

## Niue Project LogFrame 2012

<b>Project Goal</b>
<b>Sustainable protection and management of Niue groundwater resources and reef fishery for improved and sustainable livelihoods, ecosystems and environment</b>
<b>Project Objective</b>
<b>To develop an integrated resource management system that protects the groundwater aquifer from contamination and improves water resources management by users</b>

Output No.	Activity	Key Indicators	Means of Verification	Assumptions/Risks	Responsible Agency
	<b>COMPONENT 1: Ongoing sound, integrated, transparent governance of Niue's water resource</b>	<b>Establishment of an ongoing National Water Council (NWC) with public accountability</b>	<b>Cabinet endorsement of NWC</b>	<b>Political will and lack of enabling environment</b>	<b>Health – Environment-PWD and PMU</b>
1.1	<b>Output 1.1: National Water Council (NWC) Established</b>	<b>Establishment of NWC</b>	<b>Cabinet endorsement of NWC</b>	<b>Political will and lack of enabling environment</b>	<b>Health – Environment-PWD and PMU</b>
	<i>Indicative Activities</i>				
1.1.1	Develop governance framework for ongoing NWC, including Terms of Reference, roles and responsibilities and legislative and institutional links	Terms of Reference Roles and Responsibilities identified, including Agency roles and responsibilities	Cabinet endorsement	Political resistance to proposed governance structures; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy	National PMU
1.1.2	Secure sustainable financing (and institutional home) of NWC, Management Plans and other Project Outputs	Options assessment report Sustainable funding mechanisms endorsed by Cabinet Budget line attributable to IWRM and WUE	NWSC endorsement Cabinet endorsement and/or National budget	Political resistance to sustainable funding options. Potential politics of Agencies	National PMU- Treasury and Cabinet
1.1.3	Develop support structure for NWC, including an executive capacity and working groups (technical and village)	Executive support appointed and finance in place	NWSC endorsement Director endorsement	Capacity to attract and retain suitable candidates; Government agency support	Environment and Public Health-DJLS and GEF-IWRM
1.1.4	Establish NWC	Appointment of NWC members	Cabinet endorsement of NWC	Capacity to attract and retain suitable candidates	Health – Environment-PWD and PMU

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1.1.5	Raise awareness and develop skills of NWC	Project Monitoring and Evaluation framework for NWC	Cabinet endorsement	NWSC members can be retained	Environment and Public Health-DJLS and GEF-IWRM

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	<b>Component 2: Water Legislation, Policy and Planning measures</b>				
2.1	<b>Output 2.1: Review and update relevant national legislation</b>	<b>Review Draft National WR Bill and Regulations an Enact</b>	<b>Link National WR Act into National IWRM Framework</b>	<b>Implement the Act to protect the Niue's source of water supply</b>	<b>EU IWRM NWSC Crown Law Environment-Health</b>
	<i>Indicative Activities</i>				
2.1.1	Finalise Water Resource Bill linkage to IWRM Plan and NWC Functions and submit for enactment	Enactment of the Water Resource Bill	Water Resource Management Act, Progress report	Cabinet will endorse Bill and Assembly pass the Bill.	PWD - Water Supply, NWSC; EU IWRM
2.1.2	Establish a Water and Resource Policy Advisory Group to strengthen capacity on water policy and enforcement requirements	Increased awareness and understanding on water policy; increased compliance on regulations due to greater understanding and appreciation of the threats of contaminants for the under ground water.	Advisory Group minutes of meeting and delivered work plan; Progress report	Members effectively participate in the Advisory Group and membership is balanced with EU IWRM Support.	PWD - Water Supply, NWSC -PMU
2.1.3	Undertake at least 3 national capacity building workshops on water and resource policies.	Increased awareness and understanding on water policy within government, commerce and civil society	Workshop report(s) endorsed by NWSC, Financial statement, Progress report	Materials presented are balanced and easy to understand by all participants; externally funded so dependent upon co-funding body priorities, resources, etc.	PWD - Water Supply, NWSC-PMU
2.1.3	Investigate feasibility of an over-arching legislation for Niue natural resources, incorporating IWRM and climate change mitigation	Report completed and recommendation adopted	Report, Legislation endorsed by Cabinet	Personnel availability and consultant identified; political will; externally funded so dependent upon co-funding body priorities, resources, etc	PWD - Water Supply, NWSC; PMU-Policy Advisory Grp
2.1.4	Review and update relevant legislations to incorporate IWRM principles, in particular the water resource, access, usage and mitigating climate change impacts on water resources.	Review completed and endorsed by NWSC	Enactment of the Water Resource Management Bill, Progress reports	Cabinet will approve the Water Resource Management Bill and approved by the Niue Assembly; externally funded so dependent upon co-funding body priorities, resources, etc	PWD - Water Supply, NWSC-Policy Advisory Group
2.1.5	Develop policy measures and regulations as stipulated in the Water Act 2012	Policy measures and/or regulations drafted and approved by Cabinet	Progress reports, Cabinet Minute, Draft regulations and policy measures	Cabinet will approve the policy measures and proposed regulations.	PWD - Water Supply, NWSC-Policy Advisory Group
2.1.6	Develop groundwater protection zones (GPZ) for Alofi Catchment , with the view of developing a land-use plan	Groundwater Catchment Protection Zones established and accepted by Alofi community	Signage, guidelines and maps showing the Groundwater Protection Zones	Alofi community support ground protection zones; Community understand and support the concept of land use planning	PWD - Water Supply, NWSC,Policy Advisory Grp Alofi Community

