

## TC ABSTRACT

### I. Basic project data

▪ Country/Region:	Suriname
▪ TC Name:	Assessment of Aquifer Potential and Groundwater Level
▪ TC Number:	SU-T1070
▪ Team Leader/Members:	Marcello Basani (Team Leader, WSA/CGY); Rodrigo Riquelme (INE/WSA); Marle Reyes (WSA/CGY ;) Carol Lieveld (CCB/CSU); Irene Cartin (INE/WSA); and (LEG/SGO)
▪ Indicate if: Operational support, client support, knowledge generation & dissemination.	Client Support
▪ If Operational Support, TC give number and name of Operation Supported by the TC:	NA
▪ Reference to Request: (IDB docs #)	38595143
▪ Date of TC Abstract:	February 14, 2014
▪ Beneficiary:	Republic of Suriname
▪ Executing Agency and contact name:	Suriname Water Company (SWM)
▪ IDB Funding Requested:	500,000
▪ Local counterpart funding, if any:	20,000
▪ Disbursement period (which includes execution period):	14 months
▪ Required start date:	October, 2014
▪ Types of consultants:	Firm
▪ Prepared by Unit:	INE/WSA
▪ Unit of Disbursement Responsibility :	CCB/CSU
▪ Included in Country Strategy (y/n);	Y (dialogue area)
▪ TC included in CPD (y/n):	Y
▪ GCI-9 Sector Priority:	Water and Sanitation Infrastructure

### II. Objective and Justification

- 2.1 The Government of Suriname (GOS) designated responsibilities for drinking water supply to two entities. Potable water supply in the districts of Paramaribo, Wanica, Para, Nickerie, and Marowijne (Albina and Moengo) is provided by the N.V. Surinaamsche Waterleiding Maatschappij (SWM, Suriname Water Company)<sup>1</sup>, a government-owned utility that supplies water to approximately 70% of Suriname's population. The Department for Water Supply under the Ministry of Natural Resources (DWV/NH) is responsible for supplying drinking water in the coastal rural areas and in the interior, which accounts for approximately 21% of the population of the country. Currently, SWM is in the process to take over some of the water supply coastal systems from DWV/NH. The Ministry of Natural Resources has the overall responsibility for policy direction of both institutions, and for overseeing service provision. In the absence of an independent regulatory body, the Council of Ministers approves tariffs.
- 2.2 Other agencies with responsibilities in the water sector include: (i) the Ministry of Health, which is in charge of monitoring environmental health; (ii) the Ministry of Agriculture, which is in charge of

<sup>1</sup> In the district of Para SWM provides water only in the Republic area.

irrigation; and (iii) the Ministry of Public Works (MPW) and the Ministry of Regional Development, which are in charge of drainage systems.

