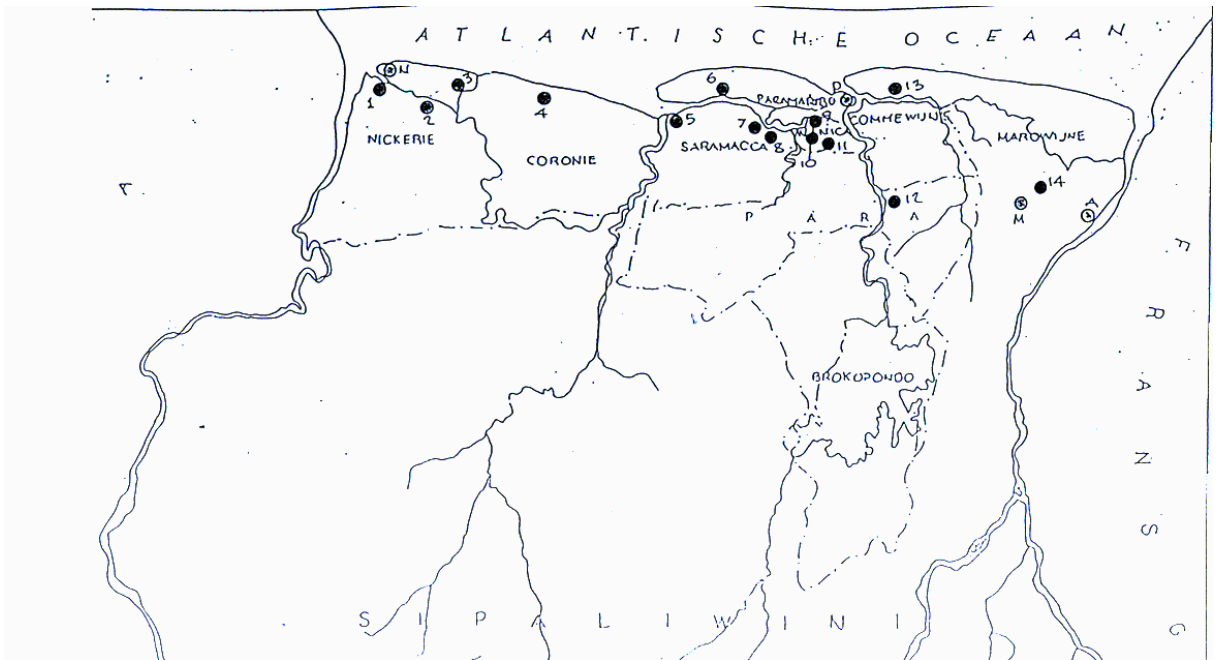


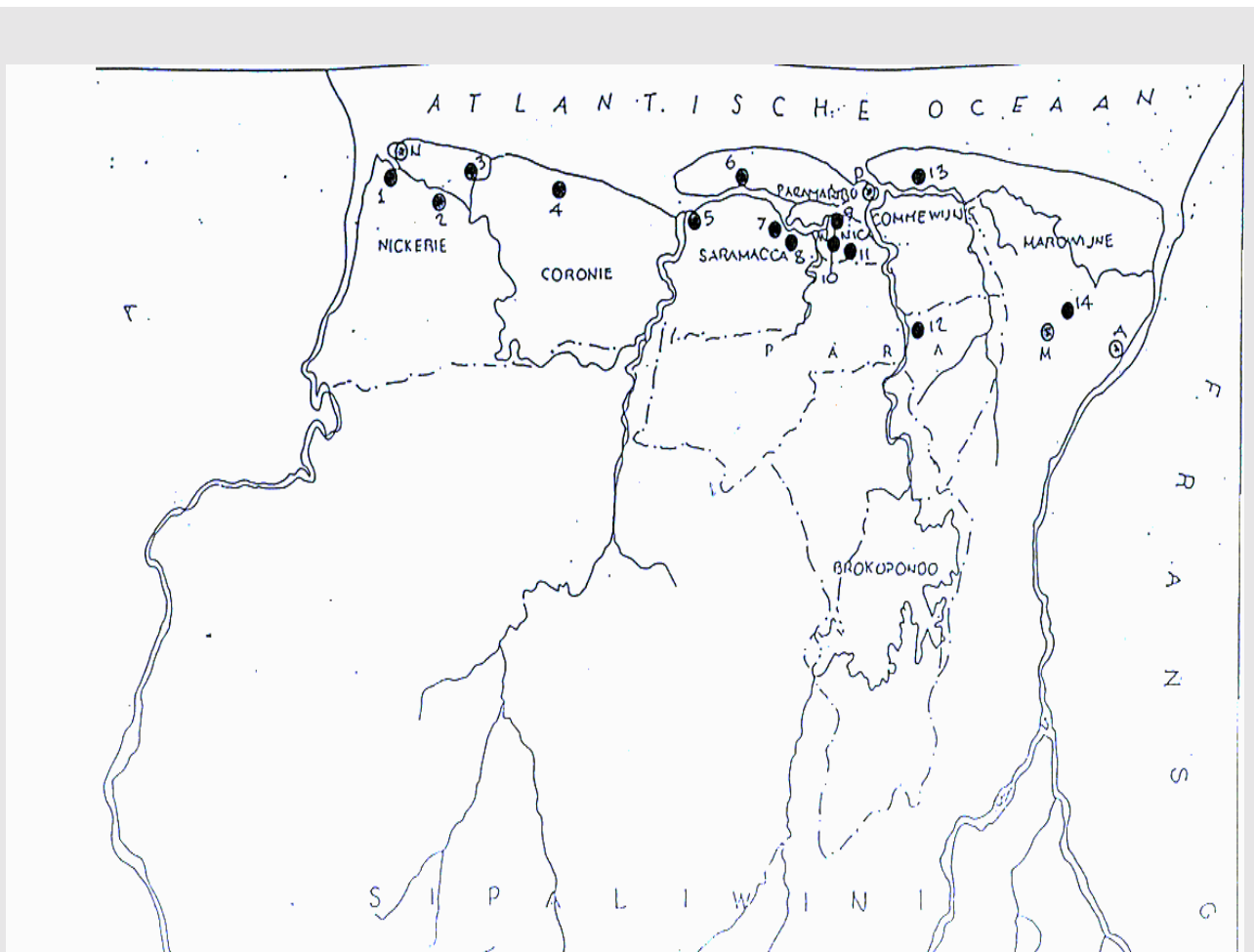
MASTERPLAN FOR THE COASTAL ZONE
(Medium term Investment plan 2010)



NV SURINAAMSCHE WATERLEIDING MAATSCHAPPIJ

Authors : Project team Master plan SWM

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Legenda

1. Nickerie West (Sidoredjo)
2. Nickerie East (Groot Henar)
3. Nickerie East (Paradise)
4. Totness
5. Boskamp
6. Peperhol
7. Groningen
8. Kampong Baroe
9. Wanica North
10. Wanica West
11. Wanica East
12. Para (North)
13. Commewijne (North)
14. Wonoredjo

- P. Paramaribo
N. Nieuw Nickerie
M. Moengo (surface water)
A. Albina

Framework

The Mid Term Study for the drinking water supply in the coastal zone of Suriname was drafted by the Surinamese Water Company SWM (= NV Surinaamsche Water Maatschappij) in January 1998 and last updated in September 1999. This Mid Term Study can be seen as the framework for the strategic policy of the SWM regarding the drinking water supply.

Based on the Mid Term Study an investment plan (known as Master plan) was drafted in 2002. The Master plan describes the necessary investments in the drinking water supply in the coastal zone of Suriname until 2010. In the Master plan several alternatives have been worked out, as well as their effect on the cost-price of drinking water.

The Master plan will lead to a structure (planning cycle) for the planning of investment projects and activities in the coming years, forming the input for the company's annual plans.

Policy and vision

In accordance with the policy of the Surinamese government the SWM aims at forming one water company in the coastal zone, supplying safe and potable drinking water, as soon as possible to as many people possible. Within her service area the SWM desires a coverage of **95%**.

One of the major advantages of one water company is the greater availability of ground water, achieved by taking over the service areas that neighbour the present service areas of the SWM and are managed by the Water Supply Service of the Ministry of Natural Resources. Greater Paramaribo for instance, with the capital Paramaribo, will greatly benefit from the available ground water in the neighbouring district Wanica.

To make this possible the Surinamese government must grant the SWM the legal concession for the water catchment and supply in the whole coastal zone. Also, legislation has to be drafted and implemented for the protection and management of ground water, which is the base material for drinking water.

The SWM will make every effort to get the necessary legislation passed and will also inform the Surinamese population about the importance of the protection and management of (clean) ground water, as well as the wise use of drinking water.

