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 Information System (HIS). Real-time data transfer via Internet for improvement quality of hydrological forecast and timed-out flood warning, increasing of efficiency of client servicing;
  - Providing of environmental projects with required hydrological data for fulfillment of international conventions

ESTONIAN METEOROLOGICAL AND HYDROLOGICAL INSTITUTE
Problems
Lack of National and International standards

Insufficient fulfilment of Transboundary Convention and HELCOM requirements

Insufficient data dissemination system

Insufficient data transfer system

Insufficient customer service

Insufficient level of hydrological forecast

Inconvenient data exchange

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

Insufficient data transfer system

Insufficient data dissemination system

Insufficient customer service

Inconvenient data exchange

Digital database absence

Insufficient integration between water quality and quantity monitoring

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 software, 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.
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 (hydrological)
I (Information)
S (System)
**Data**

<table>
<thead>
<tr>
<th>No</th>
<th>Time</th>
<th>h (m)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10/02/2010 09:39</td>
<td>0.00</td>
<td>1-point measurement yes</td>
</tr>
<tr>
<td>2</td>
<td>10/02/2010 09:42</td>
<td>0.00</td>
<td>1-point measurement yes</td>
</tr>
<tr>
<td>3</td>
<td>10/02/2010 09:44</td>
<td>0.00</td>
<td>1-point measurement yes</td>
</tr>
<tr>
<td>4</td>
<td>10/02/2010 09:45</td>
<td>0.00</td>
<td>1-point measurement yes</td>
</tr>
<tr>
<td>5</td>
<td>10/02/2010 09:49</td>
<td>0.00</td>
<td>1-point measurement yes</td>
</tr>
<tr>
<td>6</td>
<td>10/02/2010 09:53</td>
<td>0.00</td>
<td>1-point measurement yes</td>
</tr>
<tr>
<td>7</td>
<td>10/02/2010 09:55</td>
<td>0.00</td>
<td>1-point measurement yes</td>
</tr>
<tr>
<td>8</td>
<td>10/02/2010 10:00</td>
<td>0.00</td>
<td>1-point measurement yes</td>
</tr>
<tr>
<td>9</td>
<td>10/02/2010 10:03</td>
<td>0.00</td>
<td>1-point measurement yes</td>
</tr>
<tr>
<td>10</td>
<td>10/02/2010 10:03</td>
<td>0.00</td>
<td>1-point measurement yes</td>
</tr>
</tbody>
</table>

**Vertical**

- **Evaluation results for station Test River**
  - **Manual results**
  - **Report**

- **Cross Section**

- **Rating Curve Comparison**
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!