



Grant Assistance Report

Project Number: 41578
July 2008

Grant Assistance Federated States of Micronesia: Weno Water Supply Well Remediation Project (Financed by the Japan Fund for Poverty Reduction)

Asian Development Bank

CURRENCY EQUIVALENTS

Currency Unit – United States dollar

ABBREVIATIONS

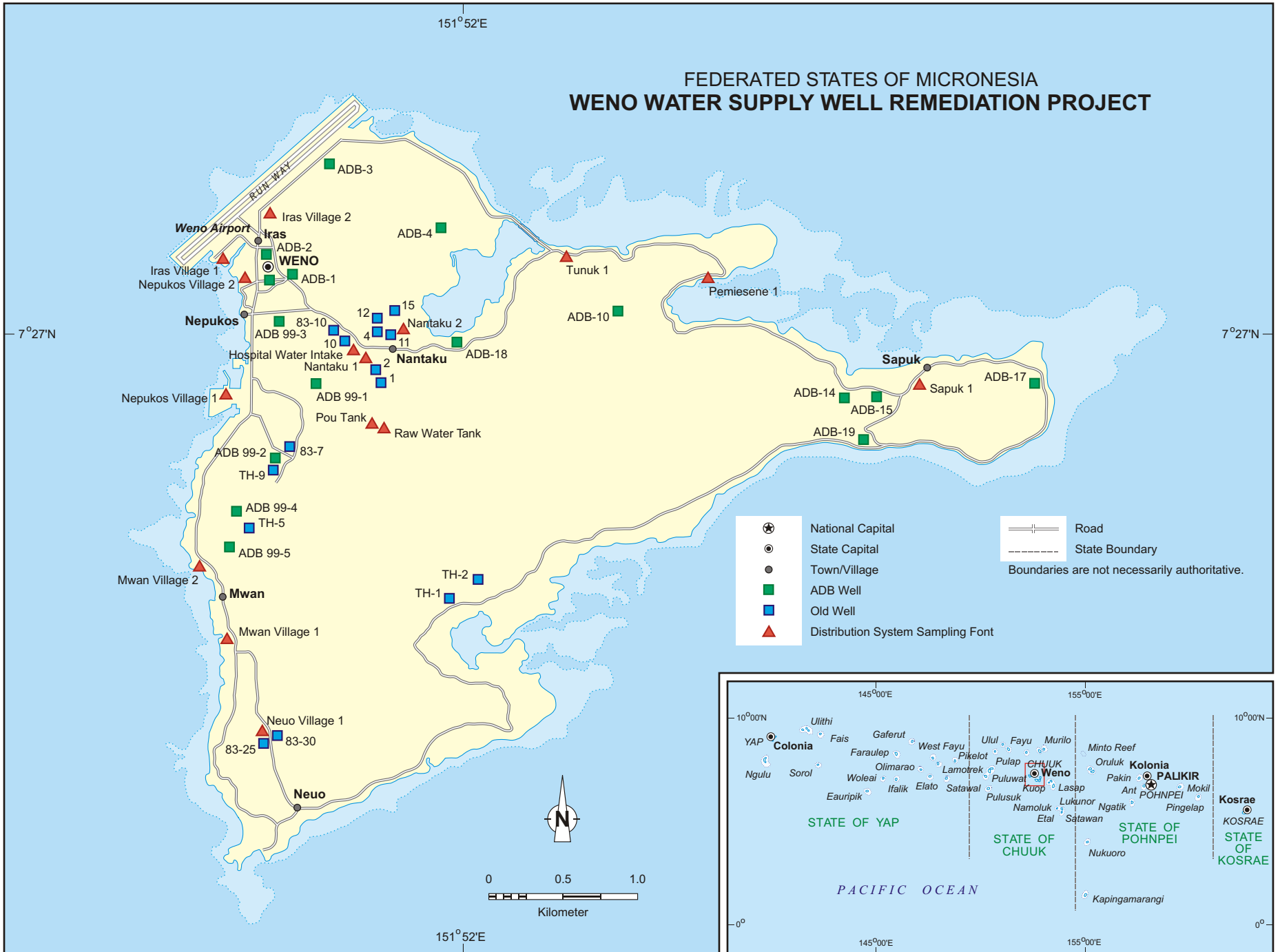
ADB	–	Asian Development Bank
BNPL	–	basic needs poverty line
C&P	–	consultation and participation
CEPA	–	Chuuk Environmental Protection Agency
CPUC	–	Chuuk Public Utilities Corporation
EA	–	executing agency
FSM	–	Federated States of Micronesia
GIU	–	grant implementation unit
HIES	–	Household Income and Expenditure Survey
IPIC	–	(Chuuk State) Infrastructure Planning and Implementation Committee
JFPR	–	Japan Fund for Poverty Reduction
NGO	–	nongovernment organization
PMP	–	preventive maintenance program
US	–	United States
WTP	–	willingness to pay

NOTES

- (i) The fiscal year (FY) of the Government ends on 30 September. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2008 ends on 30 September 2008.
- (ii) In this report, “\$” refers to US dollars.

Vice President	C. Lawrence Greenwood, Jr., Operations Group 2
Director General	P. Erquiaga, Pacific Department (PARD)
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Team leader	S. Blaik, Water Supply and Sanitation Specialist, PARD

FEDERATED STATES OF MICRONESIA WENO WATER SUPPLY WELL REMEDIATION PROJECT



JAPAN FUND FOR POVERTY REDUCTION (JFPR)
JFPR Grant Proposal

I. Basic Data

Name of Proposed Activity	Weno Water Supply Well Remediation Project
Country	Federated States of Micronesia (FSM)
Grant Amount Requested	\$980,000
Project Duration	3 years
Regional Grant	<input type="radio"/> Yes / <input checked="" type="radio"/> No
Grant Type	<input checked="" type="radio"/> Project / <input type="radio"/> Capacity building