Regarding the personnel and administrative organisation the SWM has undergone a major development in the past years. A working Management Information System (MIS) is in place, used to assist the management of the SWM in formulating technical policies and defining annual goals. The MIS is also an important input for the prognosis of the (future) drinking water demand and the determination of the bottle-necks in the technical installations (drinking water infrastructure).

The SWM is an advocate of the sustainable use of ground water (purified with traditional water treatment techniques) and a drinking water quality that meets the standards of the World Health Organisation (WHO).

In the medium term SWM chooses groundwater as the base material for drinking water, because of its reliability and lower investment and operational treatment costs, compared to the costs of the treatment of surface water. In the long term, however, research has to be done regarding the use of alternative treatment techniques and surface water.

The water production losses are already maintained at the planned **5%**. The policy regarding the transportation, distribution and supply of drinking water is aimed at significantly reducing the so called Unaccounted for Water (UfW = the difference between the registered net production and the registered consumption by the customers) to no more than **25%**, preferably less.

The UfW is caused by damaged and unregistered watermeters, illegal service pipes, leakages, etc. The SWM aims at supplying its customers with drinking water during 24 hours per day, with a minimum end pressure of **6 mwc**.

The company's planned profits must cover the operational costs as well as the costs for replacement investments. It is therefore evident that the necessary improvements and expansions in the drinking water sector cannot be realised without extra financial contributions.

Assumptions and coverage

Based on technical assumptions, the MIS and data about the population growth, prognoses have been made for the drinking water demand, expressed in a desired coverage by the SWM of **95%** in its own service areas and **75%** in the areas now managed by the Water Supply Service, to be reached at the end of the planning period (2010).

This means that the production capacity has to be increased in all service areas in the coastal zone, with the most drastic increase in Greater Paramaribo. In the latter area an annual increase of at least **150 m³/hour** is foreseen until 2010. If warm and dry days are also taken into account, the extra production capacity may add up to **2500 m³/hour** in total.

Standardised formulas have been used in determining the necessary investment costs for the construction of treatment facilities, and transport and distribution pipelines. The results have been compared with already implemented investment projects and have been adjusted where necessary. In translating these investments to the cost price of drinking water the costs of maintenance, energy and personnel have also been considered. Cost price calculations have been determined, using common financial calculation methods. In accordance with international standards the cost price calculations are based

on drinking water being affordable up to a spending of no more than **5%** of the **minimum income**.

Bottle necks, investments and cost price

Despite the rehabilitation of a large number of production facilities of the SWM and the expansion of the production capacity in Greater Paramaribo, there are still installations working that have been written-off, financially and technically.

The major bottle-necks are the maximum available production capacity, the reliability of the distribution pumps, and the high salinity (especially at certain production facilities in Paramaribo and Nieuw Nickerie).

Besides investments in the production facilities, investments have to be made in the distribution as well. In parts of Paramaribo watermeters have to be replaced and leakages repaired.

In the service areas of the Water Supply Service the treatment facilities are incomplete and unreliable. In most systems the water supply comes to a complete halt when the treatment facilities have to be maintained or backwashed. Other problems are the high percentage of leakages, while certain areas suffer from salinity problems.

The investments needed to solve the bottle-necks and realise the necessary expansion of the production capacity have been calculated. For the area of Greater Paramaribo 4 alternative scenarios have been worked out.

The calculations show that for Greater Paramaribo and the neighbouring district Wanica **at least EURO 42 million** is necessary, resulting in an annual expansion of the production capacity of at least 150 m³/hour and a coverage of 95% by 2010. If possible small facilities with a salinity problem (high chloride levels) should be closed.

In the remainder of the coastal zone the investments add up to **at least EURO 23 million**, resulting in a coverage of at least 75% by 2010.

Cost price and financing

While supplying drinking water at a cost-effective and affordable tariff (5% of the minimum income) the SWM is able to finance a **maximum of EURO 26 million** through own means until 2010, with the assistance of its 2 sister water companies in the Netherlands (GWA and Vitens).

As commercial loans prove to be too high a risk, due to the high inflation rate and the relatively long write-off periods of drinking water installations, other forms of financing have to be considered, such as interest free or “soft” loans.

If the necessary financial means cannot be found, the SWM will not be able to take over the service areas in the coastal zone or expand its existing areas within the planning period until 2010.