ESTONIAN METEOROLOGICAL AND HYDROLOGICAL INSTITUTE

Phare project: "Development of the National Hydrometric network to EU standards"

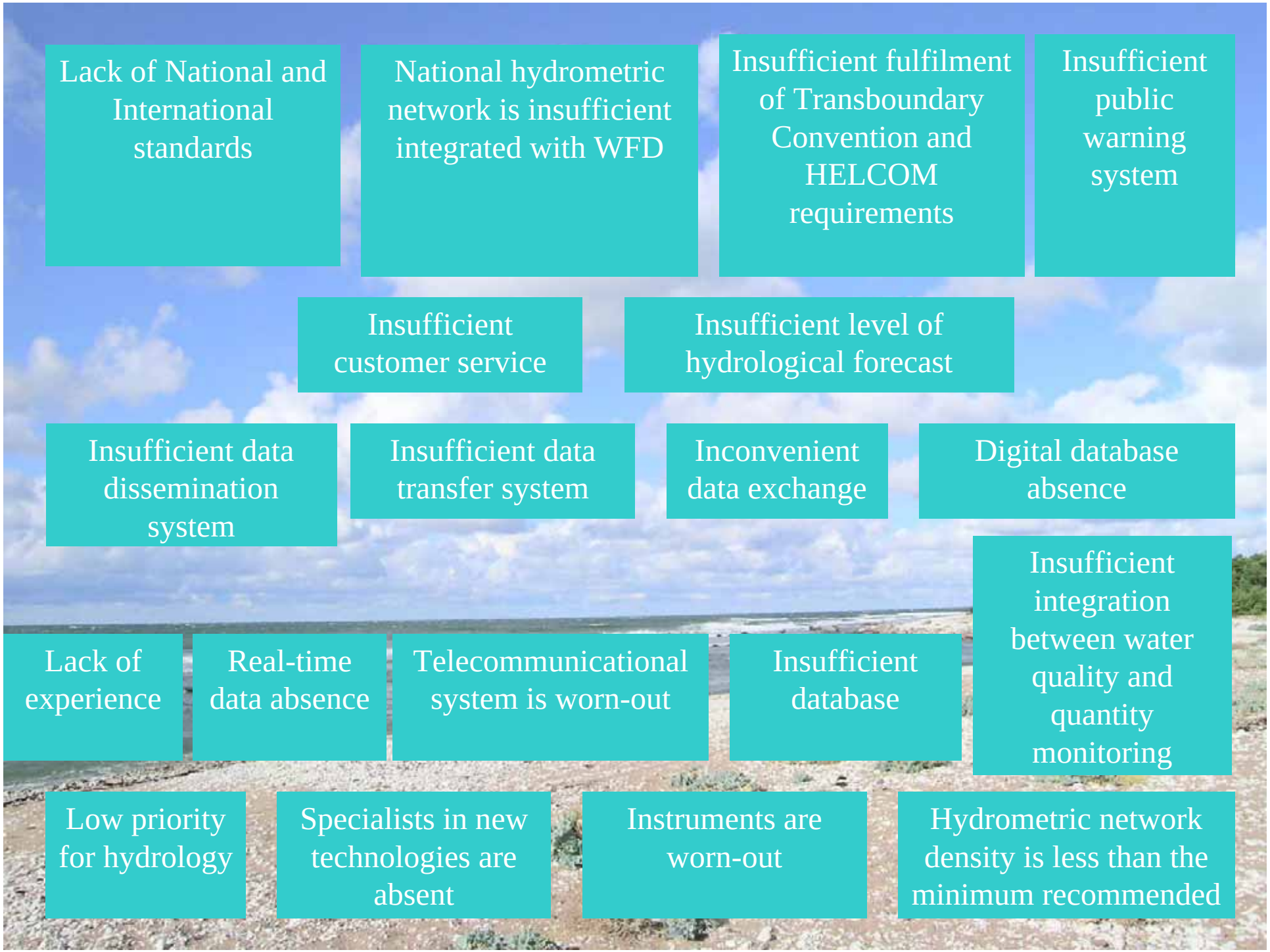
Estonia

Olga Kovalenko
Hydrology Department
EMHI

Aim of the project

- **Estonia implements WFD requirements (Art. 4, 6, 8, 16) at the part of estimation of surface water monitoring**
- Short-term:
- Development of National hydrometric network (integration with others environmental monitoring networks, technical optimisation as well as increasing in density);
- Creation of Hydrological Inforamation System (HIS). Real-time data transfer via Internet for improvement quality of hydrological forecast and timed-out flood warning, increasing of efficiency of client sevicing;
- Providing of environmental projects with required hydrological data for fulfillment of international conventions

Problems


Lack of National and International standards
National hydrometric network is insufficient integrated with WFD
Insufficient fulfilment of Transboundary Convention and HELCOM requirements
Insufficient public warning system
Insufficient customer service
Insufficient level of hydrological forecast
Insufficient data dissemination system
Insufficient data transfer system
Inconvenient data exchange
Digital database absence
Insufficient integration between water quality and quantity monitoring
Lack of experience
Real-time data absence
Telecommunicational system is worn-out
Insufficient database
Low priority for hydrology
Specialists in new technologies are absent
Instruments are worn-out
Hydrometric network density is less than the minimum recommended

Project contracts

- Contract 1 – **Twinning light** (for institutional framework assessment and training)
- Contract 2 – **Works Contract** – Construction of hydrometric stations infrastructure
- Contract 3 – **Technical Assistance** for developing HIS, trainings and seminars
- Contract 4 – **Supply** – Automatic stations, hardware and softwar, installation; factory based training; customer service for 3 years.

Project implementation

Contract 1

Twinning-light for institutional framework assessment and training

Phare, 38 400 EUR, 3 months

MS Project Leader 3 working days over 1 consecutive month

- STE 1 for 1 working month
- STE 2 for 5 working days
- STE 3 for 5 working days
- EU Member State Admin Costs
- International Transportation Costs
- Other costs (seminar materials, translation)
- Audit certificate
- Reserve

Activity applied

Report

"Assessment of existing institutional framework and operational procedures of the National hydrometric network. Proposals for future institutional framework arrangements"

Training

"Requirements of EU WFD and its implementation in hydrology and water policy"

"Database Management System Platform and Information System and new applications for hydrological data"