II. Grant Development Objective(s) and Expected Key Performance Indicators

<p>Grant Development Objectives: The overall goal of the Project is to provide secure and safe water supply to the residents of Weno Island in Chuuk State. Specifically, the Project will (i) develop water demand forecasts for Weno Island up to 2020, identify potential sources of water to meet long-term demand, and undertake a willingness-to-pay (WTP) survey and a tariff study; (ii) increase the quantity of water abstracted from groundwater sources to reduce the gap between demand and supply; (iii) improve the quality of water delivered to water supply consumers through chlorination; (iv) decrease the incidence of waterborne diseases; (v) train water supply personnel to maintain the water supply wells; and (vi) increase community awareness on the need to use water wisely and to protect watersheds.</p>
<p>Expected Key Performance Indicators:</p> <ol style="list-style-type: none"> 1. Average per capita demand for piped water reduces from about 400 liters per person per day to less than 200 liters per person per day by 31 December 2010 following implementation of a public awareness campaign for conservation of water and to use water wisely. 2. Tariffs for the supply of water are progressively introduced from January 2009 to achieve full cost recovery of operation and maintenance costs by 31 December 2014. 3. Reactivation of nonfunctioning water supply wells on Weno Island, including: (i) six wells constructed under the Asian Development Bank (ADB)-financed Water and Sanitation Project,¹ and (ii) up to 14 wells constructed prior to the ADB-financed Water and Sanitation Project and a Water Supply Well preventive maintenance program established and fully implemented by 31 December 2010. 4. Increased average daily water production from 3.6 million liters per day (about 53% of average daily demand) to about 5.8 million liters per day (about 85% of average daily demand) by 31 December 2010. 5. All water supplied through the Weno water supply system is disinfected and potable, requiring the installation of 30 chlorination units for wells to be reactivated and for functioning wells by 31 December 2010. Currently, water abstracted from the water supply system is not disinfected.

III. Grant Categories of Expenditure, Amounts, and Percentage of Expenditures

Category	Amount of Grant Allocated in \$	Percentage of Expenditures
1. Civil works	\$179,000 ^a	18.27
2. Equipment and supplies	\$286,000 ^a	29.18
3. Consulting services	\$438,000 ^a	44.69
5. Training, workshops, seminars, and public campaigns	\$30,000 ^a	3.06
5. Contingencies	\$47,000	4.80
TOTAL	\$980,000	100.00

^a Excludes contingencies.

¹ ADB. 1996. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Federated States of Micronesia for the Water Supply and Sanitation Project*. Manila (Loan 1459-FSM and TA 2646-FSM, approved on 19 September).

JAPAN FUND FOR POVERTY REDUCTION

**JFPR Grant Proposal
Background Information**

A. Other Data

Date of Submission of Application	3 March 2008
Project Officer	Stephen Blaik, Water Supply and Sanitation Specialist
Project Officer's Division, E-mail, Phone	Pacific Department, sblaik@adb.org, +63 2 632 6127
Other Staff Who Will Need Access to Edit/Review the Report	Anthony Gill, Aivy Katherine dela Luna, Anand Chiplunkar
Sector	Water supply, sanitation, and waste management
Subsector	Water supply and sanitation
Theme	Inclusive social development
Subtheme	Human development
Targeting Classification	Targeted intervention (Millennium Development Goal 7)
Was JFPR seed money used to prepare this grant proposal?	Yes [] No [<input checked="" type="checkbox"/>]
Have SRC comments been reflected in the proposal?	Yes [<input checked="" type="checkbox"/>] No []
Name of Associated Asian Development Bank (ADB)-Financed Operation(s)	Water Supply and Sanitation Project (Loan 1459-FSM[SF])
Executing Agency	Department of Transport, Communications and Infrastructure
Grant Implementing Agency	Chuuk Public Utilities Corporation (CPUC) Tos Nakayama (Chief Executive Officer) PO Box 910, Weno, Chuuk State, FSM 96942, Telephone: +691 330 2401, +691 330 3279 E-mail: cpuc@mail.fm

B. Details of the Proposed Grant

1. Description of the Components, Monitorable Deliverables and/or Outcomes, and Implementation Timetable

Component A	
Component Name	Demand Forecast, Preventive Maintenance Program, and Tariff Study
Cost (\$)	\$144,000 (including contingencies of \$6,000)
Component Description	<ol style="list-style-type: none"> 1. Assessment of the existing average daily demand and demand patterns, including average daily per capita demand, for the Weno water supply network. Preparation of demand forecasts, including average daily per capita demand, for the Weno water supply network for 2008–2020 for high-, medium-, and low-demand growth scenarios. The demand forecasts will take into account changes in per capita demand resulting from tariff increases and the water conservation public awareness campaign. Preparation of a least-cost investment plan to meet demand up to 2020. 2. Design and initial implementation of a preventive maintenance program (PMP) for water supply wells on Weno Island. The PMP

	<p>will cover mechanical, electrical, and structural components, monitoring of water quality, periodic dosing of wells for control of iron bacteria, and monitoring of environmental factors within watersheds that could affect the quantity and quality of water abstracted from aquifers on Weno Island.</p> <p>3. In consultation with key stakeholders, including the national and state governments and CPUC, (i) identify the water supply sector's cost recovery objectives and targets; (ii) determine average financial tariffs necessary to meet operation and maintenance costs, debt service, and full cost recovery; (iii) using the outputs of the WTP survey (component B), assess the affordability of average tariffs, and develop tariff structures that ensure affordability of water supply services to low-income groups; (iv) develop sector financial projections and assess the ability of tariffs to meet cost recovery objectives; and (v) identify subsidies necessary to ensure the continued provision of services to the poor.</p>
Monitorable Deliverables/Outputs	<ol style="list-style-type: none"> 1. Reports providing details of the demand analysis, demand forecasts up to 2020, and a least-cost investment plan for the development of water resources on Weno Island. 2. Report detailing preventive maintenance procedures to be adopted and a long-term maintenance schedule (10 years).
Implementation of Major Activities: Number of months for grant activities	12 months

