DEL005 - Water Quality Framework for DairyNZ

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On this site, the progress of the TKI-project will be described with regular updates (at least every three months).

Also the products (or links to the products) and other communications generated within the project will be presented on this site.

The main activities in the project are:

1. Set up of the coupling of WFLOW with a groundwater model. This does not cover the setup of a groundwater model for the catchment as such.
2. Temporal disaggregation of the WFD-Explorer model calculations. This will enable calculating on a more detailed level than the existing seasonal level (month, decade, week).
3. Set up of a Map Table application for the Hauraki Plains Catchment Modelling Framework. This interactive tool can be used in stakeholder workshops.
4. Improvement and extension of the functionalities regarding the report and output information of the WFD-Explorer.
5. Consultation and communication.

Progress:

2015 Q1:

- On February 2015 the contract of the project was signed.
- The project is planned in the period 1st March 2015 - 30th October 2015

2015 Q2:

- The project activities have started.
- A first demo of the map table was realized.
- A first draft project report has been delivered.
- Due to a delay of data delivery, the deadline of the project has been postponed.
- Internal demo for DairyNZ about the project.
- Setting up the hydrological model (WFLOW) and the connection with the WFD Explorer.

2015 Q3:

- Finalisation of the first version of the Delta Data Viewer (map table) application for the Waituna catchment, including measures and scenarios.
- Start of the activities to built the groundwater-surface water connection (WFLOW-MODFLOW).

2015 Q4:

- The project was presented at the Fresh Water Conference November 23-26, Wellington, New Zealand (see product 1).
- A WFLOW-MODFLOW case study has been carried out and the connection between the models has been realized.
- A short demo video about the Delta Data Viewer application (map table) was made (see product 2).

2016 Q1:

- The modeling framework has been finalized.
- Water quality simulations have been carried out on a monthly basis.
- Extra export functionalities are realized.
- An article about the project was published in the Deltares magazine Delta Life (see product 3).

2016 Q2:

- The project has been selected and published in the publication Deltares R&D Highlights 2015 (see product 4).
- The draft final report has been delivered. It takes some more time to finalize the report due to some restructuring of the report.
- The final version of the report is expected in Q3 2016.

2017 Q1:

- The report has been finalized.

Overview of outcome of the main activities of the project:

1. The coupling between the groundwater model (MODFLOW) and the surface water model (WFLOW) is worked out in a case study. This offers the possibility to use this connected models in projects in the Netherlands and abroad. The results of the fully worked out model coupling will be part of the open source Delta Shell Framework of Deltares and will be accessible for public use.
2. The temporal disaggregation has been realized. Calculations with the WFD Explorer can be made on different time scales. Within this project calculations have been made on a monthly basis. The flexible time scales are part of the release of the WFD Explorer 2.1, which has been made public available on February 1st 2016 on the site www.krwverkenner.nl.

3. The map table application has been realized as a Delta Data Viewer. DairyNZ will further work on this tool. Deltares has presented this tool in several meetings, what has initiated the idea to build a "Keukentafeltool" for regional use in the Netherlands.
4. New export functionalities, like bar charts and pie charts, have been realized in the software with the use of scripting techniques. In the release 2.2 of the WFD Explorer, which is expected by the end of 2017, this scripting functionality will be included in the software.
5. Communication about the project was done on this site, on the site www.krwverkenner.nl and by the products listed hereunder.

Products and communication:

1. Poster presented at the Fresh Water Conference November 23-26, 2015.

Interactive c... Nov 2015.pdf

2. Demo video of the Delta Data Viewer application.

waituna-ddv.mp4

3. An article about the project has been published in Delta Life No. 5 February 2016, see http://media.deltares.nl/deltalife/5/UK/#22 (for the English version) and http://media.deltares.nl/deltalife/5/NL/#22 (for the Dutch version).

4. An article about the project has been published in Deltares R&D Highlights 2015, page 46-47, see http://www.deltares.nl/app/uploads/2015/02/Deltares_R-D_Highlights_2015.pdf

5. The final report (for external distribution) has been made available.

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