Contract 2

- **Works Contract**

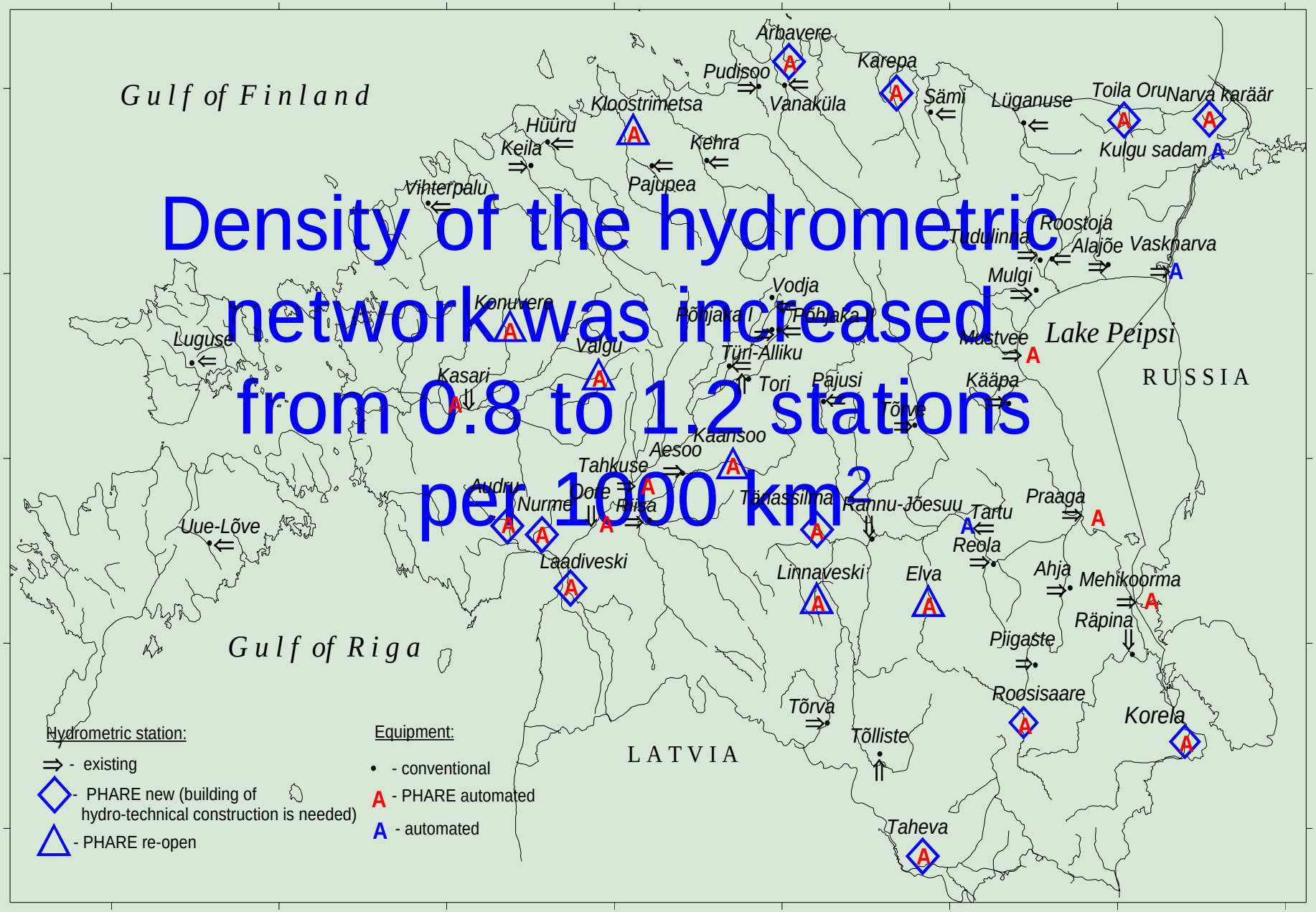
  National co-financing 75 000 EUR

  Committed 147 000 EUR

  (due to significantly rise of the construction prices)

- Construction of hydrometric stations infrastructure.