Component B (To be implemented concurrently with component A)	
Component Name	Public Awareness Campaign for Water Conservation and Watershed Protection and Willingness to Pay Study
Cost (\$)	\$98,000 (including contingencies of \$8,000)
Component Description	<ol style="list-style-type: none"> 1. Initial stakeholder analysis and development of a consultation and participation (C&P) plan. 2. Consultation with the national and Chuuk state governments, nongovernment organizations (NGOs), community service organizations, and the private sector for awareness activity preparation and implementation. 3. Design and implementation of a program to raise public awareness of water conservation, water supply systems, their needs and costs, and consumer responsibilities regarding water management. 4. WTP survey. The outputs from the survey will provide key data for the design of a tariff structure (component A). 5. Design and implementation of a program to raise public awareness on the importance of watershed protection and the impact of land use on the security of water quantity and quality. 6. Development and distribution of awareness materials through workshops, stakeholder meetings, and publicity campaigns.
Monitorable Deliverables/Outputs	<ol style="list-style-type: none"> 1. C&P plan. 2. Up to 10 community workshops and seminars. 3. Reports listing participants, proceedings, and outcomes of workshops, seminars, and meetings.
Implementation of Major Activities:	12 months

Number of months for grant activities	
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Component C	
Component Name	Well Remediation and Rehabilitation
Cost (\$)	\$484,000 (including contingencies of \$19,000)
Component Description	<ol style="list-style-type: none"> 1. Preparation of an initial environmental examination report covering all civil works described under component C to be submitted and approved by ADB and the Chuuk State Environmental Protection Agency prior to commencement of the civil works. 2. Cleansing and flushing of nonfunctioning water supply wells including chemical dosing for removal of iron bacteria and cleaning of borehole casings and screens. 3. Installation of pumps, new pipe work, and chlorination equipment. 4. Installation of electricity transformers and connection to electricity mains. 5. Construction of masonry buildings to house pump controls and chlorination units.
Monitorable Deliverables/Outputs	<ol style="list-style-type: none"> 1. Reactivation of 20 nonfunctioning water supply wells. 2. Average daily yield from groundwater sources increases by 2.2 million liters per day. 3. Chlorination units installed and activated at 30 water supply wells. 4. 20 pump houses constructed.
Implementation of Major Activities: Number of months for grant activities	24 months

Component D	
Component Name	Water Quality Monitoring Program
Cost (\$)	\$81,000 (including contingencies of \$6,000)
Component Description	<p>Water quality monitoring program inclusive of all sampling, laboratory testing, analysis of test results, and reporting of the quality of water abstracted from 10 well sites and from five sampling locations within the water supply network, for the following parameters and sampling/testing frequencies:</p> <ol style="list-style-type: none"> (i) total and fecal coliforms, biweekly over 6 months; (ii) conductivity and temperature, biweekly over 6 months; (iii) total nitrogen and total phosphorous, monthly over 6 months; and (iv) trace elements (lead, copper, manganese, calcium, iron, aluminum, Arsenic, mercury), bimonthly over 6 months.
Monitorable Deliverables/Outputs	<ol style="list-style-type: none"> 1. Biweekly field and laboratory test results and report. 2. Final report presenting all data collected, analysis of the results and trends in the contaminant concentration following reactivation of the wells, the design of an ongoing water quality monitoring program, and recommendations for future well operations and source treatments.
Implementation of Major Activities: Number of months for grant activities	6 months, commencing after the reactivation of the six nonfunctioning wells constructed under the ADB-financed Water and Sanitation Project (footnote 1).

Component E	
Component Name	Project Management
Cost (\$)	\$173,000 (including contingencies of \$8,000)
Component Description	A consultant will be recruited to manage and supervise project implementation.
Monitorable Deliverables/Outputs	Inception report, quarterly reports, annual report, completion report, bid documents, bid evaluation reports.
Implementation of Major Activities: Number of months for grant activities	8 months of intermittent inputs provided over 36 months.

2. Financing Plan for Proposed Grant to be Supported by JFPR

Funding Source	Amount (\$)
JFPR	980,000
Government of the Federated States of Micronesia	35,000
Chuuk Public Utilities Corporation	400,000
Total	1,415,000

3. Background

1. The lack of an adequate water supply to the population of Weno Island is one of the highest priority issues of Chuuk State government and the Government of the Federated States of Micronesia (FSM). A number of projects to improve water supply service on Weno Island, including the ADB-financed Water Supply and Sanitation Project,² have not successfully addressed the island's need for water in terms of both quantity and quality.

2. Water supply services on Weno Island are provided by Chuuk Public Utilities Corporation (CPUC), a state-owned enterprise of Chuuk State government. CPUC is unable to charge tariffs for water as the level of service and the quality of water delivered is poor and consumers are unwilling to pay for service. Chuuk State government is enduring a lengthy financial crisis and is unable to subsidize water supply operations fully. The inability of CPUC to charge water tariffs and Chuuk State government's inability to provide adequate funding for the provision of a reliable and safe water supply has meant that routine functions (such as disinfection of water prior to distribution and routine maintenance) are no longer undertaken because funds are unavailable. Consequently, water supply wells have progressively failed and the water delivered by Weno water supply is not potable.

3. Target 10 of the Millennium Development Goals is to "Halve by 2015 the proportion of people without sustainable access to safe drinking water and sanitation". On Weno Island, most residents have limited access to either safe drinking water or sanitation, particularly the poor. Access to safe water and sanitation facilities is fundamental for good health and is a key issue for poverty alleviation. The 2005 FSM Household Income and Expenditure Survey (HIES) estimated that over 59% of poor households in Chuuk State relied on individual wells for household water.³ On Weno Island, the reliance of the poor on individual wells can be partly attributed to the frequent and lengthy disruptions of the island's water supply. More than 39% of the poorest households in Chuuk State do not have access to improved

² ADB. 1996. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Federated States of Micronesia for the Water Supply and Sanitation Project*. Manila (Loan 1459-FSM and TA 2646-FSM, approved on 19 September). Implemented during 1998 and 1999).