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2.1.7	Draft regulations to guide the granting of licenses for abstracting water	Regulations established and endorsed by Cabinet.	cabinet minute, progress report	Policy and technical capacity - to draft sound regulations	PWD - Water Supply, NWSC-Policy Advisory Grp
2.1.8	Develop and conduct education and awareness on legislations, regulations, policies with some emphasis on enforcement. (refer to Component 6)	Improved awareness on water and related legislation, policy and regulations; improve compliance.	Workshop report(s) endorsed by NWSC, Financial statement, Progress report	Participants apply their newly found knowledge and understand to improve compliance particularly areas where limited enforcement have been applied.	Communication and awareness grp, NWSC
2.1.9	Develop Village Water Management Plan	Completion of Village Water Management Plan	Progress report, village water management plan endorsed by village and NWSC	Effective participation by community in developing water management plan for the village. Policy and technical capacity is available to support plan development	NWSC, Alofi Community
2.2.10	Niue Long-term Sustainable Integrated National Resource Management Strategies	Formulation of NWSC and act as a sustainable management technical advisory body of Niue Water Resource Management to Cabinet Ministers	NWSC members and TOR be included in the WR Bill as and legislated body of WR decision making	Members are from different sectors NGO Social Society _NGO and Government Organisation	HealthEnvironmentP PWD private Sector Cabinet
2.2.11	Develop Niue Water and Sanitation Indicators Framework	Complete of Niue Water and Sanitation Indicators Framework	Consultancy TOR included National Consultation workshops NWSC and NPMU endorsed Cabinet Endorsement	Effective participation by government and private sector including communities  Policies and technical capacity is available to support plan developments	PWD NPMU – Consultancy Govt & Private Sectors
2.2.12	Develop National Communities Water Framework for GEF Small Grants programs support	Complete National communities Water Framework for GEF Small Grant Program Support	Consultancy TOR Communities Consultation Workshop	Members are from different sectors NGO Social Society _NGO and Government Organisation  Policies and technical capacity is available to support plan developments	PWD/ NPMU Environment Village Councils
2.2.13	Develop Niue National IWRM Action Plan and Costed IWRM Action Plan	Complete Niue IWRM Action Plan and Costed IWRM Action Plan	Review exiting water plans including sanitations and findings under IWRM Demo  National Consultation Workshop	Policies and technical capacity is available to support plan developments	NPMU and Government Departments Cabinet
2.2.14	Develop National IWRM Overarching Strategic Policy Statement for Water and Sanitation	Complete National IWRM Overarching Strategic Policy Statement for Water and Sanitation	Review exiting water plans including sanitations National Consultation Workshop	Policies and technical capacity is available to support plan developments	NPMU and Government Departments Cabinet

Output No.	Activity	Key Indicators	Means of Verification	Assumptions/Risks	Responsible Agency
2.2.15	Develop National WUE Plan	Complete national WUE Plan	Review National Water system Loss management and conduct sector review of system for development WUE Plan Cabinet endorsed plan	Technical Capacity and Data available to support plan development	PMu and Government Sectors and Cabinet
<b>COMPONENT 3: Improved Management of hazardous and waste products to reduce risks of ground water contamination</b>					
3.1	<b>Output 3.1: Improved compliance of septic tanks as per approved effluent standards</b>	<b>Improve effluent discharge of all Septic tanks in catchment area</b>	<b>Septic tanks around catchment area meet standard</b>	<b>Risks on Groundwater contamination is reduce or minimised</b>	<b>Health – Environment-PWD and PMU</b>
	<i>Indicative Activities</i>				
3.1.1	Conduct inventory of septic tank compliance	Baseline data available on number of septic tanks and types, for all private households, commercial accommodations, businesses, and GON buildings; Inventory Report including GIS Mapping.	Public Health Inspections Report(s), Inventory Report supported by GIS, Progress reports	Task is relatively straight forward and permission provided for the inventory to take place.	Environment and Public Health-DJLS and GEF-IWRM
3.1.2	Review Niue Building Code effluent requirement and investigate option of developing standards for each zones (based on distance from water bore)	All new private houses, commercial buildings and Government buildings located at the catchment area should have a proper septic tank; Septic Effluent Standards for each zone are developed	Progress reports, establishment and approval of effluent standards for Alofi based on vulnerability to threats	Effective building inspection program in place; personnel and equipment available	PWD, NWSC
3.1.3	Carry out remedial actions and maintenance to reduce risk of septic overflow for dwellings/households located with the water catchment area (Kaimiti, Fualahi, Tuila and Toa areas).	Improved septic tank system for households located within water catchment area.	Progress reports, financial statements	Personnel and equipment available; householders supportive of process	Water Supply – PWD-
3.1.4	Conduct feasibility assessment of the current septic waste open landfill, and investigate appropriate long term solution	Feasibility Assessment report completed with long term solution for disposal of liquid waste identified.	Feasibility Assessment report, Progress report	Suitably qualified experts available to undertake assessment	Water Supply - PWD, Environment, NWSC
3.1.5	Develop guidelines for septic waste removal program and implement accordingly	Alofi community adopt and participate in the systematic septic waste removal program	Septic truck log book, Progress report	Septic truck available and operational	

