

Rwanda Water Platform Meeting

8 July 2021



Photo credit: Don Offermans

| Water Support Programme

Water Support Programme



Ministry of Foreign Affairs

NWP | Netherlands
Water Partnership



Netherlands Enterprise Agency

This platform meeting is part of the Water Support Programme (WSP), an initiative of the Dutch Ministry of Foreign Affairs (MoFA).

The programme is executed by the Netherlands Enterprise Agency (RVO) and the Netherlands Water Partnership (NWP).

Content

1. Water Support Programme	1
1.1. Overview	1
2. Rwanda Water Platform meeting	1
2.1. Overview	1
2.2. Key messages	1
2.2.1. Rwanda's water sector and the embassy's involvement	2
2.2.2. Flood modelling in Rwanda	2
2.2.3. IWRM experience in Rwanda	3
2.2.4. Feasibility of water supply in Rwanda's Volcanic Region	3
2.2.5. Climate resilient water supply in Rwamagana and Nyagatare	4
2.3. Closing remarks	5
Annex 1. Programme	6
Annex 2. Participant list	7
Annex 3. Q&A and discussion	8

1. Water Support Programme

1.1. Overview

The Water Support Programme (WSP) is an advisory programme established by the Dutch Ministry of Foreign Affairs (MoFA) and executed by the Netherlands Enterprise Agency (RVO) and the Netherlands Water Partnership (NWP). Through the Programme, the Dutch government supports Dutch Embassies in 11 partner countries to implement water programmes (Bangladesh, Benin, Ethiopia, Ghana, Kenya, Mali, Mozambique, Palestinian Territories, Rwanda, South Sudan and Yemen). The WSP builds long-term relationships between the local water sector and the Dutch water sector (DWS).

Each Embassy is supported by a Strategic Advisor on Water, knowledgeable about the local context and with the local networks. They are guided by sustainable development principles and act as a go between what is needed in partner countries and the Dutch Embassies, and between the Dutch Embassies and the DWS. They share information on the policy instruments in the partner countries and on the financial instruments available from the Netherlands.

2. Rwanda Water Platform meeting

2.1. Overview

As part of the Water Support Programme, a (physical) Rwanda Water Platform meeting was organised on 8 July 2021, at The Hague Conference Centre - New Babylon in The Hague.

The meeting updated participants on recent developments in the cooperation between the Netherlands and Rwanda and to discuss ongoing activities, ambitions and opportunities related to the water sector in Rwanda.

During the meeting Timmo Gaasbeek (Thematic Expert on Water with Netherlands Embassy in Rwanda) provided an update on Rwanda's water sector and Dutch involvement in the sector. This was followed by a series of presentations by the Dutch water sector, including: Bobby Russel (Senior Advisor with Deltares) on flood modelling in Kigali; Reinier Koster (Hydrologist with Future Water) on their IWRM experiences in Rwanda (e.g. using the Water Evaluation and Planning tool, WEAP); Ele Jan Saaf (Owner and Senior Consultant of Saaf Consult) speaking about the feasibility of water supply in Rwanda's Volcanic Region until 2050; and Siemen Veenstra (Regional Project Director Africa with Vitens Evides International) on climate resilient water supply in the secondary towns of Rwamagana and Nyagatare.

The meeting concluded with a networking moment.

The programme and participant list can be found in Annex 1 and Annex 2, respectively. The Q&A and discussion is further elaborated in Annex 3 and the presentations can be downloaded with the following link: <http://files.nwp.nl/extranet/RwandaPlatformMeeting20210708>.

2.2. Key messages

'There will be ample work in the water sector in the coming decades, however, finding the opportunities will be the challenge.'

2.2.1. Rwanda's water sector and the embassy's involvement

Netherlands Embassy in Rwanda

Covid-19:

- Rwanda has been doing exceptionally well in comparison to the rest of the world regarding Covid-19. However, in recent weeks cases have been going up and despite immediate responses by the government, cases are not going down, which raises concerns.
- Consequence of the Covid-19 response, which have been expensive, means the government is not in a good financial position compared to before the pandemic, which will have implications on long-term planning.