³ United Nations Development Programme. 2007. *Analysis of the 2005 Household Income and Expenditure Survey*. Suva, Fiji Islands (draft report).

sanitation facilities. On Weno Island, septic tanks and pit toilets are widely used—particularly among poor communities that live outside the island’s sewerage network. Septic tank and pit toilets discharge effluent directly into the shallow aquifers that underlie the island, and this is a major contributor to groundwater contamination. Individual household wells are generally shallow and intercept contaminated groundwater. Consequently, diarrhea (particularly among infants) and cholera are endemic.

4. The 2005 FSM HIES estimated that the basic needs poverty line (BNPL) in Chuuk State was \$158.79 per week. HIES data indicate that 29.4% of households in Chuuk State, affecting about 34.5% of the population, have incomes less than the BNPL. Many households struggle to meet their basic living expenses on a daily/weekly basis, particularly those expenses that require cash payments. Families have to choose on a daily or weekly basis between competing demands for household expenditure. The limited availability of cash income to meet that expenditure forces trade-offs between bills. Households that experience basic-needs poverty face hardship on a daily basis and struggle to pay bills, and to purchase adequate and nutritious food. Affected households may need to borrow regularly from informal loan providers who charge very high interest rates for small unsecured loans to meet family commitments and community obligations, and they are frequently in debt. A significant number of the poorest households in FSM are headed by women. The 2005 HIES estimated that 22.5% of poor households were headed by women.

5. Many of the poor live in low-quality housing without proper access to water, sanitation, and other basic services. Poor housing conditions lead to poor health, poor employment prospects, and poor education attainment. Children frequently miss school through ill health or because school fees have not been paid. Adults are frequently poorly educated and have difficulty finding employment.

6. Previous water supply projects, including the Water and Sanitation Project (footnote 1), have been unsuccessful in addressing the demand for water. This is due to a number of factors, including poor site selection for the wells, inadequate operation and maintenance budgets, and limited technical capacity to maintain the wells and associated mechanical/electrical equipment. Provision of a reliable electricity supply is Chuuk State’s highest priority, followed by provision of a reliable and safe water supply. The water supply network is reliant on electricity from the island’s power grid, which is highly prone to disruption caused by unreliable electricity generation equipment, lack of institutional capacity, and budgetary constraints. ADB is assisting Chuuk State to improve electricity services, both in terms of improved infrastructure as well as capacity building in utility management. The demand for water on Weno Island is primarily for domestic use; demand from industrial, commercial, and government consumers is limited. Because of the highly porous nature of the island’s soils, there are only two permanent streams including Poe River which is a source of water for the Weno Water Supply. The Poe River discharge from the streams is insufficient to meet the demand for water and must be supplemented from groundwater sources. Harvesting of roof runoff is rarely practiced on Weno Island because of the cost of installing rainwater tanks and the associated roof gutter and pipe systems, and the need for alternate sources during dry periods. The intermittent nature of Weno Island’s water supply has forced many residents to construct shallow water supply wells to obtain water for domestic use, exposing them to the risk of waterborne diseases through the consumption of contaminated groundwater.

7. The demand for water on Weno Island is estimated to be 6.8 million liters per day against average daily water production of 3.6 million liters per day. Surface water sources are limited and the island relies heavily on groundwater to meet water demand. Only two of the 16 wells constructed on Weno Island under the Water Supply and Sanitation Project remain in service, yielding about 0.3 million liters per day—considerably lower than the project target yield of 3.5 million liters per day. Water abstracted from wells on Weno Island is untreated and bacteriologic tests in 2003, 2004, 2006, and 2007 indicate serious contamination. Water delivered to consumers through the water supply pipe network is intermittent because of frequent disruption to the island’s power supply, which results in the shutdown of water supply pumps. Negative pressures, induced by sudden pump shutdowns, further degrade the quality of water delivered to consumers as contaminated groundwater surrounding the water supply pipes is sucked into the pipes. ADB is assisting Chuuk State government to address the power supply issue

through the Omnibus Infrastructure Development Project,⁴ which will provide a new power station and upgraded electricity transmission and distribution systems on Weno Island.

8. Reactivation of Weno's water supply wells and chlorination facilities, in conjunction with improved electricity services to be delivered under the Omnibus Infrastructure Development Project, will contribute to a safe and reliable water supply. This will be further supplemented through an operation, management, and maintenance contract being awarded through funding from the Compact of Free Association with the US (the Compact) to improve management of CPUC.

4. Innovation

9. The Project is innovative in that it will contribute to improved water supply services to the residents of Weno Island at a relatively low cost. Increased water yields will be achieved by the rehabilitation and improved management of existing water supply wells rather than through the construction of new wells. This will provide significant savings on construction costs, optimize the use and extend the life of existing water supply wells, and minimize environmental and resettlement impacts. The Project's public awareness campaign will contribute to a reduced demand for water through greater community awareness of the need for water conservation. The consultative and participatory nature of the public awareness campaign will strengthen the community sense of responsibility to manage this resource jointly as a collective and public good. The poorest and most vulnerable people in the Weno Island community will benefit through the provision of reliable and safe water services which, in turn, will contribute to improved health and reduced reliance on individual household, and often unsafe, water supply wells.

5. Sustainability

10. The existing institutional arrangements and lack of managerial, financial, and technical capacity of CPUC have resulted in an unreliable and unsafe water supply to the residents of Weno Island. Both short- and long-term interventions are required to provide and sustain a safe and reliable water supply. This Project will address the immediate water supply crisis and contribute to short- to medium-term sustainability of the island's water supply.