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3.1.6	Conduct public awareness consultations on groundwater protection and threats of contaminations and septic maintenance - Refer component 6	Public meetings, awareness activities, media advertisements	financial statement, progress reports	Effective participation at the public awareness consultations.	Communication and Awareness Group = NWSC
<b>3.2</b>	<b>Output 3.2: Improve management of handling and disposal of domestic solid waste from households</b>	<b>Support Community and household with awareness on impact of waste to groundwater</b>	<b>Waste disposal away from catchment areas</b>	<b>Households awareness on groundwater vulnerability from waste disposal</b>	Health Environment IWRM PMU Community
	<i>Indicative Activities</i>				
3.2.1	Conduct situation analysis of appropriate disposal practices through consultation with Alofi District Community	Analytical findings of appropriate disposal practices of households and businesses and proposed recommendations in Alofi District	Study report approved by NWSC	Good representation of people attending the - community consultation(s).	Environment, NWSC
3.2.2	Conduct participatory planning of household handling and separation system.	A work plan of handling and separation system in Alofi District households.	Progress reports	Good representation of people attending the public consultation(s). Discuss with community best effective option / method to undertake	Environment, NWSC
3.2.3	Conduct feasibility study on establishing a Recycling Facility	Feasibility study completed.	Submit Report to NWSC and to Cabinet for endorsement	Partnership arrangement is secured for the waste management program	Environment, NWSC
3.2.4	Introduce and implement simple and practical methods to separate household/domestic waste for composting, recycle, and disposed at landfill	Domestic solid wastes are separated, collected and disposed according to agreed and work plan	Progress reports	Households actively participates in the programme; Collection bins are provided as part of the project, including training on collection and separation of waste for compost and/or recycling.	Environment, NWSC, DAFF
3.2.5	Implement recommendations Recycling Facility feasibility study and Construct medium scale recycling facility	Recycling facility operations developed and operated	Operation programs reported	Risks of funding secure for the construction and operations including human resource s	Environment-NWSC
<b>3.3</b>	<b>Output 3.3: Establishment of fuel and oil storage standards to reduce risk of groundwater contamination</b>	<b>Reduce threats of groundwater contamination from Fuel and waste oil storage</b>	<b>Appropriate measures in place for all responsible organisation</b>	<b>Awareness raising on groundwater vulnerability from fuel and waste oil contamination</b>	<b>NWSC –IWRM PMU and Niue Power-Bulk Fuel</b>
	<i>Indicative Activities</i>				
3.3.1	Conduct inventory of oil and fuel storage locations and risks in consultation with site managers/owners.	Oil and fuel imports and storage from Bulk Fuel, Niue Power and bowsers.	Inventory report, Progress Report	Stakeholders willingly participate and exercise is relatively straight forward	NWSC- PMU

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3.3.2	Address waste oil storage concerns by purchasing tanktainer(s) to store for final disposal, including constructing proper area for the tanktainer(s)/storage	Proportion of waste oil stored in a proper area in tanktainer and proper storage facility All waste oil is collected and stored	Financial Statement, Progress report	Current arrangements not feasible and carry high threats for the water lens. .	NWSC (assisted by Niue Power and Bulk Fuel)
3.3.3	Develop guidelines and/or standards for fuel and oil storage, including waste oil for Niue Power, Niue Bulk Fuel and private operators.	Guideline/standards on fuel and oil storage including waste oil	Guideline/Standards approved by Cabinet	Develop practical, affordable standards that adequately mitigate risks	NWSC (assisted by Niue Power and Bulk Fuel)
3.3.4	Facilitating guideline uptake through training and awareness raising	All fuel and waste oil storage facilities adopt the guidelines and standards for safe storage	Audit of fuel and waste storage facilities	All operators will adopt the standards/guidelines for the storing of fuel, oil and waste oil.	
3.3.5	Develop fuel and oil leak monitoring systems (in consultation with Niue Bulk Fuel General Manager and Niue Power General manager) supported by regulations	Organisation report with a certain degree of accuracy of the amount of fuel and waste oil spillage per month	Spillage reports, Progress report	Implementing partners (Niue Power and Bulk Fuel) undertake monitoring of leakages and report accordingly.	NWSC (assisted by Niue Power and Bulk Fuel)
3.3.6	Protection measures through construct concrete bund for Aviation fuel storage at Airport (Bulk Fuel)	Complete construction of concrete bund reduce risks of contamination from spillage	Activity completion report	Safe storage area for hazardous waste in catchment area	PM, Bulk Fuel and Privet Sector
<b>3.4</b>	<b>Output 3.4: Improve Management of handling and disposal of hospital hazardous waste.</b>	<b>Proper hazardous waste management in place for Niue Ffoo Hospital</b>	<b>Procedure and guidelines are followed</b>	<b>Risk of groundwater contamination is reduce by follow proper disposal procedure</b>	<b>Health-Environment –PMU and NWSC</b>
	<i>Indicative Activities</i>				
3.4.1	Assess all current hospital waste disposal system/arrangements and risks	Baseline data on amounts and types of hospital waste in a month	Report to the NWSC; project progress report	All waste disposed are recorded.	Health - Environment, NWSC, PMU
3.4.2	Develop a hospital hazardous waste management and disposal plan	Completion and implementation of the hospital hazardous waste management and disposal plan	Report to the NWSC; project progress report	Hospital staff willing adopt and implement hazardous waste management plan.	Health - Environment, NWSC
3.4.3	Develop database as a monitoring system for the disposal of all hospital hazardous waste by type of hazardous waste and form of disposal.	Baseline data on amounts and types of medicine, consumables equipments and materials, usage, and dispose; and form of disposal.	Annual Report to the NWSC; project progress report	Sufficient expertise and resources are available to develop and populate the database	Health - Environment, NWSC
3.4.4	Conduct in-house training of hospital staff on hazardous waste management and disposal requirements/practices.	Increase awareness of hazardous wastes and disposal practices	Report to the NWSC; project progress report	All staff attended and received training.	Health - Environment, NWSC, Communication and awareness group