Water related opportunities:

- Growing urban populations, climate change impacts, agricultural (and irrigation) challenges will require long-term (water) investments.
- Consequently, there will be ample work in the water sector in the coming decades, however, finding the opportunities will be the challenge.
- Netherlands Embassy in Rwanda is phasing out the bilateral development cooperation in Rwanda in 2022. It is not clear what the implications will be (meetings like the Rwanda Water Platform meeting, may not be there anymore, so finding new ways to keep each other informed and up to date will be required).
- Engagement of the Netherlands Embassy in Rwanda will be more reactive than proactive.
- A Business Opportunity Report is being developed to provide a useful overview for the Dutch water sector on what is expected to come in terms of opportunities in the coming years.

Other donors:

- Potential funding through the United States who are getting back into climate and environment with the new administration.
- Other parties to keep an eye on are:
 - › Government institutions
 - › African Development Bank
 - › World Bank

2.2.2. Flood modelling in Rwanda

Deltares | [deltares.nl](https://www.deltares.nl)

Deltares expertise focuses on topics including:

- Flood risk
- Adaptive delta planning
- Infrastructure
- Water and subsurface resources
- Environment

Work of Deltares in Rwanda focuses on the identification and delineation of selected flood prone areas in cities, as well as simulating the impacts of selected urban wetland and drainage system interventions. Activities are funded through the World Bank Group.

Findings:

- Flooding will become worse in the future.
- A combination of traditional drainage, restored wetlands and sustainable urban drainage solutions can reduce flooding at key strategic locations.
- Integration of urban spatial planning, transport planning and flood risk assessment is a must.
- Flood monitoring is needed.
- Better mapping of the urban fabric is needed.

2.2.3. IWRM experience in Rwanda

FutureWater | futurewater.eu

FutureWater expertise focuses on topics including:

- Climate change
- Water productivity and irrigation
- Capacity building
- Mountain hydrology
- River basin management
- Water scarcity and drought
- Hydropower
- Ecosystem services

Integrated Water Resources Management and WEAP:

- Active in Rwanda since 2008, and in recent years close collaboration with the Rwanda Water Resources Board (RWB) and local partners focusing on Integrated Water Resources Management using the Water Evaluation And Planning (WEAP) tool for:
 - › Water balance modelling
 - › Water allocation modelling
 - › Capacity building
- IWRM challenges in Rwanda of (seasonal) water scarcity, economic development, population growth, energy production (hydropower), and protected and vulnerable ecosystems (wetlands) require an integrated approach, offered by WEAP.
- Example projects using WEAP:
 - › Water4Growth (2016): To effectively manage water resources to contribute to sustainable socio-economic development and equitably improved livelihoods.
 - › Biophysical assessment of Mukunga and Akagera Lower (Ongoing): To guarantee electricity production through hydropower.

2.2.4. Feasibility of water supply in Rwanda's Volcanic Region

SaafConsult | saafconsult.com

SaafConsult offer services throughout the whole project cycle from policy planning to final evaluation on topics including:

- Water and peace
- Water, livelihoods and climate change
- Water and nature
- Water supply and sanitation

Feasibility for Rural Water Supply in the Volcanic Region; funded through Develop 2 Build (D2B):

- Significant investments needed in making water available. There is no lack of water as a resource, but a lack of funds/priority to develop it.
- In some cases, water transfers from lakes such as Lake Kivu are a realistic option.
- Water allocation mechanisms need to be developed to rationalise allocations between all sectors (including agriculture), this has been the reason for SaafConsult's work on water spot and future markets.

Findings (from study):

- Up to 2024 water supply fully feasible, but requires investment, starting with the eight schemes developed as pre-design as part of the feasibility study funded through D2B (possible follow up through DRIVE).
- Up to 2050 water supply feasible, however this requires long-term investments.
- Population growth, urbanisation and competing sectors require close coordination on use of water resources.
- Role of PPPs and private sector investors can contribute significantly.

2.2.5. Climate resilient water supply in Rwamagana and Nyagatare

Vitens Evides International (VEI) | vei.nl

VEI expertise focuses on providing universal access to potable water to positively boost economic and social development of a region.

VEI is contributing to the Dutch commitment to support the provision and sustainability of water services in Rwanda through various initiatives including:

- Sustainable Water Fund (SWF) project in collaboration with National Water and Sanitation Corporation (WASAC), WaterAid and the Ministry of Infrastructure.
- WaterWorX (WWX) project in Aquavirunga.

