



Water Management of the Narva River: harmonization and sustention
ER25 NarvaWatMan

Consolidated Report

II PERIOD (15.09.2019-14.03.2020)

Alvina Reihan, TalTech

Yaroslav Kobets, TalTech

Tallinn 2020

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Summary

In that period some important events have organized that help to achieve results of the project. One of the most important activities were joint field measurements on the Narva river:

- water discharge measurements and,
- sampling water for chemical analysis.
- the Information panel that displays the measured data at the port on the Narva river was installed on time.

Overall and financial management was provided according to the project plan. This included continuous coordination of all project activities and tasks among the partners by TalTech, ensuring proper communication with project partners and EST-RUS Programme representatives, updating the project website with news and upcoming events, ensuring the proper financial management, including submission of several Budget Change Requests (i.e. one Major Change Request). Project working face-to-face meetings were regularly held, as well as online meetings and calls.

Contribution to project communication and visibility activities was performed by active participation in project Winter EcoMarathon. Information dissemination actions also included visiting different events and presenting the project activities, e.g. during "European Cooperation Day"/Sept.2019 in Saint Petersburg, Russia, "Enterpriser week"/Oct.2019 in Narva, Estonia, Narva-Jõesuu city council/Jan.2020 in Narva-Jõesuu, Estonia, Winter EcoMarathon in Ivangorod in Febr. 2020, involving more than 250 participants.

Management

TalTech (LP) has continued to maintain the already established Project implementation system, i.e. coordination of all project activities and tasks among the partners. FSBI SHI and SC Mineral continued their activities from day-to-day management of project work (including fieldworks) to face-to-face meeting in Tallinn on January 5, 2020 in September - December 2019, and February 2020 in Ivangorod. On that meeting, partners' experts discussed various questions on core activities A.T2, A.T3 and A.T4 and Concluding the Summer and opening and providing the Winter EcoMarathons.

The second SC meeting was planned for 20th March 2020 together with the Baltic Sea day in St.-Petersburg, however, was cancelled due to coronavirus (COVID-19) outbreak. The next SC meeting is planned to be held later during the III reporting period.

During the II reporting period project partners submitted their first partner reports. Also, 1st consolidated report was submitted by TalTech. GGI and SC Mineral submitted their reports a little bit later. All reports were approved by JTS and MA.

Core activities

Field measurements were performed by FSBI "SHI" and TalTech, according to the initial plan with frequency of once a month and more often when it was possible. The measurements were carried out in three hydrometric cross-sections (2 on the Narva River and 1 in the course head-race channel of the Narva HGS).

From September 2019 to March 2020 17 water discharge measurements in total were performed, including 6 discharges in the head-race canal and 11 in the cross-sections on the Narva River. Water discharges measured simultaneously differ no more than 5%, which is acceptable.

Five and two field-working trips from Russia and Estonia respectively were completed consequently. In Russia:

- 15-16th of October 2019;
- 27-28th of November 2019;
- 5th of December 2019;
- 24th of January 2019;
- 12-13th of March 2020.

In Estonia:

- 16th of October 2019;
- 7th of November 2019.

The Information panel that displays the measured daily/hourly water levels, air and water temperatures (<http://fun.lh1.in/>) at the Narva port in Narva city was installed in Lipovaja Jamka (Narva city) in February 2020. For that purpose, TV set with a possibility of internet connection and to display the website with the data in 24/7 mode was procured. The measured parameters are provided by the Estonian Environmental Agency (KAUR) with their consent. The webpage which takes the data from ilmateenistus.ee (KAUR) was developed specifically for the project. The installation was done by the winner of the procurement procedure in cooperation with Narva City Development Foundation (www.nla.ee) under the supervision of TalTech technician. The webpage will be transferred to another server as the Narva City Development Foundation is changing their domain.

Analysis of differences of measured in Narva city and calculated at the Narva HPP discharges has started. One Master Thesis has been started as part of this work package (initiated by TalTech). The master student is Yaroslav Kobets. The Master Thesis will have a reference to the Programme.

Water samples were taken by FSBI "SHI" and TalTech on 16.10.2019 in two locations with 9 samplings set at three different depths. After that, the navigation period has ended and it was forbidden to use boats on the Narva river.

Samples from Estonian and additionally from Russian sides were analysed in TalTech laboratory (totally 18). Water chemical analysis showed that the concentration of total nitrogen in October is about 30% lower than in August. In October a sudden rise was in phosphorous concentration towards the side of the Russian bank of the river at the sampling location 6 km from the river mouth. The difference is very big and it may be caused by a stagnation zone near Petrovsky island. All other concentrations of N and P are very similar.

Results obtained within the project correlate with the results of the Estonian national monitoring data, being of the same magnitude. There is a bigger difference between the results for nitrogen in August when $N_{tot}=0,83$ for the project and $N_{tot}=0,39$ mgN/l for the monitoring program. In October the respective numbers are 0,70 and 0,58 mg/l. For phosphorous the results correlate very well, being for the project and monitoring program 0,036 and 0,035 mgP/l in August and 0,033 and 0,045 mgP/l, in October, respectively. One Master Thesis has been started as part of this work package (initiated by Taltech). The master student is Daria Myrna. The Master Thesis will have a reference to the Programme.

