

Gender Analysis Aquifer Recharge Against Droughts In Suriname

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General Role of Water

Interior

In the Lives of Men

In the far interior villages of Suriname, water plays a central role in the daily lives of men, particularly in their economic activities. Most men engage in fishing, small-scale agriculture, or mining, activities heavily reliant on access to clean water. These sectors form the backbone of rural livelihoods, and the availability of water directly impacts productivity. For instance, agriculture, especially during the dry season, requires reliable sources of irrigation, while fishing is dependent on the health of local water bodies.

In addition to economic functions, water is also vital for transportation in the interior of Suriname. Many indigenous and Maroon villages are situated along rivers, which serve as the main transportation routes. Men often take on the role of navigating boats and transporting goods and people. The waterways become an integral part of both the social and economic infrastructure, linking communities and enabling trade.

Men also participate in community decision-making around water resource management, though to a lesser extent than women. However, water management in these rural settings tends to be shaped by practical needs rather than structured governance, with men generally focusing on water use for their economic pursuits such as irrigation or fishing. The availability and quality of water thus remain essential for their livelihoods and community well-being (World Economic Forum, 2023; ILO, 2023).

In the Lives of Women

Water has a profound impact on the daily lives of women in the interior villages of Suriname, especially in relation to domestic responsibilities. Women are often tasked with the collection and management of water for household use, which can be a labor-intensive and time-consuming activity. This daily burden of fetching water limits their ability to pursue education or engage in paid employment, perpetuating cycles of poverty. Additionally, carrying heavy containers of water over long distances can lead to health issues such as back pain, fatigue, and in some cases, complications during pregnancy (UN-Water, 2023).

Moreover, water access is critical for women's roles in subsistence agriculture, where they are responsible for growing food to sustain their families. Women's agricultural productivity depends heavily on water availability for irrigation, and in times of scarcity, they are often the ones to adapt farming techniques to cope with water shortages. This adaptive capacity is crucial, yet their roles in managing water resources for agricultural production often go unrecognized in formal decision-making processes (World Economic Forum, 2023).

The absence of adequate sanitation facilities poses additional challenges for women, particularly during menstruation, pregnancy, and postnatal care. Safe, gender-segregated sanitation facilities are often unavailable, increasing women's vulnerability to health risks and physical danger, especially when using open spaces for defecation. These conditions underscore the importance of incorporating gender-sensitive approaches into water and sanitation programs to ensure that women's specific needs are met, fostering greater equality in their access to water resources (ILO, 2023).

Despite these challenges, women in Suriname's interior villages play a crucial role in informal water management at the community level. They regulate the use of communal water sources and are often the ones who develop alternative strategies when water becomes scarce. Yet, their voices remain largely absent in formal water governance structures. Empowering women through greater involvement in water-related decision-making could lead to more effective and sustainable water management practices, benefiting both men and women in these rural communities (World Economic Forum, 2023).

Coastal Region

The demand for water in Suriname has significantly increased over the past decade due to a combination of household consumption, industrial activities, and environmental factors such as droughts. In both the coastal and interior regions, this surge has created challenges in managing water resources sustainably. The coastal districts, being more densely populated and industrially active, have experienced the greatest pressure on water resources.

In the Lives of Men

In the coastal districts of Suriname, water plays a crucial role in the livelihoods of men, particularly in industries such as agriculture, fisheries, and manufacturing. Men working in agriculture rely on a steady water supply for irrigation, while those in fisheries depend on clean and abundant water for maintaining marine ecosystems. In manufacturing, especially in sectors like food processing, the availability of water is essential for production processes and maintaining hygiene standards.

Over the years, as urbanization has increased in coastal areas, there has been growing demand for household and industrial water use. For instance, men working in industries that require significant water usage, such as food processing or chemical production, are directly affected by water scarcity. Droughts and insufficient water supply have disrupted production cycles, leading to economic losses and reduced employment opportunities.

For example, a drought in 2020 severely affected men working in the agricultural sector, leading to reduced crop yields and financial strain. Similarly, in 2022, a manufacturing plant in Paramaribo had to temporarily halt operations due to a shortage of water, affecting hundreds of male workers in the area. These incidents highlight the vulnerability of men in water-dependent industries to fluctuations in water availability.