11. The Project will contribute to sustainability in the short to medium term through improvements in the ongoing management and operation of the water utility and its relationship with the community. Water is often seen as a free resource in Pacific island countries, and the linkages between the utility and the public are important. The public need to pay their bills and need to see a reliable service in return, providing potable water. The Project is designed to achieve both. Operational maintenance of the wells will be improved as an element of this Project. Management will be improved through an operation and maintenance management contract funded through grant funds from the Compact. The community awareness campaign, provided under this Project, will provide the platform for CPUC to engage with the public in a dialogue over the need for customers and the utility to work together to provide a reliable service. Specifically, the Project will improve the sustainability of water services to the residents of Weno Island through the following:

- (i) Monitoring of groundwater quality to ensure that water abstracted from water supply wells and delivered to consumers is fit for consumption.
- (ii) Development of preventive maintenance programs and provision of maintenance training for CPUC personnel.
- (iii) Improved delivery of water services, which will improve the willingness of CPUC customers to pay for water services—providing revenue to fund operation and

⁴ ADB. 2004. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Federated States of Micronesia for the Omnibus Infrastructure Development Project*. Manila (Loans 2099-FSM and 2100-FSM, and TA 4426-FSM, approved on 5 November, summary procedure).

maintenance in the short to medium term, and possibly enabling full cost recovery for operations, maintenance, and capital works programs in the longer term.

- (iv) Improved groundwater resource security through public awareness campaigns to promote protection of watersheds.

12. The option to outsource all of CPUC's operations is being discussed by ADB, Government of the Federated States of Micronesia (the Government), US Office of Insular Affairs, Chuuk State government, and CPUC to ensure the long-term sustainability of CPUC's operations. Details of the arrangements (institutional and financial) and the schedule for outsourcing have yet to be determined, but it is unlikely that they could be outsourced before 2011.

6. Participatory Approach

13. The design, preparation, and implementation of the Project adopt a participatory approach as follows:

- (i) The Project was designed through a series of stakeholder meetings in FSM, including Chuuk State government, the Government of the Federated States of Micronesia, and CPUC.
- (ii) During implementation, the Project will be guided by Chuuk State Infrastructure Planning and Implementation Committee (IPIC), which has representatives from the Governor's Office, Department of Planning, Chuuk Environmental Protection Agency, Department of Transportation and Public Works, and CPUC; it is chaired by the Lieutenant Governor.
- (iii) Community involvement through participation in the community awareness program to promote conservation of water by reducing water consumption and wastage, and to highlight the need for tariffs.
- (iv) A series of stakeholder meetings and workshops will be held throughout implementation of the Project to seek stakeholder views. Where possible, the project design will be amended to address stakeholder concerns.

Primary Beneficiaries and Other Affected Groups and Relevant Description	Other Key Stakeholders and Brief Description
About 16,000 residents of Weno Island	<ul style="list-style-type: none"> • Government of the Federated States of Micronesia • Chuuk State government, including Chuuk Environmental Protection Agency • Community associations and nongovernment organizations

7. Coordination

14. The proposed Project was discussed with:

- (i) Mr. Kinji Ichimura, First Secretary, Embassy of Japan in Kolonia, Pohnpei State, FSM on 18 October 2007; and
- (ii) Mr. Shin-ich Hamada, Resident Representative, Japan International Cooperation Agency at Kolonia, Pohnpei State, FSM on 18 October 2007.

15. Mr. Ichimura and Mr. Hamada did not express any objection to the proposed Project.

8. Detailed Cost Table

16. Please refer to Appendix 2 for the detailed cost estimates and Appendix 3 for the Fund Flow Arrangement.

C. Linkage to ADB Strategy and ADB-Financed Operations

1. Linkage to ADB Strategy

17. This Project is consistent with objective 2 of The Pacific Strategy 2005-2009⁵: “Enhance the supply of and demand for quality basic social services...including clean water.” The FSM country operations business plan 2007–2009 was endorsed by ADB’s Board of Directors in October 2007. Its objectives are (i) good governance, with a particular focus on economic management and accountability; (ii) ensuring inclusive social development; and (iii) promoting sustained private sector-led economic growth. The proposed Project directly supports inclusive social development by establishing a reliable supply of potable water to the communities on Micronesia’s most populated island. This Project was identified as a priority by the Government of the Federated States of Micronesia and included in the country operations business plan 2007–2009.

18. The Project includes a public awareness campaign that is intended to help the community and the public utility to work more closely together on the delivery of a sustainable water supply in a cost-effective manner.

19. The Project will benefit the proposed operation and maintenance management contract, which is being implemented in cooperation with the US under funding from the Compact, to improve the maintenance capability and management skills of CPUC.

Document	Document Number	Date of Last Discussion	Objective(s)
Pacific Strategy 2005-2009		Midterm Review January 2008	Objective 2: “Enhance the supply of and demand for quality basic social services...including clean water”
FSM Country Operations Business Plan 2007–2009		Approved October 2007	Objective 2: Ensuring inclusive social development

2. Linkage to Specific ADB-Financed Operation

Project Name	Omnibus Infrastructure Development Project
Project Number	2099(SF)/2100-FSM
Date of Board Approval	5 November 2004
Loan Amount (\$ million)	Loan 2099-FSM(SF): \$14.2 million equivalent (Asian Development Fund) Loan 2100-FSM: \$4.8 million (Ordinary Capital Resources)

3. Development Objective of the Associated ADB-Financed Operation

20. The overall objective of the Omnibus Infrastructure Development Project is to enhance public health and the environment through assistance to improve water supply infrastructure in Kosrae and Yap, and wastewater infrastructure in Pohnpei; and to support economic growth and poverty reduction in Chuuk through improvements to the electrical power sector. The project’s objectives include (i) improved public health through enhanced quality of and access to potable water in Kosrae and Yap; (ii) enhanced public health, environmental quality, and surface and groundwater quality through provision of wastewater management and infrastructure in Pohnpei; and (iii) poverty reduction, support for economic

⁵ ADB. 2004. *Pacific Strategy 2005-2009: Responding to the Priorities of the Poor*. Manila.

growth and environmental improvements through power generation and distribution improvements, and power station environmental remediation in Chuuk. The project also advances private sector development by providing improved infrastructure and an enhanced business environment.