Sustainable Water Fund project:

- Scaling universal access to safe and climate resilient water services in Rwanda, with focus on secondary towns in the Eastern Province (Rwamagana and Nyagatare).
- Addressing climate change impacts such as damage to infrastructure, increase water losses and contamination, rising production costs.
- Ambition is to contribute to the development of WASAC into an efficient water utility providing safe, reliable and sustainable water services. This is done by focusing on:
 - › Increasing access to safe and climate resilient water services and as such contribute to SDG6.
 - › Reducing Non-Revenue Water (NRW) to become an efficient and cost-recovery water utility.
 - › Developing and implementing Water Safety Planning (WSP) to ensure water quality and supply continuity.
 - › Developing a benchmarking framework to share and replicate best practices for scaling up (in other WASAC branches).

WaterWorX project:

- Water Operator Partnership between VEI (having taken over from Puur Water & Natuur; PWN) and Aquavirunga to improve water supply within the district of Rubavu.
- Project will be completed at the end of 2021.
- Ongoing activities include:
 - › The extension of the water distribution network.
 - › The improvement of the intake works of the water treatment plant.
 - › Possible rehabilitation of the Yungwe Bikore water treatment plant.

Findings:

- The Netherlands government is with its SWF program and the Dutch WWX program actively engaged and supportive to raise SDG6 coverage and operational maturity of the water service providers in Rwanda.
- With the careful selection of project partners, the opportunity is there to sort out 'pound wise impact' for 'penny wise input'. This is the "value for money" proposition.
- The question arises: what is to be the next level target of Dutch engagement towards 2030, 2050?
- The water sector of Rwanda develops into a mature institutional framework based on "checks & balances".

2.3. Closing remarks

With Dutch bilateral development cooperation phasing out in Rwanda, reflection is needed to ensure the knowledge generated in the many years of engagement remains available for Rwanda. There will be a substantial effort required in properly concluding the Dutch water effort in Rwanda while remaining realistic about what future engagement in Rwanda will look like.

For further questions, please feel free to reach out to Don Offermans (d.offerments@donofferments.nl) and Raúl Glotzbach (r.glotzabach@nwp.nl).

Annex 1. Programme

Time	Item
14:30-14:45	<i>Arrival and walk in</i>
14:45-15:00	Opening and introduction Don Offermans (Water Support Programme; Independent Consultant)
15:00-15:10	Update on Rwanda's water sector and the embassy's involvement Timmo Gaasbeek (Netherlands Embassy in Rwanda)
15:10-15:25	The modelling of flooding in Kigali Bobby Russel (Deltares)
15:25-15:40	IWRM experiences in Rwanda Reinier Koster (FutureWater)
15:40-16:20	<i>Discussion and break</i>
16:20-16:35	The feasibility of water supply in Rwanda's Volcanic Region until 2050 Ele Jan Saaf (SaafConsult)
16:35-16:50	Climate resilient water supply in Rwanda's secondary towns of Rwamagana and Nyagatare Siemen Veenstra (Vitens Evides International)
16:50-17:10	<i>Discussion</i>
17:10-17:15	Wrap up and closure Don Offermans (Water Support Programme; Independent Consultant)
17:15	<i>Networking moment</i>

Annex 2. Participant list

First name	Last name	Organisation
Organisers^o and speakers^s		
Don ^o	Offermans	Water Support Programme; Independent Consultant
Raül ^o	Glotzbach	NWP
Timmo ^s	Gaasbeek	Netherlands Embassy in Rwanda
Bobby ^s	Russel	Deltares
Reinier ^s	Koster	FutureWater
Ele Jan ^s	Saaf	SaafConsult B.V.
Siemen ^s	Veenstra	Vitens Evides International
Participants		
Albert	Thiadens	Mott MacDonald Netherlands
Anton	Lepelaar	Susteq B.V.
Auke	Boere	Resilience B.V.
Bernadette	Kawera	Bnexus
Brenda	Brouwer	Brenda Brouwer Consultancy
Chrétien	Hendriks	Genap BV
Franky	Li	Akvo
Hein	Gietema	CSC Strategy & Finance
Herman	Snelder	MDF Training and Consultancy
Jan Dirk	Smidt	Witteveen+Bos
Jasper	Donker	TNO
Kees	van 't Klooster	(Independent Consultant)
Leyla	Ozay	Commissie m.e.r.
Lisa	Umutoni	Rwanda Water Partnership
Nina	Jansen	2030 Water Resources Group/World Bank
Omer	van Renterghem	Ministry of Foreign Affairs
Peter	Bervoets	NWP
Peter	Boon	Gushikama Business Consult
Peter	Westerhuis	Van Essen Instruments B.V.
Teshome	Ghebtsawi	UWWM Consultants
Victor	Langenberg	Acacia Water B.V.