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	<b>Component 4: Improved management of non-household chemicals, effluents and fuels</b>				
4.1	<b>Output 4.1: Incorporation of Standards and Compliance Requirements for Agro-chemical storage</b>	Standards of Safe storage re in-place	Agro-chemicals storage are safe and sound	Protection measures are follow and compliance with standard with public awareness	PMU_NWSC – Private Sectors and Community
	<i>Indicative Activities</i>				
4.1.1	Conduct inventory of agro-chemical storage facilities including outlets sell agro-chemicals	Baseline data on agro-chemicals imports, storage and sales	Inventory report, progress report	Private Sector willing to participate in the inventory	DAFF, NWSC
4.1.2	Develop guideline and/or standards for agro-chemical storage facilities including private operators within Alofi catchment area	Policy/Standards developed on agro-chemicals storage and usage.	Cabinet approval on standards/policy, progress report	Resources and capacity to develop practical cost-effective standards	Environment, DAFF (and NIOFA), NWSC
4.1.3	Develop relevant strategies to reduce threats of using agro-chemicals around the catchment area by local farmers	Reduce threats of pollution to the underlies groundwater lens within the catchment	Activity completion report, financial statement and progress report	Currently unfunded activity. Need to secure co-funding	DAFF, ENVIRONMENT, NWSC
4.1.4	Conduct public awareness programs targeting organic farming methods for reduced use of agro-chemicals, and standards for proper agro-chemical storage (refer component 6)	Increased awareness on organic farming and its principles;	Activity completion report, financial statement and progress report	Private sector and households participate and adopt principles of partnership for ongoing compliance	Communication and awareness grp, NWSC
4.2	<b>Output 4.2: Improved Piggery Facilities including Effluent Waste Management Program (DAFF to Confirm)</b>	<b>Reduce threats pollution of groundwater and coastal water from piggeries waste</b>	<b>Demonstrate other benefit of collect and reuse Piggeries effluent</b>	<b>Awareness on other benefit of utilising piggeries effluent and its benefits</b>	<b>PMU- NWSC DAFF households</b>
	<i>Indicative Activities</i>				
4.2.1	Conduct inventory of pig pens within the catchment area through GPS Mapping	Baseline data on No of pigs, sty's and location within the catchments area	Inventory report as a GIS Mapping. Report endorsed by NWSC	Households effectively participate in the activity	DAFF, NWSC
4.2.2	Develop standards and compliance requirements for pig pens and effluent disposal	Standards developed for pig pen and effluent disposal as per location	Cabinet Minute endorsing standards, progress report.	Households effectively participate in the activity; cabinet approve standards; policy and technical expertise available	DAFF, NWSC
4.2.3	Install tanks for piggery effluent collection tanks at piggery within the catchment area and undertake appropriate training on the usage of piggery waste collected	Piggery effluent tanks introduced and installed for piggeries located within catchment area	Activity completion report endorsed by NWSC	Sufficient resources available for tank installation; support from piggery operators	DAFF, NWSC, Water Supply
4.2.4	Develop piggery effluent management plan/program	Piggery effluent management plan/program introduced	Plan/program submits to NWSC for Cabinet endorsement.	It is possible to develop practical, affordable plan that adequately mitigate risks; resources and suitable personnel available	DAFF, NWSC, Water Supply