Hydrometric network 2007

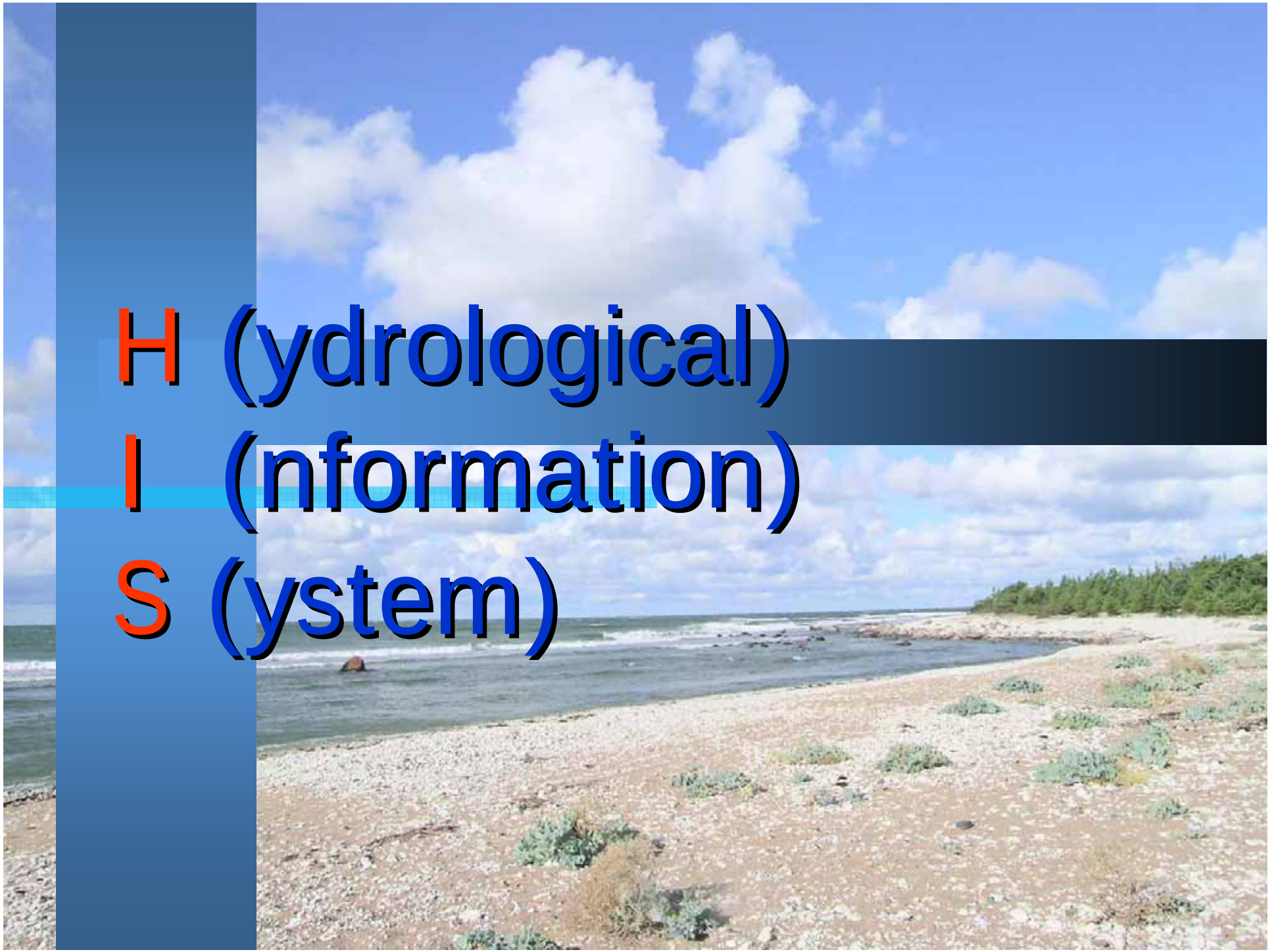


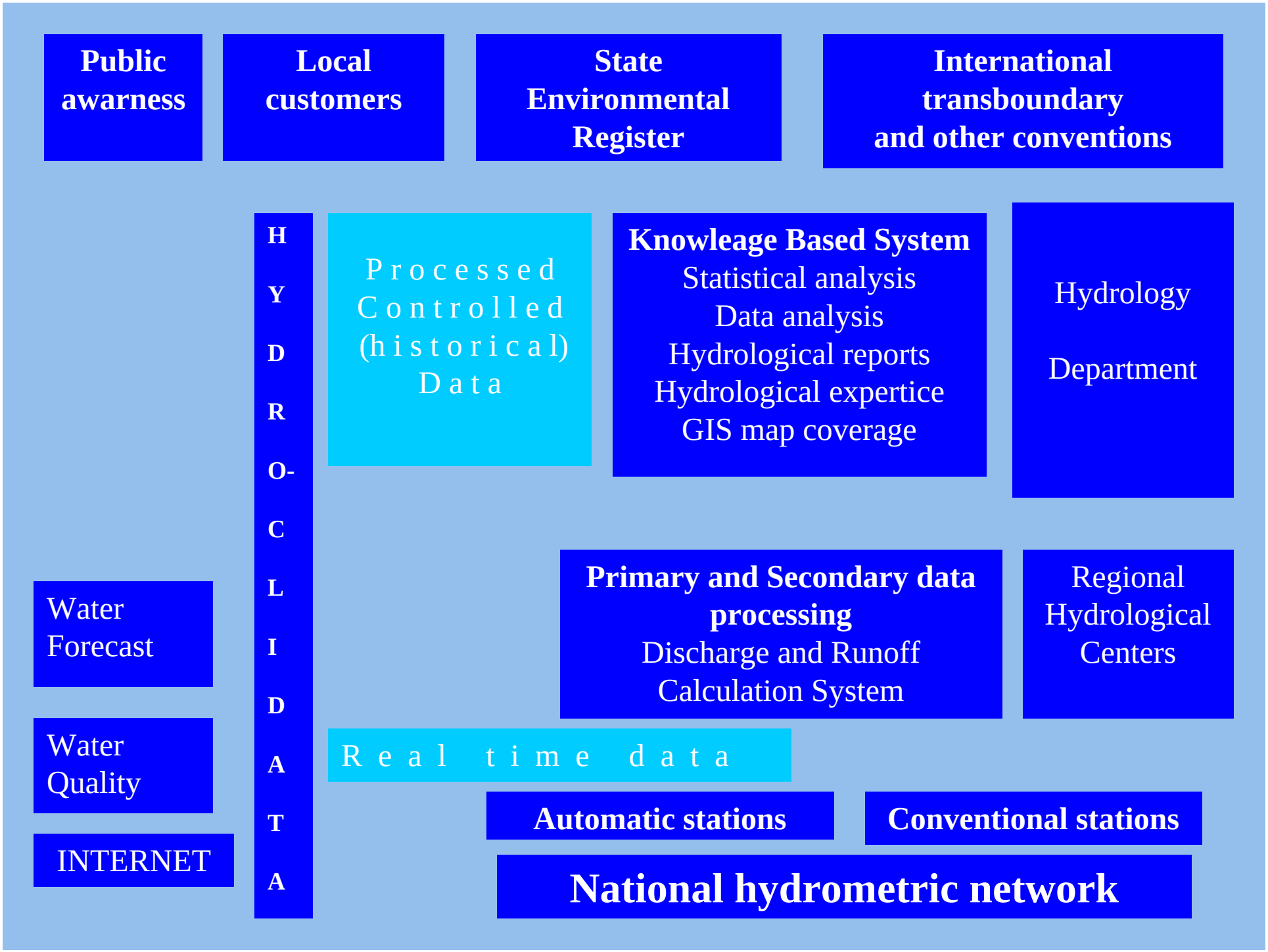
Density of the hydrometric network was increased from 0.8 to 1.2 stations per 1000 km²

