



provincie **HOLLAND**
ZUID

Wageningen UR
Prof. dr. Ir. H. Rijnaarts
Bornse Weilanden 10
6708WG Wageningen

Onderwerp
Letter of Support Aquaconnect

Dear professor Rijnaarts,

Hereby I declare that we are interested in the AQUACONNECT research proposal. The Province of South-Holland commits itself to the research to support the NWO-TTW Perspective project P19-45 AQUACONNECT - Climate robust water provision and management for delta regions as described on www.nwo.nl/en/research-and-results/programmes/ttw/perspectief/2019-2020-p19-45.html and the proposal.

The Aquaconnect research proposal is consistent with long term provincial strategic challenges in areas like drinking water supply, sustainable horticulture and the energy transition. The province of Zuid-Holland is the most densely populated province of the Netherlands. With large parts of the province already situated below sea-level Zuid-Holland is very vulnerable for a further rise in sea level, increasing salinization and increasing extremes in the Rhine-Meuse river system.

In December 2018 the province published a new climate adaptation strategy "Weather resilient Zuid-Holland". The strategy aims at adapting the spatial design and use of the area of Zuid-Holland before 2050, to prevent future damage and to reduce health-, safety- and economic risks due to climate change.

To prevent future damage the province and its partners aim to climate proof the future supply of fresh water. On May 18, 2018 the province and other partners signed the COASTAR-declaration in which partners committed themselves to develop a knowledge programme COASTAR and to cooperate in improving the fresh water supply and fresh water management within the province of Zuid-Holland. The current COASTAR-project aims to develop new ways of using the subsoil for fresh water storage and clean brackish water as a new resource for drinking water.

The foreseen Aquaconnect NWO-project builds on goals set in the COASTAR-project and the fresh water policy of the province. Therefore the Aquaconnect research could, in addition to the

Gedeputeerde Staten

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Datum

Zie verzenddatum linksonder

Ons kenmerk

PZH-2020-751391268

DOS-2020-0005013

Uw kenmerk

Bijlagen

Bezoekadres
Zuid-Hollandplein 1
2596 AW Den Haag

Tram 9 en de buslijnen
90, 385 en 386 stoppen
dichtbij het
provinciehuis. Vanaf
station Den Haag CS is
het tien minuten lopen.
De parkeerruimte voor
auto's is beperkt.



COASTAR-project and studies on groundwater models, provide information to support future provincial policy decisions, The Aquaconnect research has a special focus on;

- Brackish water extraction in the Middelburg and Tempel polders and the dunes in South Holland;
- Aquifer storage and recovery in the Westland and Rotterdam area;
- Digital technologies for groundwater models;
- General research on environmental effects of brine disposal;
- Develop new technologies and methods for effluent use and societal risk assessment.
- Fit-for-purpose technologies.

Description of support of the Province of South Holland

The province has, based on the European Water Framework Directive (WFD) and national law, the legal obligation to achieve and maintain good quantitative and chemical status of groundwater. The province also has the legal obligation to set objectives for surface water, within the framework of the WFD. The new European regulation on minimum requirements for water reuse introduces a competent authority, as expected the province, to be assigned by the member state.

For reasons described above, the province is interested in and will commit itself to apply the results of Aquaconnect as a base for future provincial policy decisions. The province of South Holland has connections with the following Aquaconnect research topics divided over 3 workpackages.

Workpackage Digital technologies focusses on identifying new groundwater resources and determine the impact of its extraction:

- Combined climate and socio-economic scenarios on a regional scale;
- Identification of water demand in space and time for now and in the future based on political, socio-economic and climate drivers and techniques to optimize water distribution including storage and purification;
- Improvement of groundwater models that can seamlessly switch between different resolutions, in order to answer regional questions, but also to answer questions about local extraction and infiltration
- Improved predictions of vulnerable fresh groundwater resources through direct interaction between groundwater models and an optimized monitoring network through data model integration;
- Improvement of groundwater models on calculation speed and accuracy of results;
- Scalable models that connect of groundwater and surface water;
- Effects of brackish water extraction groundwater and brine infiltration in heterogeneous subsurfaces;
- Spatial optimization of infrastructure (including water sources, water storage, water transport) based on water demand and supply by accelerating models allowing optimization;

Workpackage Risk assessment of cyclic water systems that include nature-based treatment and storage and Workpackage Chemical and physical technologies for fit-for-purpose water supply:

- Effects of extraction of brackish groundwater and infiltration of brine on the quality of the subsurface, groundwater and surface water;
- Substantiation for effect studies in preparation for pilots and implementation brackish water extraction and infiltration of brine;
- Risk assessment strategies for water reuse, in accordance with the new EU regulatory framework;
- Fit-for-purpose treatment of water including brine: new materials for membranes for nanofiltration and ion and sodium selective removal.

Workpackage Freshwater provision governance:

- Identifying adaptation pathways for institutional change;
- Identifying successful examples of transition towards circular water governance;
- Identifying effective tools to facilitate this transition;
- Identifying ways to enable sustainable institutional changes
- Value of water for the regional economy;
- European laws and regulations in relation to the local context, including underground spatial planning

Financial support:

- In October 2020 Wageningen University will submit a grant application to the province. The provincial executive intends to grant a subsidy for a maximum amount of 75.000 Euro excl. VAT to Wageningen University/Environmental technology for the five year project, under the condition of approval by the states provincial and approval of the Aquaconnect projectproposal by NWO in spring 2021.
- We estimate an in-kind contribution of 80 hours per year to support the PhD's and Post Docs by delivering data, information, translation of the output from the research to the benefits of the Province of South-Holland and active participation in the User Committee. This represents 240 hours with a rate of 103 Euro/hour and 80 hours with a rate of €71 equals 30.740 Euro.

We have read and have been fully informed about the application. We state that we will actively participate in the User Committee (UC) established and that we will comply with the applicable terms and conditions for participation.

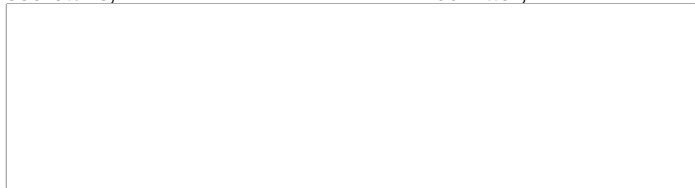
Furthermore, we are aware that the abovementioned project is part of the NWO Domain TTW
Perspectief programme.

Yours Sincerely,

Provincial executive of Zuid-Holland,

secretaris,

voorzitter,



drs. H.M.M. Koek

drs. J. Smit

We request you to mention the DOS code in your correspondence, which is included in the upper
right of this letter.