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4.2.5	Facilitating plan uptake through training and awareness raising	All collection piggery effluent operated in accordance with plan/program	Audit	Households adopt the management plan/program. Co-funded activity – dependent upon priorities of partner Agency	DAFF
<b>4.3</b>	<b>Output 4.3: Improved storm water/off-road drainage to reduce risk of coastal pollution</b>	Reduce affects on coastal waters marine life from direct flow discharge of sediments Volume of sediments collected	Appropriate sediments capture is constructed  Annual report endorsed by NWSC	Level of direct discharge of sediments to coastal areas is reduced	PWD, Environment and PMU
	<b>Indicative Activity</b>				
4.3.1	Assess the current storm water drain system(s) and identify vulnerable and high build-up of sediment areas	Assessment (and required solution(s)) completed	Progress report	Local personnel can undertake necessary assessment. External funding on much of this component means that delivery is outside of the control of the PMU	PWD - Water Supply, NWSC
4.3.2	Identify and carry out solution to remove or reduce build up of sediments if road run-offs on the coastal road, and thus reduce runoffs seeping down to the reef	Reduced number /volume of sediment build-up areas; (Refer also to activities under 4.3)	Progress report, activity completion report	External funding on much of this component means that delivery is outside of the control of the PMU	PWD - Water Supply, NWSC
	<b>COMPONENT 5: Improved water supply management to reduce peak demands and risk of saline up-coning</b>				
<b>5.1</b>	<b>Output 5.1: Reduced Peak Demand Abstraction Rate</b>	<b>Understand groundwater drawdown and water supply demand</b>	<b>Water Supply improvements reports in place</b>	<b>Water supply upgrades and improvements of equipments</b>	<b>Water Supply IWRM PMU</b>
	<b>Indicative Activities</b>				
5.1.1	(Purchase and install water meters at each water bore and storage tank) Investigate implement full system water loss management SOPAC/PWD at Paliati/Tuila Area, through installation of households water meter-Replication from Fualahi Households metering under SOPAC/PWD	Data on volume of water loss	Water use Report endorsed by NWSC six monthly	Water meters are available; personnel availability	PWD - Water Supply, NWSC
5.1.2	Develop database in form of GIS on water abstraction for each bore, sustainable yield, pump efficiencies, pump logs to strengthen SOPAC&PWD System Loss Management Plan	Data on the volume of water abstracted from each water bore and storage tanks reflected in Project reports and Department's annual report.	Progress Report, Divisional/Department Annual Report.	External funding and operation of databases is maintained	PWD - Water Supply, NWSC

Output No.	Activity	Key Indicators	Means of Verification	Assumptions/Risks	Responsible Agency
5.1.3	Develop database in a form of GIS on each storage tanks, effective storage, step test , area of coverage, demand and link with System Loss Management Plan and Niue Drinking Water Safety Plan (SOPAC/PWD).	Database developed	Progress Report.	Equipment and personnel availability	PWD - Water Supply, NWSC
5.1.4	Purchase materials for the construction of a new storage water tank.	New Storage Tank at Fou, Alofi North; new tank increase water supply volume to meet peak demand	Financial Statement and Progress Report.	Funds available and materials within budget	PWD - Water Supply, NWSC
5.1.5	Construct new storage water tank at Fou, Alofi North	Peak demand abstraction rate are reduced.	Progress Report, Divisional/Department Annual Report.	Landowner granted permission to construct new tank in the preferred location.	PWD - Water Supply, NWSC
5.1.6	Conduct public awareness on water usage and water wastage conservation measures (refer component 6)	Public awareness campaign	Progress Report	Baseline data on peak demand abstraction rate is available, and public will adopt water usage and wastage conservation methods.	Communication and Awareness Grp, NWSC
<b>5.2</b>	<b>Output 5.2: Reduced volume of water leakage in the Water Supply System and Households level.</b>	<b>Maintain continued supply of safe drinking water at all time to all sectors of society Reduce time of water supply interruptions 40% reduction in leakage</b>	<b>Six-monthly progress report endorsed by NWSC and Communities Water Supply operates efficiently</b>	<b>Availability of human resources and appropriate tools and equipments</b>	<b>Water Supply IWRM PMU and NWSC</b>
	<i>Indicative Activities</i>				
5.2.1	Strengthen and implement recommendation in SOPAC/PWD Water Demand-System Loss Management Plan for Tapeu-Alofi South and Paliati-Alofi North	Implementation of the Water Demand System Loss Management Plan	Progress Reports	Availability of equipment and personnel	PWD - Water Supply, NWSC
5.2.2	Conduct a survey to identify water leakages in the Alofi area (households, pipes and tank overflows)	Completion of the Water Leakage Report for Alofi area.	Progress report, Inventory Report; Divisional/Departmental Annual Report	Availability of equipment and personnel to undertake inventory.	PWD, GEF IWRM PMU NWSC
5.2.3	Develop a leak reduction program based on the survey findings.	Implementation of the Leak Reduction Programme	Leak Reduction Programme, Progress Report	Availability of equipment and personnel	PWD - Water Supply, NWSC
5.2.3	Undertake repairs on pipe leakages based on the leak reduction program	At least 75% of the identified Pipe Leakages repaired/replaced	Progress report; Divisional/Departmental Annual Report	Availability of equipment, machinery and personnel	PWD - Water Supply, NWSC
5.2.5	Investigate and implement best option to stop storage tanks overflows	Appropriate equipment install and operate	Progress report; Divisional/Departmental Annual Report, telemetry system and data	Availability of equipment, machinery and personnel	PWD - Water Supply, NWSC