Contract 3

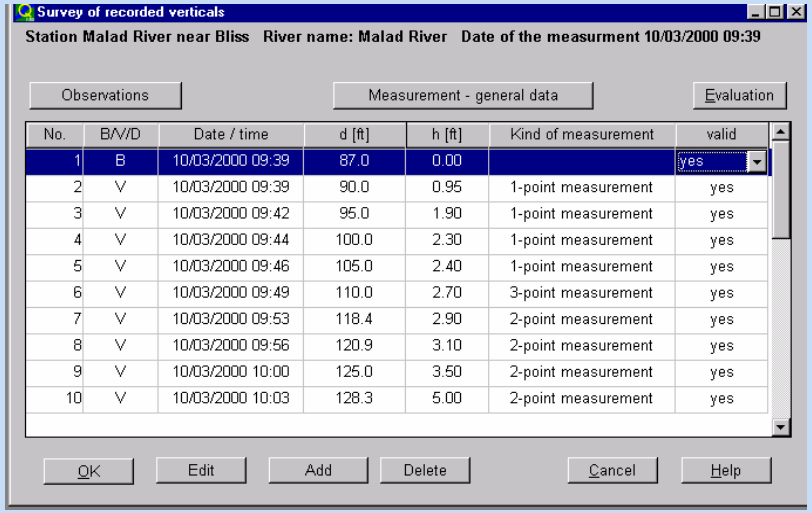
- **Technical Assistance for developing HIS**
  Phare 158 000 EUR
  National co-financing 20 000 EUR