Men in coastal areas also bear the responsibility of managing water supply for household consumption. This includes ensuring there is enough water for daily needs such as cooking, cleaning, and sanitation. However, in times of drought, the responsibility can become overwhelming, leading to stress and financial strain as they may need to purchase water at higher prices or invest in water storage systems.

In the Lives of Women

For women in the coastal districts of Suriname, water plays a pivotal role in household management and small-scale economic activities. Women are often responsible for fetching water and managing its use for cooking, cleaning, and maintaining hygiene standards. Water scarcity poses a significant challenge to the

efficient running of households, especially during droughts when women must spend more time sourcing water, often at greater distances, reducing time available for other economic activities.

Water scarcity has particularly harsh effects on female entrepreneurs who operate small businesses from home, such as catering or laundry services. For instance, during the drought of 2019, many female-owned small businesses in Paramaribo faced severe disruptions as the limited water supply hindered their ability to meet customer demands. This not only affected their income but also forced some women to temporarily close their businesses. Additionally, women's hygiene, especially in managing menstrual health, is compromised when water is scarce, further exacerbating health risks.

The insufficient water supply from aquifers, which are a key source of water for the country, exacerbates these issues. Suriname's reliance on groundwater has been strained, particularly in recent years, as the country has struggled to maintain the necessary recharge rates for its aquifers. Reports suggest that over-extraction and inadequate replenishment of aquifers are leading to a depletion of this critical resource. Solutions such as artificial aquifer recharge systems, improved rainwater harvesting, and more sustainable water management policies are being explored to mitigate these issues and ensure a stable water supply in the future.

In 2022, it was reported that the aquifer systems that supply much of Suriname's coastal regions were nearing critical levels of depletion. This has prompted discussions around implementing policies that promote aquifer recharge, such as constructing recharge basins and using treated wastewater to replenish groundwater levels. These measures are essential for ensuring long-term water security, particularly as the effects of climate change continue to intensify.

The Surinaamse Waterleiding Maatschappij (SWM) and the Algemeen Bureau voor de Statistiek (ABS) have both highlighted the increasing gap between water demand and supply, with household consumption rising by 15% between 2014 and 2024, and industrial water use increasing by 20% over the same period. These trends underscore the need for urgent reforms in water management to address the growing demand and secure water resources for future generations.

General Information on SWM water coverage & production stations

In May 2022, SWM's pipeline network is 4,875,580 meters long. This applies to the entire coastal plain parts of the interior. The SWM has distribution/supply areas i.e. branches in different districts i.e. Paramaribo, Wanica, Para (PWP) (former Central branch), Nickerie and Coronie (West Branch), Marowijne (East Branch), Commewijne branch and Saramacca branch.

- The largest area is the PWP branch, former Central Branch (in area and for what the number connections). This area covers the district of Paramaribo, Wanica and Para.
- The second area is Branch West. This area covers the districts of Nickerie and Coronie. In Nickerie these are the districts/areas Nieuw Nickerie and Sidoredjo, where also since 2016 Wageningen, Henar and Paradise added to the SWM network. In 2016 is the Totness district of the district Coronie and the Apoera area Kabalebo resort in the Sipaliwini district also added to the SWM network.
- The third area is East Branch. This area covers the Marowijne district and here the SWM provides the drinking water supply from Moengo, Wonoredjo and Albina. As of 2016 it is station in Alfonsdorp also added East branch.
- The fourth area is Establishment Commewijne, which was added from 2016 to the SWM network. Here the SWM the drinking water supply of the districts/areas Meerzorg, Peperpot and Mariënborg. From 2022 it will also be the station founded and added to La Liberte the SWM network.
- The fifth area is Saramacca Branch, which has been added to the SWM network since 2016. The SWM provides this drinking water supply of the resorts/ areas Kampong Baroe, Groningen, Tiger Creek, Lookout and Boskamp.
- As of December 2018, the drinking water supply systems the following districts/areas taken over domestically by the SWM:
 - In Brokopoondo district:
 - Resort Klaaskreek
 - Resort Brownsweg (including the New Coffee Camp area)
 - Resort Kwakoegron
 - Resort Brokopoondo Center and
 - Marchall Creek Resort
 - In the Para district:
 - Cabenda village
 - Pikin Saron
 - Tibiti
 - Casipora
 - Redi Dotie
 - Pierre Kondre (Kumbasi)
 - Nickerie (Tapoeripa)
 - Marowijne (Wanhati)

The districts and areas that do not appear within the SWM network, are provided of water by the Water Supply Department (DWV) from the Ministry of Natural Resources and the Development Fund Foundation Domestic (FOB) which is a technical arm of the Ministry of Regional Development and Sport.