Annex 3. Q&A and discussion

Part 1

- To Deltares › Golf course in Kigali a big issue in terms of managing flooding...
 - » Yes, upstream of the second video shown during the presentation is the golf course as well as the new housing development area.

- To Deltares › Financial opportunities and the type of return on investments...
 - » Deltares was commissioned to look at flood hazard (where the water is going and the magnitude of the floods). Typically, when doing urban flood analysis, a hazard and risk analysis is done, where risk is the cumulative impact, which has a financial factor – i.e., how much damage is being caused by individual floods and what is the risk over a period of time (annual average losses). With an indication of the associated cost of floods for a city, measures can be looked at to see which measures are proportionate to the losses to assess the return on investment. Besides the financial side, you can also look at the number of people affected and as the cities grow, the return on investment will grow. In the Kigali case, solutions were already thought of and designed, the people moved, and then flood hazard was looked at. The flood risk has not been looked at yet.
 - » Not so much a return on investment but trying to have costs avoided.
 - » A decision has been made on the measure regardless of the return on investment.

- To the Netherlands Embassy in Rwanda (with input from the Ministry of Foreign Affairs and Resilience B.V.) › Ensuring a smooth transition and flow of information to other organisations so that there is not cut off-of what has happened over the last years (as the embassy will stop its funding on activities in Rwanda)...
 - » No clear solution yet, and the problem is that we are not just phasing out bilateral development cooperation, but some people will also leave the Embassy. Some will be maintained at the Embassy to look at the trade agenda which will offer contact points and the Embassy for the private sector.
 - » Need to look at others working in the water management sector, which is limited, so it is likely that it will disappear and that is part of the reality.
 - » Ministry of Foreign Affairs › The phasing out of bilateral development cooperation is something that has to be discussed in the coming month. The decision is politically driven; therefore, it is still unclear until a new cabinet is formed. There is still no concrete plan to tackle this.
 - » Resilience B.V. › Commissioned to do a Business Opportunity Report (BOR), however it is too early to say how this can play a role in the phasing out. The BOR is still in the first months of development. In the Rwanda Water Platform meeting, there is a lot of knowledge, it is also a matter of making sure that knowledge is collected in a cohesive and logical way and at the same time collecting other knowledge that provides new opportunities for water organisations in the Netherlands.

- To Deltares › Focus has been on flood modelling, any attention put on the impact of drought...
 - » Drought has not been taken into account in the modelling work that Deltares has been doing most recently. Deltares had a Rwandan student who did a modelling study of the entire Akagera catchment, looking mainly at future water availability taking into account climate change. This study was more from the perspective of developing irrigated agriculture in the eastern region of Rwanda which is the driest part of the country.

