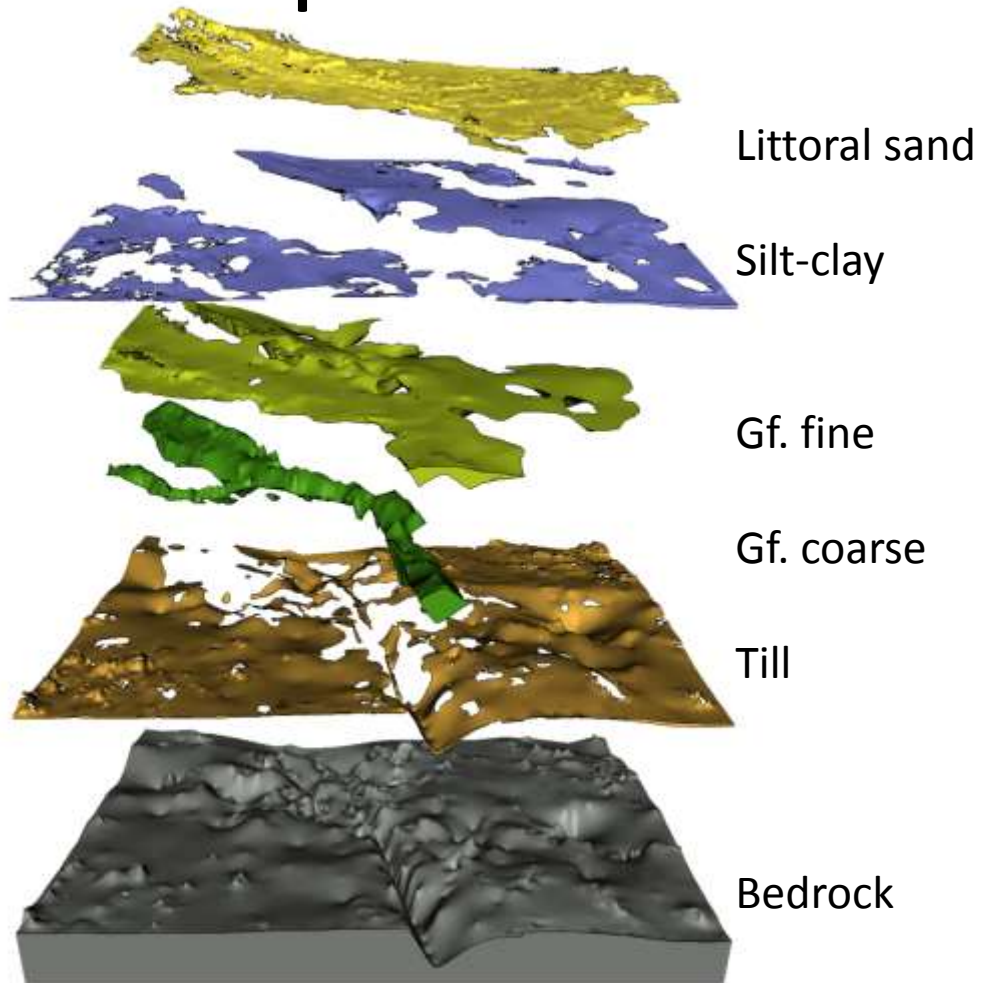
# REFERENCES: TURKU REGION WATER

## TURKU REGION ARTIFICIAL RECHARGE PROJECT





## 3D-hydrogeological model of the Aquifer



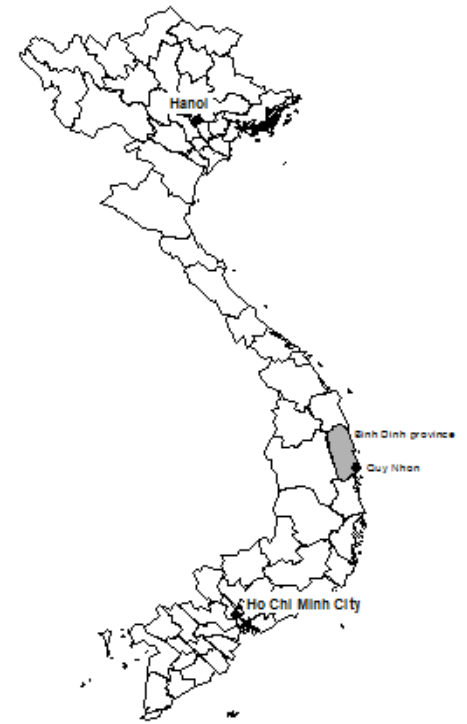
- Turku Region Water Ltd. supplies the 300.000 people of the Turku region with artificially infiltrated groundwater (MAR).
- Pretreated river water is infiltrated into the Virttaankangas esker system.
- The company is the only provider of potable water for all the shareholder municipalities. Full scale water production was achieved in December 2013. The current production rate is 65.000 m<sup>3</sup>/day.
- Total length of the feeder pipelines (DN= 1200 mm and 1000 mm) is about 100 km.

# REFERENCES: VIETNAM (ONGOING)

- GTK has ongoing MAR project in QuyNhon, BinhDinh province, Vietnam
- The potential site for MAR is a peninsula formed on a delta system with a total capacity of aquifer over 80,000 m<sup>3</sup>/d
  - => Thorough understanding of the geological, hydrogeological and geochemical features of the aquifer in different climatic conditions
- Preliminary idea is to apply MAR by rain water harvesting => natural discharge to the sea is over 35,000 m<sup>3</sup>/d (surface runoff and spring discharge)
- Average precipitation (1990-2016) in dry season (Jan-Aug) is 460 mm and in rainy season (Sep-Dec) 1,500 mm
  - => Studies on feasible MAR application to cope with the long dry season

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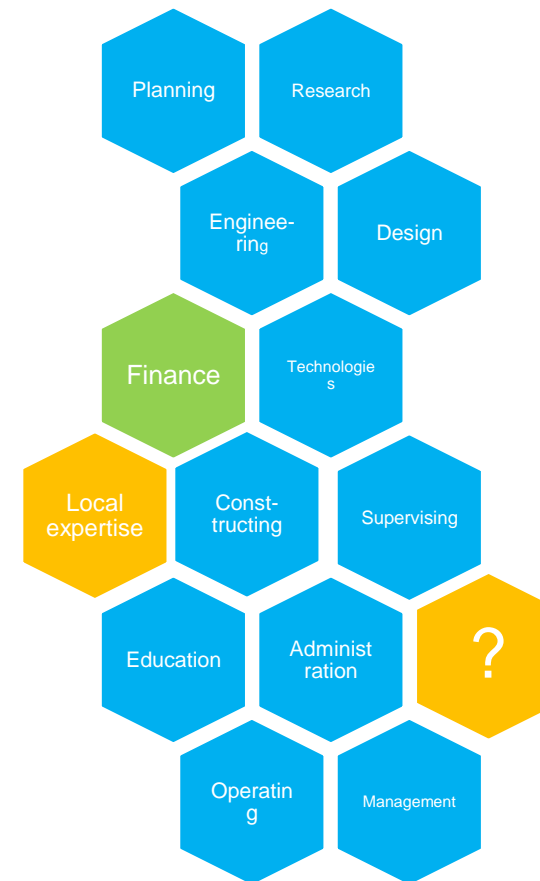


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# PROJECT PREPARATIONS

- MAR Pilot in Kenia , funded by ministry for foreign affairs of Finland
- EU funding







**THANK YOU**

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