- STTE 1 for 1 month
- STTE 2 for 6 months
- STTE 3 for 8 months
- HIS and river flow processing software trainings, training materials and workshop
- 1,5 IT administrators (system maintenance) for 12 months

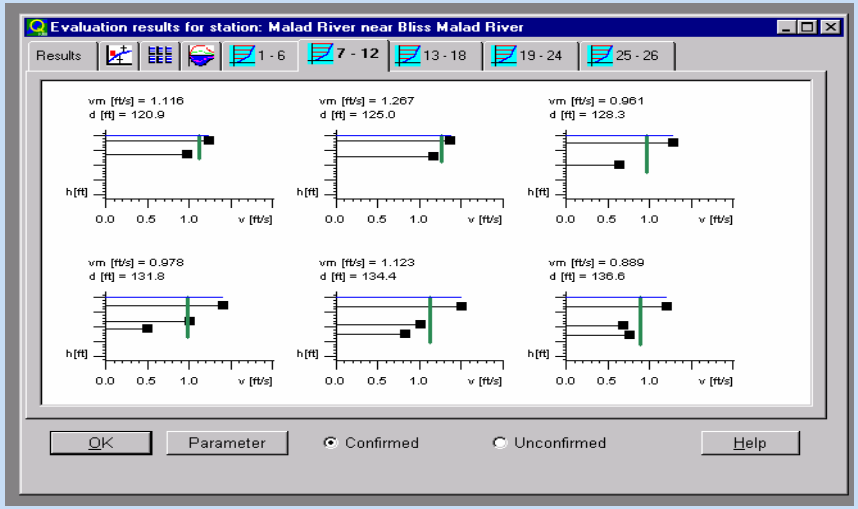

H (ydrological)
I (nformation)
S (ystem)

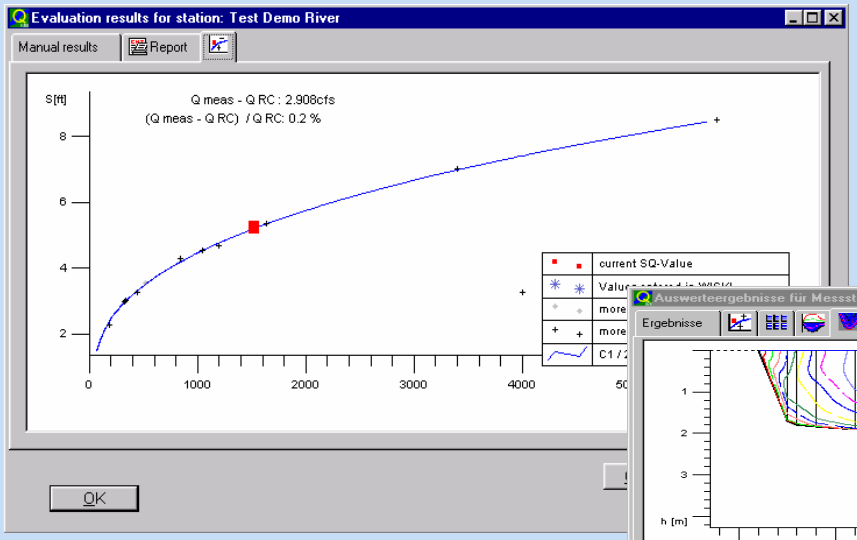

Public awarness
Local customers
State Environmental Register
International transboundary and other conventions
HYDRO-CLIDATA
Processed Controlled (historical) Data
Knowleage Based System
Statistical analysis
Data analysis
Hydrological reports
Hydrological expertice
GIS map coverage
Hydrology Department
Water Forecast
Primary and Secondary data processing
Discharge and Runoff Calculation System
Regional Hydrological Centers
Water Quality
Real time data
INTERNET
Automatic stations
Conventional stations
National hydrometric network