- » WEAP model is likely considering this problem of water availability.
- To Netherlands Embassy in Rwanda › Dutch knowledge available to Rwanda to help strengthen the Ministry of Environment and inform future investments by Multilateral Development Bank and private...
 - » Should keep promoting Dutch knowledge, however, to organise this will be a challenge with limited human resources at the Embassy.
 - » Rwanda is a country two thirds the size of the Netherlands, with a population two thirds that of the Netherlands, and a GDP the size of a medium sized city in the Netherlands. That means the ability to invest is constrained, especially after Covid-19. If funds need to be borrowed there needs to be a serious return on investment.
 - » Solutions we want to promote need to be affordable, this will be a different cost bracket that what the Dutch water sector is familiar with – A level of realism is needed.
- To Deltares › Confidence of climate and hydrological data in Rwanda, and how it affects the confidence of the flood model...
 - » Modelling done, especially the hydrological modelling, relies on global data sets (taken from remote sensing) as opposed to observed data. There is a workflow to avoid issues in data scarce countries. Deltares is fairly confident of that data, but is aware of the limitations, e.g., Rwanda experiences big unnatural spikes in rainfall so using this data in its raw form can result in overestimations by the model. Local rainfall data sets are used to correct for this bias.
 - » There are gaps in the local data available, so local data set is essentially infilling missing data.
 - » There is 1 gaging station which has been running for a number of years, however this was put in place for water resources monitoring, not for flood peak monitoring. The validation (confidence) in the model is not particularly strong because there are no continuous high frequency water level measurements.
 - » More monitoring is needed to give a stronger (international standard) validation.
- To Deltares › Agricultural land impact on flooding...
 - » In 2015 there was already an agricultural policy and irrigation plan which demarcated the entire flood plain (wetlands, papyrus swamps) as available for agricultural development, for commercial sugar plantations in particular.
 - » Going forward 6-7 years, the Ministry of Environment is recognising the importance of keeping the wetlands (which previously were converted into small holder plots) for their important ecological function. The Ministry is looking to restore all wetlands to have more ecological and flood reducing functioning.
- To Netherlands Embassy in Rwanda › Aside from the bilateral development cooperation programme, the Embassy is coordinating a regional programme for Great Lakes Region. Will that coordination continue...
 - » The regional programme will continue and stay in Kigali. The aim of the programme is to contribute to stability in eastern Democratic Republic of the Congo (DRC). While there will be some transboundary projects involving Burundi, Rwanda and Uganda, it will not be a source of funding for Rwanda.

Part 2

- To SaafConsult and VEI › FutureWater presentation spoke of hydropower and seasonal water shortages having an impact on energy production. With climate change, the

competition for water by different users will persist. Should greater focus be put on surface water storages for water utilities...

- » SaafConsult › In the volcanic regions there are large lakes with natural water storage already available. This will be an important source for future water supply.
- » VEI › Surface water is and remains to be an important source of water for water utilities and other users. Focus should be on creating buffering capacity and making sure at the small scale you collect and store water as a contributing factor.
- To VEI (with Deltares input) › Subsurface to ground water (aquifers) interactions...
 - » Interest in ground water has grown over the past 6 years. Very diverse situation in Rwanda when it comes to ground water.
 - » Water4Growth project:
 - Ground water monitoring initiated with wells constructed and equipped with monitoring equipment provided by van Essen.
 - The project also commissioned a large ground water investigation for the eastern region of Rwanda; the driest region (reports are available via the Rwanda water portal).
 - What has not been look at was ground water resources in the volcanic area.
- To SaafConsult › PPP and private sector possibilities and how to develop them further...
 - » Potential for water transfer from Lake Kivu to the north-western region. Looking at the land use and planning document of the Rwandan government, several activities are planned in the region, including industrial developments. Treatment and distribution (transport) of water from Lake Kivu offers a good opportunity that could be funded on a build, operate and transfer (BOT) basis by private sector (as done in many other countries) using new technologies with little investment and supplied to industrial users, urban centres and the tourism industry, who are able to pay.
 - » Spot and future trade opportunities in the east of Rwanda, where agriculture is more prominent, and the reliability of water availability is lower. Private sector can come in to increase the reliability of water availability for commercial use (less for rural or urban use).
- To VEI › Aquavirunga developments as part of WWX...
 - » Shareholder agreement with PWN who hold 51% of the shares; this structure still exists. On top of that the WWX programme was launched. Since 1 January 2021, WWX projects of PWN have been transferred to VEI, but the shareholder has remained with PWN. VEI is considering concluding and terminating the WWX project by the end of the year (or start of next year).
- To SaafConsult › Water quality challenges...
 - » SaafConsult › In the north-western region, water quality is hardly an issue as it is filtered through volcanic rock. It is tested on a periodic basis. Incidents of water borne diseases at small springs are extremely low. Water from lakes is a different story, however Lake Kivu water is surprisingly clean (50-70 meters deep) which requires basic treatment. The deeper you go the more dissolved minerals you find, and methane gas.