4. Main Components of the Associated ADB-Financed Operation

No.	Component Name	Brief Description
1.	Chuuk Power Rehabilitation	<p>1.1 Design, construction, and operation of a replacement power generation station for Weno Island (7 megawatts) with modularized diesel engine generator units.</p> <p>1.2 Power distribution upgrades, including 1,260 prepayment meters.</p> <p>1.3 Decommissioning and environmental remediation of the existing power station.</p> <p>1.4 Institutional strengthening utilizing external private sector support for Chuuk Public Utilities Corporation's operation, maintenance, and management functions.</p>
2.	Pohnpei Wastewater System Improvements	<p>2.1 Installation of new sewers.</p> <p>2.2 Rehabilitation of the existing sewer network, including lift stations.</p> <p>2.3 Expansion of the sewerage system to Sokehs district.</p> <p>2.4 Design, construction, and operation of a secondary wastewater treatment plant,</p> <p>2.5 An inflow and infiltration study.</p>
3.	Kosrae: Water Supply Systems—Upgrading	<p>3.1 Rehabilitation of transmission pipelines.</p> <p>3.2 Construction of treatment plants.</p> <p>3.3 Provision of pumping facilities.</p> <p>3.4 Rehabilitation of the distribution network.</p>
4.	Yap: Water Supply Development and Rehabilitation	<p>4.1 Provision of treated piped water supply to Maap and Maakiy.</p> <p>4.2 Rehabilitation of the existing Gagil–Tomil system.</p> <p>4.3 Installation of a production well in Maap for water security.</p>

5. Rationale for Grant Funding versus ADB Lending

21. Poor households on Weno Island have limited access to safe water and sanitation. Consequently, waterborne diseases, such as diarrhea and cholera, are endemic. The Federated States of Micronesia is a weakly performing country, and Chuuk State government is heavily indebted and does not have the financial resources required to improve the Weno water supply. Without external interventions, such as donor grants, the reliability and potability of Weno water supply will remain limited or deteriorate further, access by the poor to sustainable safe water will be inadequate, and Target 10 of the Millennium Development Goals will not be attained.

22. CPUC is responsible for the supply of power, sewerage, and water to the population. ADB is financing, on a loan basis, refurbishment of the power facility in Chuuk under the Omnibus Infrastructure Development Project. The sewage treatment plant on Weno Island is being upgraded under a US grant. This JFPR proposal will complete the services upgrade of the utility by improving access to groundwater,

meeting some of the water demand shortfall on Weno. A JFPR grant is sought as potable water is a basic necessity of the poor. The utility will need to work closely with the community to change their perceptions of the cost of water and their usage patterns.

23. The utility is the largest user of power, required for pumping water and operating the sewage treatment plant. Efficiency gains are expected in the generation of power and the treatment of sewerage through the allied loan-financed and grant elements of the utility's reform program. The existing loan can not be extended to cover the remedial work on the wells, the US is not able to provide additional grants, and ADB and the Government have agreed not to extend any further loans to Chuuk at this time. Therefore, meeting Weno's water demand can only be achieved through grant funding. ADB recognizes the risk of three separate activities being carried out simultaneously in the utility, and it has reached an agreement with the US to work together on the management aspects of the utility reform program.

24. FSM is a category B country, but its status does not accurately reflect the financial crisis in FSM generally and Chuuk in particular. Chuuk is in deep financial trouble, with more than \$40 million in outstanding liabilities—around 60% of state gross domestic product. The constitution does not enable the Government to centralize taxation revenue and does not have sufficient liquidity for significant financial support. In this situation, ADB and the Government do not believe it is financially prudent to lend further funds to Chuuk. Grant funding from the US, the major source of grant funding to the state under the Compact, is tied to existing agreements within Chuuk. As water is a basic necessity, grant funding is the only option available to resolve the water crisis in the near future.

D. Implementation of the Proposed Grant

1. Implementing Agency	Chuuk Public Utilities Corporation (CPUC)
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25. All procurement under the JFPR grant will be conducted in accordance with ADB's *Procurement Guidelines* (2007, as amended from time to time). A project manager and program supervisor, who will lead the grant implementation unit (GIU), will be recruited by CPUC in accordance with ADB's *Guidelines on the Use of Consultants* (2007, as amended from time to time) to provide services for the implementation, management, and progress monitoring of the JFPR grant. Local NGOs and consultants will be contracted by the GIU in accordance with ADB's *Guidelines on the Use of Consultants*.

2. Risks Affecting Grant Implementation

Type of Risk	Brief Description	Measure to Mitigate the Risk
Governance	Transparency and accountability of the GIU	ADB's <i>Procurement Guidelines</i> and <i>Guidelines on the Use of Consultants</i> , and procedures on disbursements will be followed during project implementation. ADB will conduct regular review of the Project during the implementation phase.
Institutional	Lack of available experienced personnel for implementing the Project	A consultant will be recruited to manage implementation of the Project and prepare bid documents for the water supply well rehabilitation works. Consultants will be recruited to undertake water quality monitoring, demand forecasting, design and implementation of the preventive

Type of Risk	Brief Description	Measure to Mitigate the Risk
		maintenance program, a public awareness program; and provide training to CPUC personnel. Civil works will be procured through national competitive bidding.
Community acceptance	The community may be unwilling to pay for water services and may not be receptive to water conservation and watershed protection principles.	A public awareness program and publicity campaign will explain the need for consumers to pay for water services, and the need for water conservation and protection of watersheds.
Weakly performing country	FSM is likely to be named a weakly performing country by ADB; this highlights additional implementation and sustainability risks.	ADB's Pacific Department is reviewing its implementation performance in FSM and is developing a new country partnership strategy consistent with FSM's weakly performing country status. Lessons and approaches developed for FSM as a whole will be used to refine the implementation arrangements. Project performance monitoring will be prioritized.