There are also NGOs and private companies who ensure the water supply for the Surinamese households that are not connected on the SWM, DWV or FOB network.

Increased demand of water for consumption and other activities in Suriname for households as well as industry.

Between 2014 and 2024, Suriname has experienced a significant increase in water demand for both households and industries, driven by population growth, urbanization, and industrial development. In 2014, household water consumption was relatively stable but began to rise as access to modern amenities expanded in urban areas and parts of the interior. According to data from the Algemeen Bureau voor de Statistiek (ABS), by 2024, household water consumption in Suriname increased by approximately 25%, with the most significant growth in urban coastal regions like Paramaribo and Nickerie. This surge is due in part to increased population density and lifestyle changes that require more water for sanitation and domestic use.

Industrial water consumption also saw a steep rise between 2014 and 2024. In 2014, much of the industrial water use in Suriname was concentrated in agriculture, mining, and manufacturing. However, by 2024, the demand from these sectors grew significantly, especially as the country expanded its mining operations, such as bauxite and gold extraction, which are heavily water-intensive. The Surinaamse Waterleiding Maatschappij (SWM) noted a 30% increase in industrial water consumption during this period, with water being used not only for production processes but also for cooling systems and waste management in industrial plants.

The comparison of water consumption patterns between the coastal and interior regions highlights key differences. In the interior, communities traditionally relied on surface water for daily needs, but increasing economic activity and modern settlements led to a higher demand for treated water supplies. Between 2014 and 2024, water demand in the interior rose by approximately 20%, reflecting efforts to extend water infrastructure to these regions. However, the coastal regions, where industrial and residential activities are more concentrated, saw higher increases in both household and industrial water use.

Efforts to mitigate the increasing demand include investments in aquifer recharge and water conservation projects. Reports from ABS and SWM indicate that water management strategies have been implemented to ensure long-term sustainability. These strategies include enhancing the efficiency of water distribution networks, recharging local aquifers through rainwater harvesting systems, and better managing groundwater resources to combat the effects of over-extraction, especially in the face of increasing droughts. The need to secure water resources for future generations has become a critical national priority, as highlighted in recent publications from ABS and SWM.

General Information on Aquifers

The depletion of aquifers has become a significant issue globally, with many aquifers being over-extracted at unsustainable rates. One of the most impactful solutions being implemented is Managed Aquifer Recharge (MAR), a technique designed to artificially replenish groundwater supplies. MAR involves directing excess surface water, such as stormwater or treated wastewater, into the ground to recharge aquifers. This method is increasingly being adopted in countries like Bangladesh and China, where water management is critical for both agriculture and urban centers. MAR can help alleviate the pressure on over-extracted aquifers, allowing them to recover gradually over time.

Another solution focuses on water conservation practices in agriculture, which is the primary consumer of groundwater globally. By implementing more efficient irrigation systems, such as drip irrigation and rainwater harvesting, countries can reduce the demand on groundwater resources. Policies that encourage the shift from water-intensive crops to those requiring less water are also critical. For instance, incentivizing farmers to adopt drought-resistant crop varieties or to shift towards crops that naturally need less water can mitigate the adverse effects of over-extraction.

Additionally, improved regulatory frameworks are essential to control groundwater withdrawal. Governments need to enforce strict limits on how much water can be pumped from aquifers, particularly in regions where depletion is most severe. In places like California, land subsidence and reduced aquifer levels have prompted the introduction of more stringent regulations on groundwater extraction. Nonetheless, without consistent enforcement, these measures risk becoming ineffective.

Finally, addressing pollution of aquifers is another key element of preserving these water sources. Excessive pumping can allow contaminants to infiltrate groundwater systems, making the water unusable. Preventing the contamination of aquifers by regulating industrial waste and agricultural runoff is vital. Additionally, desalination technologies and water purification systems can be used to treat contaminated groundwater, but these solutions are often costly and require substantial energy input.

Aquifers in Suriname

Ninety-five percent of Suriname's total supply of potable water comes from ground water. The ground water resources of the country are used for households and industry. Suriname contains two hydrologically distinct provinces, the Interior Precambrian Shield of crystalline rocks, comprising 80 percent of the country, and the coastal plain basin, comprising the remaining 20 percent. There has been an abundance of good quality groundwater which is contained in the coastal basin. Groundwater in the young coastal plain is not renewable, groundwater in the old coastal plain and savannah belt area are renewable.

