



Draft Design and Monitoring Framework

Project Number: 28314
May 2008

Independent State of Samoa: Sanitation and Drainage Project – Supplementary Financing

A design and monitoring framework is an active document, progressively updated and revised as necessary, particularly following any changes in project design and implementation. In accordance with ADB's public communications policy (2005), it is disclosed before appraisal of the project or program. This draft framework may change during processing of the project or program, and the revised version will be disclosed as an appendix to the report and recommendation of the President.

Asian Development Bank

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
<p>Impact High standard of environmental quality and public health in Apia.</p>	<p>By 2012, a) the number of reported cases of typhoid reduces from 465 in 2006 to less than 300 nationwide b) the number of reported cases of gastroenteritis and diarrhea reduces from 1,093 in 2006 to less than 300 nationwide</p> <p>The average concentration of total coliforms in urban watercourses decreases from greater than 5,000 MPN/100ml (as measured over the period from 1993 to 2006) to an average of less than 250 MPN/100ml at any sampling location by 2012</p>	<ul style="list-style-type: none"> • United Nations Development Program Human Development Index reports • Ministry of Health annual health statistics • Urban stream and coastal water quality monitoring data 	<p>Assumption</p> <ul style="list-style-type: none"> • Continued commitment of the government and the community to maintain and improve urban drainage and wastewater infrastructure.
<p>Outcome Effective and sustainable sewage collection and treatment systems and less frequent and severe floods in Apia, through the provision of adequate wastewater and drainage infrastructure and effective wastewater and drainage planning and management.</p>	<p>By 2012, all premises in the greater Apia area have access to sewerage treatment and collection services provided by SWA.</p> <p>The frequency of flooding in the Fugalei area in Apia reduced from less than 1:1 Year ARI (baseline 2007) to 1:5 Year ARI by 2011.</p>	<ul style="list-style-type: none"> • SWA annual reports • Project quarterly Reports • Asian Development Bank (ADB) review missions • Rainfall and stream gauge data collected by the Ministry of Natural Resources and Energy • Ministry of Transport, Works and Infrastructure annual reports 	<p>Assumption</p> <ul style="list-style-type: none"> • Adequate budget available for drainage and wastewater infrastructure maintenance. <p>Risk</p> <ul style="list-style-type: none"> • Land acquisition for Community opposition to request for land acquisition necessitating compulsory acquisition through the "Taking of Lands Act.
<p>Outputs 1. Tertiary treatment of wastewater discharged from properties within the CBA and the Special Needs Area.</p>	<p>By 2011, 130 commercial and Government premises within the CBA and the Special Needs Area are connected to the Apia Sewerage System (Baseline 0).</p> <p>By 2012, the number of sewage overflows at consumers' properties does not exceed 10 occurrences in a 1 year period. (Baseline to be established during 2011)</p>	<ul style="list-style-type: none"> • SWA annual reports • WWTP monthly monitoring reports • Septic Tank Maintenance and Replacement monthly monitoring reports • Project Quarterly Reports • ADB review missions • Survey data of flood extents collected by the Ministry of Natural Resources and Energy 	<p>Assumptions</p> <ul style="list-style-type: none"> • Draft sewerage regulations are enacted and customers with access to the sewer network are obliged to connect. • Political commitment and community acceptance of the need for wastewater tariffs and environmental charges.

¹ The WWTP effluent discharge criteria refer to the average concentration over 12 months using data captured daily)

<p>2. Effective on-site wastewater treatment systems (septic tanks) for non-sewered areas within Apia.</p> <p>3. Effective drainage network and floodway system within the flood-prone areas of Apia.</p>	<p>By 2011, the Sogi WWTP the average daily volume of treated at the Sogi WWTP is 1 million liters (Baseline 0).</p> <p>By 2012, the WWTP effluent quality meets the following standards¹ : BOD₅: < 10mg/L Suspended solids: <15mg/L Total Phosphorous: <2mg/L Total Nitrogen: < 10mg/L Dissolved oxygen: >4mg/L Faecal Coliforms: <1.000MPN</p> <p>By 2012, 8,000 septic tanks located within the Apia urban area are maintained under the Septic Tank Maintenance and Replacement Program (baseline 2007 = 0).</p> <p>By 2012, the average concentration of faecal coliforms in urban watercourses does not exceed 30 MPN/100ml at any sampling location.</p> <p>Average duration of flooding within urban areas from more than 6 hours to 30 minutes or less.</p>		
<p>Activities with Milestones</p> <p>1. Drainage</p> <p>1.1 Design and construction and Fugalei pipe drainage system complete by 1 April 2009.</p> <p>1.2 Design and construction of Gasegase floodway improvement works complete by 1 April 2009.</p> <p>1.3 Flow gauging of urban streams within the Apia area and refinement of flood prediction models. (Ongoing, funded by the EU under the HYCOS program).</p> <p>2. Sanitation</p> <p>2.1 <i>On-site sanitation</i></p> <p>2.1.1 Rehabilitation of up to 500 septic tanks in low-lying areas of Apia complete by 31 December 2009.</p> <p>2.1.2 Sludge digester and disposal facility at Tafaigata commissioned by 1 July 2009. (Funded by the EU under the WASSP project).</p> <p>2.1.3 SWA managed Septic Tank Maintenance and Rehabilitation Scheme fully established.</p> <p>2.2 <i>Sewerage Scheme</i></p> <p>2.2.1 Sogi Waste water Treatment Plant commissioned by 1 April 2009. Ongoing operation and management contract for a term of 5 years.</p> <p>2.2.2 Pressure sewerage network commissioned by 1 April 2009.</p> <p>3. Capacity-Building and Project Implementation</p> <p>3.1 SWA wastewater utility twinning arrangement</p>	<p>Inputs</p> <p>ADB</p> <ul style="list-style-type: none"> • Original ADF loan of \$8 million • ADF supplementary loan of \$2.5 million • ADF supplementary grant of \$2.5 million <p>Government</p> <ul style="list-style-type: none"> • Government of Samoa's counterpart funding of: <ul style="list-style-type: none"> a) \$2 million for the original loan b) \$2.81 million for the supplementary financing 		

established by 1 September 2008. 3.2 Project Management Unit established and effective by 1 January 2006. 3.3 Project implementation consultants recruited by 1 May 2006.	
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ADF = Asian Development Fund, CBA = central business area, EU = European Union, HYCOS = Hydrological Cycle Observing System, SWA = Samoa Water Authority, WSSP = Water Sector Support Program.