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5.2.6	Procurement of underground pipe locator for GIS purpose of mapping Alofi water supply system for Village Water Plan	Procurement of underground pipe locator	Financial Statement, Progress Report	Cost of materials within budget	PWD - Water Supply, NWSC
5.2.7	Conduct public awareness and training on household water leakage and water conservation measures	Increased understanding on various measures of water conservations	Leaks reported in village inspection reports  Survey report endorsed by NWSC	Public accept and practice water conservation measures	Communication and Awareness Grp, NWSC
<b>Component 6: Improved water resource management measures</b>					
<b>6.1</b>	<b>Output 6.1: Comprehensive Water Bore Analysis and Monitoring Program</b>	Monitoring program established	NWSC endorsement of monitoring plan and monitoring reports	Resources available for monitoring	Water Supply and IWRM PMU
	<i>Indicative Activities</i>				
6.1.1	Install at least 6 multi-level piezometer nests for the monitoring of freshwater lens thickness, water level and salinity responses to recharge, abstraction, tidal and other influences	Procurement of multi-level piezometer nests	Financial Statement; Progress reports	Resources to procure and availability of driller	PWD - Water Supply, NWSC
6.1.2	Install multi-level piezometer nests	Multi-level piezometer nests installed	Progress reports	Installation is a straightforward process, and relevant machineries available and operational	PWD - Water Supply, NWSC
6.1.3	Procure and deploy groundwater monitoring probes for Alofi wellfield Piezometer nest	Groundwater monitoring probes deployed	Progress reports	deployment straightforward, equipment and personnel availability	
6.1.4	Develop a water bore analysis and monitoring program on Multi level piezometer nest	Water bore analysis and monitoring program established	Water bore analysis and monitoring reports, Progress reports	Piezometer nests are installed, vehicle, equipment and personnel availability	PWD - Water Supply, NWSC
6.1.5	Conduct periodic water bore analysis on the Multi level piezometer nest as required under the monitoring program and document results in report form	Water Bore Analysis Report; Improved stakeholder awareness and knowledge on status of water bore(s)	Water bore analysis and monitoring reports, Quarterly Progress reports endorsed by NWSC	Trained personnel collect data and analyse accordingly. <i>In-situ</i> probes continue to function	PWD - Water Supply, NWSC
6.1.6	Undertake groundwater assessment study on Alofi Well-field for Alofi Water Resource Management Plan	Completion of study and information incorporated in the Alofi Water Resource Management Plan	Alofi Water Resource Management Plan endorsed by NWSC, Progress Report	Personnel and/or expertise available and information collected is relevant for the Management Plan	PWD - Water Supply, NWSC

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6.1.7	Assessment infrastructure requirements to strengthen institution capacity on rainfall data, drought analysis and interpretation , etc	Infrastructure/equipment procured; Data collected from equipment strengthen information base on characteristics of thickness of freshwater lens, level and salinity for recharge, abstract, tidal and other influence	Supporting data for the activity 4.1.1, progress report endorsed by NWSC, financial statement	Appropriate infrastructure/equipment available; personnel available to collect and analyse data from HYCOS Program	NWSC, Niue Met
6.1.8	Investigate closed hand-dug well locate in Alofi Well filed for monitoring purpose-	Groundwater monitoring point option for Alofi Catchment-National Hydrology and climate monitoring site	Data capture and progress report	Strengthen national capacity in hydrology information-groundwater assessment data	PMU Niue Met/Water Div
<b>6.2</b>	<b>Output 6.2: Information on Production Bore Yield established.</b>	<b>Production bore yield established Monitoring program for pumping rates / pump efficiency &amp; groundwater level drawdown</b>	<b>Monitoring program endorsed by NWSC Bore yield report endorsed by NWSC</b>	<b>Standardise pump types Limited draw down level appropriate pump maintenance programs in place</b>	<b>PWD –Water Supply and IWRM PMU</b>
	<i>Indicative Activities</i>				
6.2.1	Develop a production bore yield test program on existing bore pumps for its efficiencies	Production bore yield program established	Progress report	Availability of equipment, machinery and personnel	PWD - Water Supply, NWSC
6.2.2	Determine and/or establish baseline data on production bore yield for the Alofi area and set up database on all pumps	Baseline data on production bore yield established	Progress report	Availability of equipment, machinery and personnel	PWD - Water Supply, NWSC
	Conduct six-monthly production bore yield tests as required by the program developed under 4.2.1.	Reports on production bore yield tests and bore pump performance	Reports on production bore yield tests endorsed by NWSC, Progress reports	Availability of equipment, machinery and personnel	PWD - Water Supply, NWSC
6.2.4	Document and disseminate results of the yield tests.	Reports on production bore yield tests	Reports on production bore yield tests posted on web and reports sent to all government agencies, Progress reports	Availability of equipment, machinery and personnel	PWD - Water Supply, NWSC
6.2.6	Develop Water Quality testing program for all bore pumps for any likely contaminants	Monitoring program established and adopted	Monitoring program reports endorsed by NWSC	Availability of equipment, machinery and personnel	PWD - Water Supply, NWSC
<b>6.3</b>	<b>Output 6.3: Comprehensive Water Quality Monitoring System</b>	<b>Water Quality monitoring programs in place and follow WHO Standards and Guidelines</b>	<b>Dissemination of results to relevant sectors and the cabinet Ministers</b>	<b>Information on water quality narrative reports available</b>	<b>Health Water Supply-NWSC</b>
	<i>Indicative Activities</i>				