3. Monitoring and Evaluation (M&E)

Key Performance Indicator	Reporting Mechanism	Plan and Timetable for M&E
Average per capita demand for piped water by residential customers reduces from about 400 liters per person per day to less than 200 liters per person per day by 31 December 2010 following the implementation of a public awareness campaign for water conservation and to use water wisely.	Inception report, quarterly progress reports, and completion report	Baseline estimate of the average per capita demand for residential customers to be included in the inception reports. Revised estimates of the average per capita demand for residential customers and change relative to the baseline estimate to be incorporated in the quarterly progress reports and completion report.
Tariffs for the supply of water are progressively introduced from January 2009 to achieve full cost recovery of operation and maintenance costs by 31 December 2014.	Tariff study report Quarterly progress reports	Final report to be submitted to the Executing Agency (EA), ADB, and the governor of Chuuk State by October 2008. Details of water supply operation and maintenance costs, revenue, and arrears will be included in the quarterly progress reports. The reports will be submitted 1 month after every quarter to the EA, ADB, and the governor of Chuuk State and Chuuk Environmental Protection Agency (CEPA).

Key Performance Indicator	Reporting Mechanism	Plan and Timetable for M&E
	Audited project financial statements	To be submitted to the EA, ADB, and the governor of Chuuk State within 6 months after the end of each successive fiscal year.
Reactivation of nonfunctioning water supply wells on Weno Island including: (i) 6 wells constructed under the ADB-financed Water and Sanitation Project and (ii) up to 14 wells constructed prior to the ADB-financed Water and Sanitation Project by 31 December 2010 (footnote 1).	<p>Inception report</p> <p>Quarterly progress reports</p> <p>Project annual report</p> <p>Completion report</p>	<p>3 months after project commencement; submitted to the EA, ADB, and the governor of Chuuk State.</p> <p>1 month after every quarter for submission to the EA, ADB, and the governor of Chuuk State and CEPA. Quarterly reports will report cumulative accomplishments.</p> <p>The annual report is to be submitted on month 13 of project implementation to the EA, ADB, and the governor of Chuuk State and CEPA.</p> <p>The project completion report is to be submitted in the last month of project implementation to the EA, ADB, and the governor of Chuuk State and CEPA.</p>
Increased average daily water production from 3.6 million liters per day to 5.8 million liters per day by 31 December 2010.	Quarterly progress reports	Monthly yield and sales data to be incorporated in quarterly progress reports.
All water supplied through the Weno water supply system is disinfected and potable by 31 December 2010.	Quarterly progress reports	Water quality monitoring data to be incorporated in quarterly progress reports.
Well PMP established and fully implemented by 31 December 2010.	Project annual report and completion report	An outline of the well PMP and details of the number of CPUC personnel trained, number of wells maintained, and statistics of well production disruptions (number, frequency, and duration) to be incorporated in the 2009 annual report and the completion report.

4. Estimated Disbursement Schedule

Fiscal Year (FY) ^a	Amount (\$) ^b
FY2008	150,000
FY2009	550,000
FY2010	200,000
FY2011	80,000
Total Disbursements	980,000

^a Fiscal year ends 30 September.

^b Excludes contingency.

Appendixes

1. Summary Cost Table
2. Detailed Cost Estimates
3. Fund Flow Arrangement
4. Implementation Arrangements
5. Summary Poverty Reduction and Social Strategy
6. Procurement Plan and Contract Packages
7. Design and Monitoring Framework

SUMMARY COST TABLE

(\$)

Expenditure	Grant Components	(\$)					Total	Percent
		A: Demand Forecast, Preventative Maintenance Program, and Tariff Study	B: Public Awareness Campaign for Water Conservation and Watershed Protection and Willingness to Pay Study	C: Well Remediation and Rehabilitation	D: Water Quality Monitoring Program	E: Project Management		
1. Civil Works		0	0	179,000	0	0	179,000	18.27
2. Equipment and Supplies		0	0	286,000	0	0	286,000	29.18
3. Consulting Services		138,000	60,000	0	75,000	165,000	438,000	44.69
4. Training, Workshops, Seminars, and Public Campaigns		0	30,000	0	0	0	30,000	3.06
5. Contingencies		6,000	8,000	19,000	6,000	8,000	47,000	4.80
Subtotal JFPR Grant Financed		144,000	98,000	484,000	81,000	173,000	980,000	100.0
Government Contribution		0	0	0	0	35,000	35,000	0
Chuuk Public Utilities Corporation		0	0	400,000	0	0	400,000	0
Total Estimated Costs		144,000	98,000	884,000	81,000	208,000	1,415,000	100.0

ADB = Asian Development Bank, JFPR = Japan Fund for Poverty Reduction.
 Source: ADB and Chuuk Public Utilities Corporation estimates.

DETAILED COST ESTIMATES
(\$)

Code	Supplies and Services Rendered	Unit	Costs			Contributions			
			Quantity Units	Cost Per Unit	Total \$	JFPR Amount	MOP	Government	Chuuk Public Utilities Corporation
Component A. Demand Forecast, Preventative Maintenance Program, and Tariff Study			Subtotal		138,000	138,000		0	0
1.1	Consulting Services								
1.1.1	Water supply demand analysis and demand forecasts to the Year 2020 including reporting							QCBS	
	(i) Water supply engineer (International)	Person-month	2	16,000	32,000	32,000			
	(ii) Per diem	Person-month	1	3,000	3,000	3,000			
	(iii) Travel	Trip	1	5,000	5,000	5,000			
1.1.2	Development of preventative maintenance program for water supply wells and training of CPUC personnel								
	(i) Water supply engineer (International)	Person-month	2	16,000	32,000	32,000			
	(ii) Per diem	Person-month	1	3,000	3,000	3,000			
	(iii) Travel	Trip	2	5,000	10,000	10,000			
1.1.3	Tariff Study								
	(i) Financial Analyst	Person-month	2	20,000	40,000	40,000			
	(ii) Per diem	Person-month	1	3,000	3,000	3,000			
	(iii) Travel	Trip	2	5,000	10,000	10,000			
Component B. Public Awareness Campaign for Water Conservation and Watershed Protection, and Willingness to Pay Study			Subtotal		90,000	90,000		0	0
2.1	Consulting Services								
2.1.1	Public awareness campaign for water conservation and watershed protection							QCBS	
	(i) Community education and awareness specialist (National)	Person-month	6	10,000	60,000	60,000			
2.2	Workshops								
2.2.1	(i) Public meetings and workshops	Participant	500	40	20,000	20,000			
	(ii) Workshop materials, advertizing	Item	1	10,000	10,000	10,000			
Component C. Well Remediation and Rehabilitation			Subtotal		865,000	465,000		0	400,000
3.1	Civil Works								
3.1.1	Air-surge, flush, clean, and dose boreholes including borehole casing and screens	No.	20	1,500	30,000	30,000			
3.1.2	Construct monitoring / vent port on existing well-head including supply and installation of sanitary seal, drop-line hole, riser pipes and couplings	No.	6	1,500	9,000	9,000			
3.1.3	Install and commission new borehole pumps including electrical connections and pump control equipment for pump pumps of the following sizes:								
	a) 2.2 kW (3HP)	No.	18	1,500	27,000	27,000			
	b) 5.2 kW (7.5HP)	No.	2	1,500	3,000	3,000			
3.1.4	Install and commission chlorination units including electrical connection and control equipment	No.	30	2,000	60,000	60,000			
3.1.5	Install transformers and electrical connection from mains supply to pump control equipment	No.	20	2,500	50,000				50,000
3.1.6	Install delivery pipeline fittings including stop valves, flow meters, tees, 90 degree bends, mild steel spacer pipes, and couplings	No.	20	2,500	50,000	50,000			
3.1.7	Construct standard block-work pumphouses at existing well sites	No.	20	7,500	150,000				150,000