- 2.3 The water supply in Greater Paramaribo, the most populated area in Suriname, relies almost entirely on groundwater extraction, which represents about 85% of the overall groundwater exploitation in the country. The most important and most exploited fresh water aquifers are the A Sand aquifer, the Coesewijne aquifer, and the Zanderij aquifer. Several other aquifers are deemed not to be suitable for exploitation because of their size, their depth of the water table and the potential high levels of salinity. Therefore, one of the major difficulties in providing an appropriate and sustainable supply of potable water from groundwater resources is the uncertainty with respect to the safe yield of suitable aquifers for water supply.
- 2.4 The 2011 Suriname Water Supply Master Plan, financed through ATN/SF-11374-SU, identified clear signs of saline intrusion in the northern stations of the Greater Paramaribo area (A Sand and Coesewijne). The assessment revealed that the available groundwater yield in the Greater Paramaribo Area is conservatively estimated at 12,500m<sup>3</sup>/h for the next 15 years. However, after that length of time, this yield will have to be drastically reduced because of a salinity increase due to heavily exploitation of the A-Sand and Coesewijne aquifers, which are not recharged with new and fresh water as they are confined aquifers. In the long term, increases in the level of salinity intrusion will limit the yield of several fields.
- 2.5 Considering the extent of saline intrusion in surface waters along the coast, water supply for the coastal areas will continue to be met in its majority by groundwater. In order to protect and guarantee a reliable and affordable provision of potable water from groundwater resources, and to support the planning of future water supply development and improvement projects, the Government of Suriname requested to conduct a comprehensive dedicated hydrogeological study to evaluate the real groundwater level of the most vulnerable aquifers to evaluate their potential for supplying the total yield that would be required passed the period of 15 years.
- 2.6 The objective of this Technical Cooperation (TC) is to contribute to the provision of sustainable water services to the population of Suriname, through: (i) the assessment of the potential and groundwater level of the Coastal aquifer in Suriname; and (ii) consolidating the country's capacity on hydrogeological studies and aquifer management.
- 2.7 This TC is aligned with the Bank's Country Strategy (CS) for Suriname (2011-2015) that aims to supporting the transition to modern public governance structures, diversifying the economy, and expanding social benefits. Water and Sanitation is included in the CS as a strategic area of dialogue, with an explicit focus for inclusion in the technical cooperation program along the main strategic areas indicated in the CS. The TC is also aligned with the Ninth General Increase in the Resources of the IDB (GCI-9) lending target for the 2012-2015 period "Lending to support climate change initiatives, sustainable energy and environmental sustainability." Any future operation stemming from the study will also contribute to the lending target "Support development to small and vulnerable countries."

### **III. Description of activities**

- 3.1 **Component 1. Studies for the hydrogeological assessment of the coastal aquifer.** This component will finance the hydrogeological study required to improve SWM decision making capabilities to manage water resources and to protect and guarantee a reliable and affordable provision of potable water. The component activities will include: (i) exploration for groundwater

sources, incorporating the evaluation of aquifer potential; (ii) aquifer testing to determine hydraulic parameters and long-term abstraction; (iii) vulnerability assessments; (iv) groundwater quality determination and monitoring; (v) determination of sustainable groundwater supply volumes and cost-benefit models for groundwater supply; (vi) data modelling and scenario definition; (vii) sensitivity analysis; and (viii) proposal of an aquifer extraction plan for the next 20 years.

3.2 **Component 2. Capacity building activities on hydrogeological analysis.** Complementing Component 1, this component will finance capacity building activities within SWM. Activities will include: (i) definition and implementation of an aquifer simulation tool; (ii) training to SWM personnel on aquifer management; (iii) review of information systems on aquifer monitoring and data handling; (iv) improvement plan; and (v) implementation of information systems on aquifer management for SWM. Also, potential synergies with the University of Suriname will be identified to improve and consolidate the current country capabilities for the assessment and management of aquifers.

#### IV. Indicative Budget

Activity/Component	IDB/Fund Funding US\$	Counterpart Funding US\$	Total Funding US\$
Component 1. Studies for the hydrogeological assessment of the costal aquifer.	415,000	-	415,000
Component 2. Capacity building activities on hydrogeological analysis	70,000	-	70,000
Project Execution Unit (transportation, office costs, etc.)	-	20,000	20,000
Audits and Evaluation	15,000	-	15,000
Total	500,000	20,000	520,000

#### V. Executing agency and execution structure

5.1 The Executing Agency (EA) will be SWM, through a Project Executing Unit (PEU) within the Planning Department, which will be responsible for the overall administration of the proposed operation, including planning, budgeting, financial management, and implementation. SWM is knowledgeable of the Bank’s procurement and financial policies and procedures as it has executed ATN/SF-11374-SU and is currently executing 2451/OC-SU.

#### VI. Project Risks and issues

6.1 SWM is currently executing 2451/OC-SU, which minimizes the risks associated to the lack of understanding of the Bank’s policies and procedures. Considering the slow execution pace of such loan, the only risk is related to the need to execute the TC in a timely manner. The risk, however, is mitigated by the very limited number of procurement processes. Also, SWM will appoint a project coordinator to ensure proper and timely execution and coordination.

#### VII. Environmental and Social Classification

7.1 This TC has been classified as Category “C”. No environmental assessment or studies or consultations are required for Category “C” operations ([see link](#)).