<b>Output No.</b>	<b>Activity</b>	<b>Key Indicators</b>	<b>Means of Verification</b>	<b>Assumptions/Risks</b>	<b>Responsible Agency</b>
6.3.1	Undertake independent review Water Laboratory to verify accreditation and carryout recommended remedial actions	Water Laboratory meet minimum requirement of accreditation.	Independent consultant's report, Progress Report	Capacity, equipments and testing kits available for the water quality tests. Accreditation is largely externally funded, so beyond the control of the PMU	Health - Environment Division, NWSC
6.3.2	Investigate and establish relationship with international laboratory(s) in NZ for more comprehensive water quality testing and analysis	Established relationship with international laboratory	Agreement between Niue Health and international laboratory; progress report	Appropriate international laboratory will agree to provide assistance and relationship/agreement signed between two parties.	Health - Environment Division, NWSC
6.3.3	Determine baseline data of water quality of Alofi area water supply system	Water quality baseline data for each bore established.	Progress reports	Appropriate personnel, equipment and relevant testing kits available.	Health - Environment Division, NWSC
6.3.4	Develop water quality monitoring program for Alofi area (biological and chemical)	Program established.	Program established, progress report	Appropriate personnel, equipment and relevant testing kits available.	Health - Environment Division, NWSC
6.3.5	Explore and introduce of Patho Screen Field test Test Kit for Alofi community (100 test samples one per village)	Alofi Community confident with services provided by Government	Survey response endorsed by NWSC	Household understand and can carry out simple test. Community report any irregularities.	Health - Environment Division, NWSC
6.3.6	Conduct monthly water quality tests for Alofi Water supply system	Water quality test results	Water quality test results, progress reports	Personnel available to undertake tests	Health - Environment Division, NWSC
6.3.7	Develop appropriate parameters for coastal water quality monitoring	Parameters established and known	Database established on nutrient levels in Alofi Bay coastal area; progress report endorsed by NWSC	Baseline data available	Health - Environment Division, NWSC
6.3.8	Collect samples for external testing and analysis	Samples test and analysis reports	Progress reports endorsed by NWSC	Limited capacity to comprehensively test and analyse samples from coastal water areas.	Health - Environment Division, NWSC
6.3.9	Conduct public awareness (refer component 6)	Good understanding of Public on water quality and tests	Progress reports Survey (see later)	Information easy to understand and adopt	Communication and Awareness Group
6.3.10	Conduct assessment on coastal spring cave water, characteristics and linkages to water lens and coastal water	Information available on coastal spring cave water quality impact from household wastewater discharge, its characteristics and linkages to coastal water quality	Assessment report endorsed by NWSC, progress reports	Appropriate personnel, equipment and relevant testing kits available.	NWSC, Health, Environment and PWD-Water Supply
<b>6.4</b>	<b>Output 6.4: Improved Protection for Boreholes</b>	<b>Bore Pumps headwork's secure and control entry to all sites Security fencing all bore sites perimeters</b>	<b>Completion report endorsed by NWSC</b>	<b>Equipments and drinking water quality protection in place</b>	<b>PWD –IWRM PMU</b>
	<i>Indicative Activity</i>				

<b>Output No.</b>	<b>Activity</b>	<b>Key Indicators</b>	<b>Means of Verification</b>	<b>Assumptions/Risks</b>	<b>Responsible Agency</b>
6.4.1	Assess the status of borehole headworks and identify appropriate remedial actions to improve protection of borehole from local pollution and contamination highlight in the Niue Drinking Water Safety Plan Improvements Schedule	Assessment report on status of borehole	Assessment report endorsed by NWSC, progress report	Personnel, transport and equipment available	PWD - Water Supply-IWRM PMU
6.4.2	Develop costing for recommended remedial action and procure materials as required.	Costing identified	Financial statement, progress report endorsed by NWSC	Personnel available; materials available locally; budget able to cover costs of remedial works	PWD - Water Supply IWRM PMU
6.4.3	Carry out improvements for/on all boreholes headworks	Boreholes improvement work completed	Financial Statement, progress report endorsed by NWSC	Personnel, transport and equipment available	PWD - Water Supply-IWRM PMU
6.4.4	Assess the status of All Tanks sites headworks and identify appropriate intervention/actions to improve protection on Drinking water storage in all Public Water Tanks in Alofi- highlight in the Niue Drinking Water Safety Plan Improvements Schedules	Assessment report on status of all demo tank sites headwork's	Assessment report endorsed by NWSC, progress report	Personnel, transport and equipment available	PWD - Water Supply-IWRM PMU
6.4.5	Develop costing for recommended remedial action and procure materials as required.	Costing identified	Financial statement, progress report endorsed by NWSC	Personnel available; materials available locally	PWD - Water Supply-IWRM PMU
6.4.6	Carry out improvements for/on all Water Tanks headwork's	Improvement work completed	Financial Statement, progress report endorsed by NWSC	Personnel, transport and equipment available	PWD - Water Supply-IWRM PMU
<b>Component 7: Education and Awareness Program</b>					
<b>7.1</b>	<b>Output 7.1: Improved understanding and awareness on water, the threats and the policy environment.</b>	<b>Development of the National IWRM Communication Strategy</b>	<b>Public awareness campaign utilising communication strategies</b>	<b>Increase awareness and education on Water Resource Management in all level of society</b>	<b>NWSC Awareness and</b>
	<i>Indicative Activities</i>				
7.1.1	Establish a Communication and Awareness Group	Communication and Awareness Group established and endorsed by NWSC	Membership confirmed by NWSC, progress report	Members are representative of sectoral and government, private sector and community stakeholders	Communication and awareness grp, NWSC
7.1.2	Develop a Communication and Awareness Strategy for NWC	Improved understanding and awareness on water, threats and policy framework.	Communication Strategy endorsed by NWSC, Workshop reports, financial statements, surveys/questionnaire	Strategy is easy to understand and implement.	Communication and awareness grp, NWSC