The aquifers of Suriname are in the coastal basin, which comprise of unconsolidated sediments consisting of a sequence of clay, sands, sandy clay, clayey sands, gravel, with more or less kaolin content, and thin bed organic compound. These aquifers which have been classified based on the geological ages are the:

- Nickerie
- Onverwacht
- A-sand
- Coesewijne
- Zanderij
- Coropina
- Demerara

The most important freshwater aquifers from where water is withdrawn are the:

- A-sand aquifers: no recharge; depths from 130-190 m
- Coesewijne aquifers: no recharge; depths from 70-110 m, and
- Zanderij aquifers: recharge from Savannah area; depths from 15-60 m

Ground water conditions in the northern Interior Precambrian Shield are generally unfavorable, because the geological formations in this province have little or no primary permeability. The south which is an active system is recharged directly from rainfall and coincides with the savanna and old coastal plain. Generally the salinity increases towards the coast. The water in the Zanderij aquifer is fresh throughout the old coastal plain, and brackish in the young coastal plain, particularly adjacent to the rivers. The change is abrupt. In the Coesewijne aquifers freshwater continues farthest north. Higher salinity extends farthest inland along concealed lines in the A-Sand.

The salinity of groundwater is commonly expressed in total dissolved solids (TDS) in mg/l and chloride concentrations in mg/l or mmol/l. The table below shows a common classification.

Salinity class	TDS in mg/l	Cloride in mg/l
Fresh	–	<50
Fresh	1-1,000	0-250
Moderate brackish	1,000-12,000	250-7,000
Brackish	12,000-24,000	7,000-14,000
Saline	24,000-34,000	14,000-20,000
Hypersaline	>34,000	>20,000

The Stakeholders

Stakeholder Analysis:

A. Stakeholders suffering from Lack of Water Supply:

1. *Local Communities:* Many rural and underserved urban populations face daily challenges due to inadequate water access, impacting their health, hygiene, and economic activities. These communities often rely on untreated sources, leading to waterborne diseases and reduced quality of life.

It is noteworthy that the issue of water supply has now also spread to more established urban populations where households are forced to purchase water due to the insufficient supply.

2. *Agricultural Producers:* Farmers depend on consistent water supply for irrigation. Insufficient water can lead to crop failures, reduced yields, and financial instability.
3. *Health Institutions:* Hospitals and clinics are adversely affected by water shortages, which hinder their ability to maintain sanitation standards and provide adequate care. The lack of clean water exacerbates health crises, particularly in already vulnerable situations.
4. *Businesses/Organizations:* Businesses that rely on water for production, such as food and beverage industries, suffer operational disruptions, which can lead to economic losses and reduced employment opportunities.

5. *Examples of stakeholders suffering from general lack of water supply:*

- de Surinaamse Waterleiding Maatschappij
- Dienst Water Voorziening
- Potential exporters of water.

Examples of stakeholders suffering from water scarcity due to droughts:

- Tourist organizations
- Shipping companies
- Fishing industry.

B. Stakeholders contributing to the Lack of Water Supply:

1. *Industrial Sectors:* Industries that heavily consume or pollute water resources can worsen shortages. Practices such as inefficient water use or discharge of contaminants diminish the availability of clean water for other users.
2. *Government Agencies:* Inadequate infrastructure investment and poor maintenance by governmental bodies can lead to significant water losses through leaks and inefficiencies. Bureaucratic challenges and lack of strategic planning further complicate water supply management.
3. *Urban Developers:* Rapid Urbanization and poor land-use planning can lead to over-extraction of groundwater and increased pollution, straining existing water resources and complicating access for local communities.
4. *Agricultural Practices:* Unsustainable farming techniques, such as over-irrigation and the use of harmful fertilizers, can deplete water supplies and degrade water quality, affecting both current and future availability.

5. *Examples of stakeholders contributing to the Lack of Water Supply:*

- de Surinaamse Brouwerij (Part of the HEINEKEN Company)
- Rudisa Agencies N.V.