Experts from FSBI SHI and TalTech determined a list of chemical substances that could serve as indicators of water body object and contamination. Besides that, preliminary levels for Maximum available concentration (MAC) were set. After that, the Questionnaire for experts in hydrochemistry from Russia and Estonia to involve them in the process of determination of water quality standards (in Russian and Estonian) was compiled.

Assessment of water quality indicators in Russia was finished by analysing specific combinatorial water pollution index (SCIWP or UKIZV in Russian transcription) in different rivers of the Russian part of Narva river catchment from 2006 to 2018. Eight water quality indicators for seven river types are used

in Estonia. Water quality indicators for the Narva river are highlighted in a separate type. These basic principles of typology will be used for a consistent assessment of water quality. The questionnaire was delivered to experts unofficially and some responses with comments were received, that made additional points for discussion. This will be done in the next period as the end of this activity is March 2020 which goes for the third period as well.

Preparation for the contact meeting at the end of March was started, however it was cancelled due to the COVID-19 outbreak.

The major activities were related to collecting data about transboundary/boundary rivers in the Baltic Sea catchment. Experts from TalTech and FSBI SHI took part in the discussion of the report that “SC Mineral” prepared via e-mail. The partners evaluated differences between data on water discharges on Narva river in different sources: National databases, HELCOM database, TGC data and data from State Water Cadastre (SWC).

Catchment properties, anthropogenic pressures, and indicative area-specific losses were analysed to understand similarity in the conditions and possibility to transfer experience from those areas to Narva river basin. Information about approaches to divide input between countries, as well as the process behind the allocation has been gathered by communication with relevant experts and literature study. A comparison of the existing methods applied by Estonia and Russia for source apportionment during HELCOM PLC-6 and PLC-7 assessments were made. PLC-7 results have been compared as well.

Several alternative approaches, such as per capita, per agricultural area and reduction potential assessment, can be also applied. Comparative table, summarizing the main advantages and disadvantages of applying each method in the Narva River case, is being prepared. All partners commented on the preliminary version.

At the finalization phase, it is planned to conclude the approaches as well as identify the period for collecting data in follow-up activities (task 4.2). The report on task 4.1 will be discussed on Forum DBS 2020 (St-Petersburg, 19-20 March 2020). The finalizing report will be submitted in the next reporting period.

Communication and visibility

Communication and visibility activities included actions regarding dissemination of project progress and active participation in Winter EcoMarathon. From November 2019 till March 2020 many public activities were organized within the Winter EcoMarathon in the framework of NarvaWatMan project.

The activities took place in two cities: Narva (Estonia) and Ivangorod (Russia). The main goal of the Winter EcoMarathon was to raise people’s awareness regarding environmental issues within the Narva River catchment area, including the investigation of Narva River water resources, nuclear pollution in its catchment area, ecological state of the Gulf of Finland, etc.

The EcoMarathon called “Drive Minoga” became the days of public environmental information and activity of citizens and youth:

- 12.11.2019 - Start of 2nd EcoMarathon (25 participants);
- 19.11.2019 - Interactive lectures with the municipalities of Narva (20 participants) - A.Reihan and M.Klõga (TalTech) visited Soldino High School with interactive lecture related to project activities and distribution of global water resources;
- 14. 02.2020 - a seminar for teachers with the municipalities of Ivangorod and Committee on Education Kingisepp District (70 participants);
- 11.02.2020 - Interactive lectures with the municipalities of Narva (20 participants) - M.Klõga and Yaroslav Kobets (TalTech) visited Narva Language Lyceum with interactive lecture related

to project activities and distribution of global water resources. During both visits (19.11.2019 and 11.02.2020) TalTech project partners were using materials for an interactive game, which were specifically developed by TalTech for this activity.

- 20-21.02.2020 - Open lecture in Ivangorod for schoolchildren (253 participants + 12 volunteers), interactive classes for youth (63 participants + 6 volunteers) and the active population (25 participants + 2 volunteers). 20.02.2020 Olga Zadonskaya (GGI) told about the hydrological features of Narva river for schoolchildren of 8th class of the School №1.

2nd EcoMarathon survey during the eco-events was made (forms were made taking into account different target groups). EcoMarathon registered 496 participants and 14 speakers.

Additionally:

- On 25.09.2019 A.Reihan (TalTech) participated in “European Cooperation Day” in Saint Petersburg, Russia with a presentation about NarvaWatMan project;
- On 11.10.2019 A.Reihan participated in “Enterpriser week” in Narva, Estonia with a presentation about NarvaWatMan project;
- On 23.01.2020 Toomas Pruul - expert working for the project, by the invitation of Mr Rein Peiker, the Chairman of the Narva-Jõesuu city council, presented the project activities and results in Narva-Jõesuu.

Associated partner 4 (Municipality of Narva city) informs the local population about activities and results in the local media and on their homepage:

<http://www.narva.ee/ee/searchs/index/NarvaWatMan>

On the Russian side information was also posted:

<https://ivangorod.press/novosti/v-ivangorode-proshli-uvlekatelnye-otkrytye-lektorii-foto/>

<http://ivangorod.press/novosti/proekt-narvawatman-jeto-interesno-foto/>

http://decommission.ru/2020/02/26/ivangorod_ecomarafon/