Output No.	Activity	Key Indicators	Means of Verification	Assumptions/Risks	Responsible Agency
7.1.3	Implement Communication and Awareness Strategy, incorporating activities highlighted in components 1 - 5 above	Improved understanding and awareness on water, threats and policy framework.	Workshop reports, financial statements, surveys/questionnaire, progress report	Strategy complements the activities highlighted in components 1 - 5.	Communication and awareness grp, NWSC
7.1.4	Demonstrate improved community capacity and awareness in water use efficiency and water management	Household survey to establish baseline Survey to identify changes	Survey reports endorsed by NWSC	Community participation in surveys	PMU
<b>8</b>	<b>COMPONENT 8: Delivery of the Niue GEF IWRM Demonstration Project</b>	<b>Delivery of project activities on time and on budget</b>	<b>Quarterly, annual and end of project reports Audits</b>	<b>Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and natural disasters</b>	
<b>8.1</b>	<b>Output 8.1 Successfully managed project</b>	<b>Delivery of project activities on time and on budget</b>	<b>Quarterly, annual and end of project reports Audits</b>	<b>Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and natural disasters</b>	
	<i>Indicative Activities</i>				
8.1.1	Establish Project Management Unit	Recruitment of Project Manager and Project Assistant Establishment of a Project Management Unit Office	Signing of contracts	Capacity to attract/retain appropriate candidates	IWRM PMU- IWRM RPCU
8.1.2	Establish and support the National Water Steering Committee (NWSC), incorporating cross-sector, government, civil organisational, private sector and community representatives responsible for delivering the project, with public accountability	Establishment of the NWSC	Cabinet endorsement of NWSC and membership	Political resistance to proposed governance structures; Significant changes in enabling environment, including but not limited to political and financial stability, political commitment and changes in legislation and policy	Health – Environment-PWD and PMU
8.1.3	Attend regional meetings and workshops/training on IWRM matters	Niue comply with Regional IWRM project requirements; improved knowledge and understanding on threats and ways to control these.	Financial Statements, Progress reports	Niue will attend relevant regional meetings and/or training as invited.	PWD, NSWC
8.1.4	Develop and implement Replication Strategy	Replication Strategy	Endorsed by PSC	Capacity to identify lessons and appropriate replication mechanisms and tools	
8.1.5	Develop and implement Communication Strategy	Communication Strategy  Annual Reviews Annual events work plan	Strategy endorsed by NWSC Annual events workplan endorsed by NWSC	Capacity to identify all relevant stakeholders and most appropriate communication mechanisms	
8.1.6	Develop and implement Capacity Building Strategy	Capacity Building Strategy  Increased capacity across	Strategy endorsed by NWSC <b>Increased capacity?</b>	Willingness of stakeholders to engage Good communication with stakeholders on expectations and roles	

Output No.	Activity	Key Indicators	Means of Verification	Assumptions/Risks	Responsible Agency
		government agencies Increased capacity across stakeholders identified through workshop attendance and survey	Workshop reports Survey results		
8.1.7	Develop and implement Engagement Strategy	Engagement Strategy <b>Outcome?</b>	Strategy endorsed by NWSC	Good communication with stakeholders Willingness of community to engage	
8.1.8	Manage budgets, deliverables and timelines	Project delivered on time and on budget	Project quarterly and annual reports Audits	Further changes to GEF budgets or co-funding may compromise all three components. Risks identified above also likely to impact on budgets, deliverables or timelines	
8.1.9	Source additional funding to add value to project outcomes	Co-funding obtained to delivered unfunded project components	Project quarterly and annual reports Audits	Assumption that funding is secured prior to project inception. Inability to source additional funding will limit value-added project components	
8.1.10	Complete reporting commitments	Reporting commitments completed on time	Project quarterly and annual reports Audits		