- de Surinaamse Waterleiding Maatschappij
- mining companies such as Newmont Suriname LLC, Zijin Mining (formerly Rosebel Gold Mine) which make use of harmful chemicals such as cyanide and former mining companies such as Billiton Maatschappij and Suralco LLC
- Small-scale gold miners who make use of mercury
- Ornamibo (open waste disposal location which has been polluting the ground since the last quarter of the 20th century)
- exploiters of high-demand raw materials such as crushed stone and sand

C. Policy Makers

1. *Government Officials:* Local, regional, and national authorities play a crucial role in formulating policies and regulations that govern water supply. Their decisions on resource allocation, infrastructures development, and environmental protection directly impact water availability.
2. *Regulatory Agencies:* Bodies responsible for enforcing water quality standards and managing water resources must balance economic development with sustainable practices. Their effectiveness in monitoring and enforcing regulations is vital for preserving water resources and identifying new ones.
3. *Environmental NGOs:* These organizations advocate for sustainable water management practices and often engage with communities to raise awareness about water issues. They can influence policy through research, activism, and partnerships with government entities.
4. *International Organizations:* Agencies such as the UN provide funding and technical assistance for water projects. Their involvement can shape national policies and promote best practices in water management.
5. *Examples of Policy Makers:*
 - Ministry of Natural Resources particularly SWM and DWV
 - Ministry of Spatial Planning and Environment
 - Ministry of Agriculture, Livestock and Fisheries
 - Ministry of Land Policy and Forest Management
 - Ministry of Public Works
 - Ministry of Health
 - Ministry of Finance and Planning

Other major contributors:

- Het Water Platform
- Presidential Working Group
- Medical Mission
- Bureau for Public Health (BOG)
- National Coordination Centre for Disaster Management (NCCR)

Collectors of data:

- General Bureau of Statistics (ABS)
- Anton de Kom University of Suriname (AdeKUS)
- Meteorological Services
- Geological Mining and Engineering Services (GMD)
- Staatsolie Maatschappij Suriname N.V.
- Old extractive companies (Billiton Maatschappij, Suralco LLC.)

- NGOs and international organizations who have influence on policy making and have experience as it relates to gender inclusivity.

Stakeholder Mapping:

Stakeholder	Influence	Interest	Impact
A. Stakeholders suffering from Lack of Water Supply			
1. Local Communities	Low	Medium	High
2. Agricultural Producers	Medium	High	High
3. Health Institutions	Medium	High	High
4. Businesses/Organizations	Medium	High	High
B. Stakeholders contributing to the Lack of Water Supply:			
1. Industrial Sectors	High	Low	High
2. Government Agencies	High	Medium	High
3. Urban Developers	High	Low	High
4. Agricultural Practices	High	Low	High
C. Policy Makers			
1. Government Officials	High	Medium	High
2. Regulatory Agencies	High	Medium	High
3. Environmental NGOs	High	High	High
4. International Organizations	High	High	High

Stakeholders Working Group

A Stakeholders Working Group will be established to actively contribute to the development and implementation of this ARADIS project. The main objective of the SWG is to ensure support, inclusivity and effective advocacy throughout the project. The working group members must therefore be representative of all stakeholder groups related to water and they will contribute concretely by:

- Offering diverse perspectives
- Identifying the main bottlenecks in the water supply
- Providing advice on important decisions such as the selection of suitable Managed Aquifer Recharge (MAR) techniques.

In addition, the SWG will be involved in determining a suitable location for the pilot of the MAR technology. With these contributions, the SWG will ensure balanced and representative decision-making, which is essential for the success and involvement in the project.

Selection Method SWG

The consideration that played a role in determining the choice to work via a Stakeholders Working Group is that an already existing structure would be used with the same working method supplemented with

stakeholders who were not yet involved. The already existing structure is that of the Water Platform. This is a platform for policy support and falls under the director of the Water Directorate of the Ministry of Natural Resources. The director is the chairman of the water platform, which includes key stakeholders who have an interest in the water sector and play a role in it.