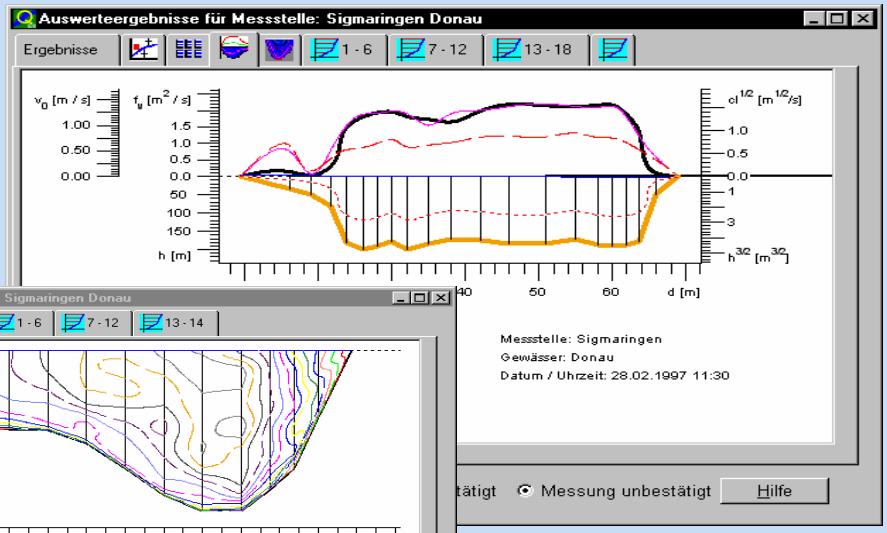
Data

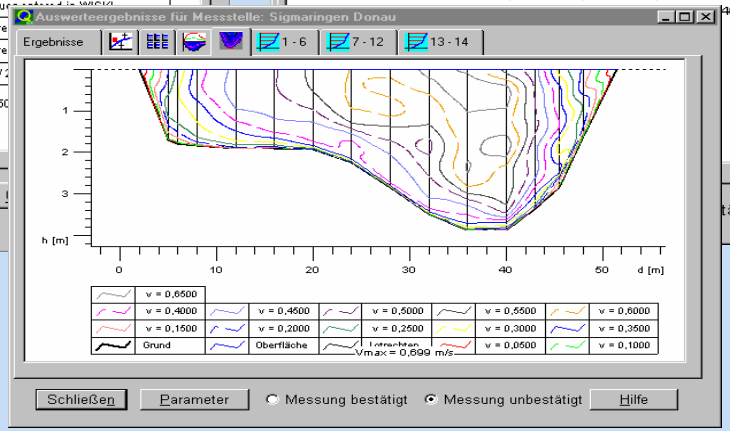


Vertical









Rating Curve Comparison

Cross Section

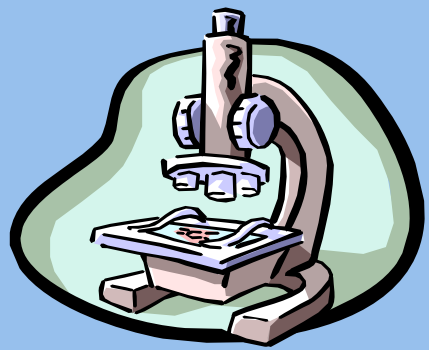
Contract 4

- Supply contract for procurement of up-to-date equipment, hardware and software, its installation and training

  Phare 339 000 EUR

  National co-financing 114 600 EUR

- Procurement contract includes 3 years maintenance contract, 6000 EUR

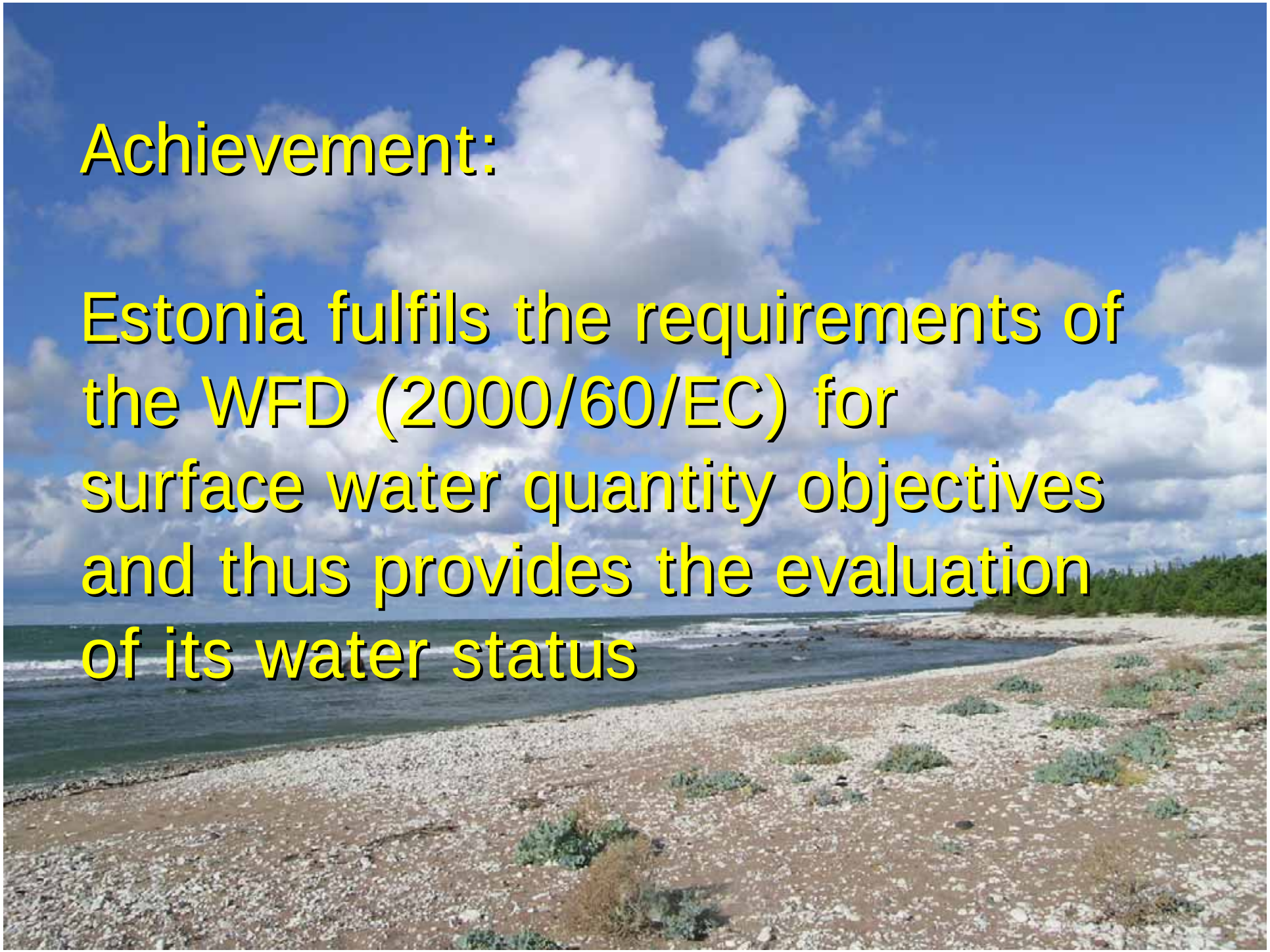


Activity applied

- **Up-to-date equipment, hardware and software (sensors, telemetry outstation, data collection server, database server, workstation and notebook) were procured and installed**

- **Training**

  ”Data transmission, processing, storage, analysis and dissemination system”


Achievement:
Estonia fulfils the requirements of the WFD (2000/60/EC) for surface water quantity objectives and thus provides the evaluation of its water status


Thank you
for your attention!