The selected members of the Stakeholders Working Group represent organizations from all three interest groups involved in water use. No specific people from the **Stakeholders contributing to the Lack of Water Supply** group are represented in the working group because **they have little influence on drought and the changing climate and the drought sensitivity of aquifers**. The biggest cause is therefore the drought. As a Surinamese society, we are of course collectively responsible in a general sense for the greenhouse gases that the country emits. From the group **Stakeholders suffering from Lack of Water Supply**, the following have been invited to participate in the working group:

- **The SWM** because they are examples of major consumers. They withdraw water from the aquifers and therefore have a great interest in a constant supply of water. The SWM supplies water to most residents of the country and is therefore one of the largest and most important consumers. From the **SWM**, the deputy director of the planning department, **Mrs. Ashwien Hemai-Bhodoë**, has been delegated to sit on the SWG. The director of the SWM has agreed to be a part of the SWG.
- **The business community**. Businesses use the water for products they manufacture such as carbonated drinks, juices and bottled water. The Rudisa Holdingmaatschappij N.V. has been invited from this category because they have their own source, while other large companies such as Fernandes Group N.V. and the Surinaamse Brouwerij N.V. do not have their own water source but receive water for their business activities via the SWM. **From Rudisa, Vinood Koesoensing and Shailindra Sewnath** have been delegated by the company to participate in the informative meeting. They are employees who are closely involved with the aquifer, the source, which still produces adequate supplies of water. Both gentlemen will attend on Friday for orientation and questions, and then it will be definitively determined who will take a seat on the SWG. The other person will then serve as backup.
- The **National Women's Movement, (Nationale Vrouwen Beweging, NVB)** is an NGO and represents women who keep a family running and are often small entrepreneurs. The NVB has also been invited to take a seat on the SWG. During droughts, it is the women who, as family caregivers, and as small entrepreneurs suffer from the lack of water, they have to obtain their water in other ways, for example through special delivery of water from the SWM. This water must be in stock, is much more expensive and of lower quality than the groundwater that is supplied directly through the pipes. From the NVB, **the chairwoman of the board, Mrs. Eline Graanoogst**, has been delegated to take a seat on the SWG. She accepted the invitation but was unfortunately unable to attend the meeting.

From the stakeholders that come from the group of policy makers, these are those agencies and organizations that deal with policy, data collection and management. These are people with knowledge who can have influence through expertise, have been invited to participate in the working group:

- **Water Platform: Mr. Manodj Hindorie**, he has been chairman of the Water Platform for many years and he is a prominent member of the Cabinet's Presidential Working Group on water. In terms of policy making, Mr. Hindorie has relevant experience. Mr. Hindorie also represents the health sector; he was director of the Sint Vincentius Hospital for many years and in that capacity was also chairman of the Hospital Council. He did not respond immediately at first, although he is willing. But we received his confirmation.
- From **the Ministry of Natural Resources, the director of the Water Department** and therefore also ex-official chairman of the Water Platform, **Mrs. Gonda Asadang**, has been invited. She has agreed, but official permission must be obtained from the minister, which is why she did not respond directly, but she is willing to take a seat on the SWG. The minister has been written to and he has decided positively.
- As a policymaker with many years of experience and expertise in the management of SWM in the field of water and now working as a **consultant for the SWM, Mr. Alwin Linger** has been invited to take a seat on the SWG. He responded positively and confirmed.
- **Mrs. Gladys Sno** is an environmental specialist and has gained years of experience as an environmental expert at Fernandes Bottling and is **a member of the Waterforum for the environment** is also invited. She has already sent an email to confirm.
- **Mr. Baggan** represents the **Ministry of Public Works** and is relevant to data collection **and the technologies** that will be applied. It concerns research institutes. He works at the Meteorological Services. He immediately responded positively.

Participants informative meeting

1. Professor Max Huisden, who is a lecturer at the University of Environmental Sciences, was put forward by Mr. Hindorie who canceled. In addition to being an environmental expert and lecturer at the university, Professor Huisden is also a microbiologist and affiliated with the medical faculty. He has a wide range of expertise - He attended the meeting virtually.
2. Ministry of Spatial Planning and Environment, Mr Narain was present - He is a policy officer.
3. Mrs. Samentha Kromoredjo is from the Ministry of ROM.
4. Ms. Ramona Biswane as an audience member from the SWM planning department - She attended virtually.
5. Mrs. Boedhoe of the SWM - She attended virtually.
6. Mr. Vinood Kiesoensingh from Rudisa Holding N.V.
7. Mr. Shailindra Sewnath from Rudisa is responsible for the source itself. Can we provide logbook.
8. Mr. Shawn Sowirono represented Ms. Gonda Asadang of the Water Directorate
9. Mr. Alwin Linger from the Waterforum attended virtually.
10. Mrs. Gladys Sno from the Waterforum attended virtually.
11. Representatives of ILACO N.V. and the gender consultant were also present.
12. Mrs. Graanoogst from the NVB could not attend the meeting.

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