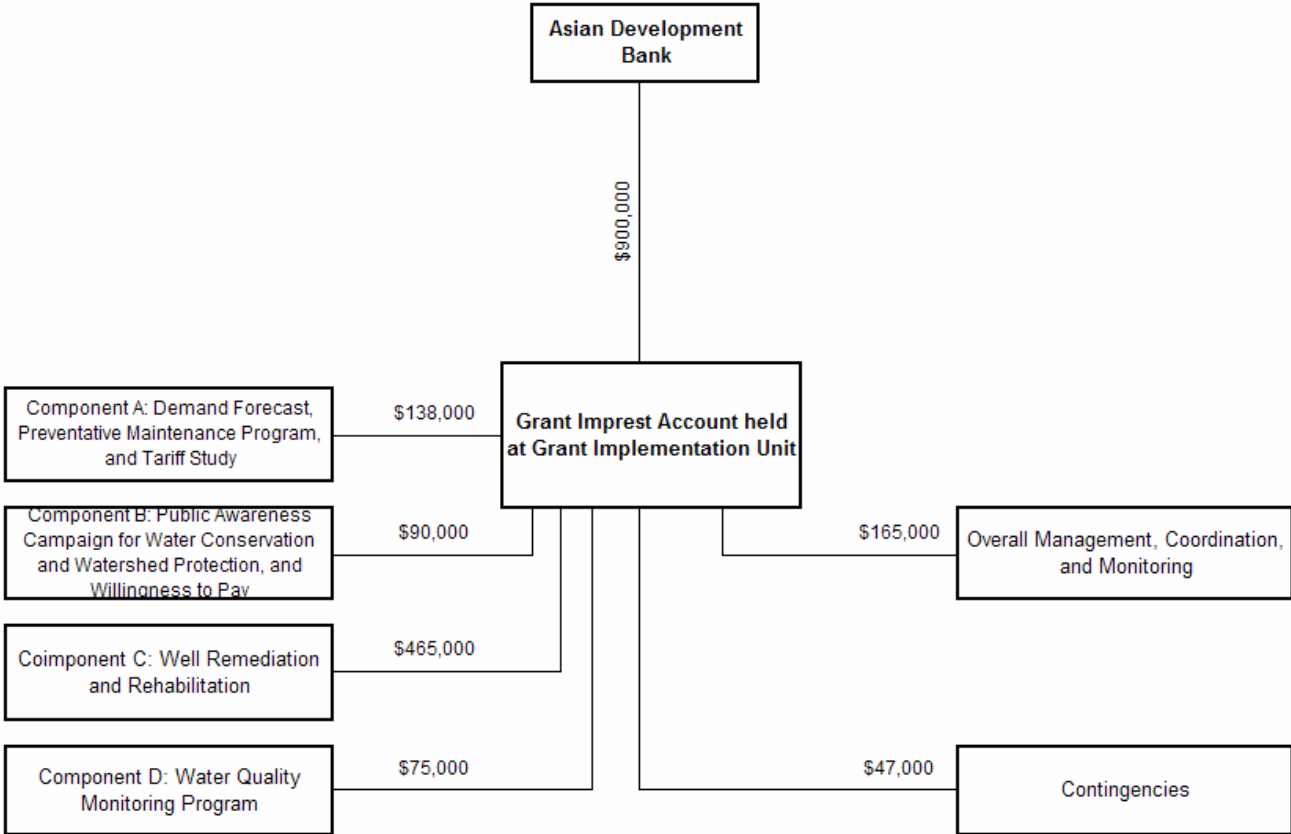
Code	Supplies and Services Rendered	Unit	Costs			Contributions			
			Quantity Units	Cost Per Unit	Total \$	JFPR		Government	Chuuk Public Utilities Corporation
						Amount	MOP		
3.2	Equipment and Supplies					Shopping			
3.2.1	Borehole pump (3-phase, 210V, 60Hz) of the following sizes:								
	(i) 2.2 kW (3HP)	No.	18	2,500	45,000	45,000			
	(ii) 5.6 kW (7.5HP)	No.	2	3,000	6,000	6,000			
3.2.2	2" Stop valves (flange/flange)	No.	20	500	10,000	10,000			
3.2.3	2" Hydraulic flow meter (analogue)	No.	20	200	4,000	4,000			
3.2.4	2" Equal tees (flange/flange)	No.	40	150	6,000	6,000			
3.2.5	2" 90 degree bends (flange/flange)	No.	40	100	4,000	4,000			
3.2.6	2" 90 degree bends (flange/socket)	No.	40	100	4,000	4,000			
3.2.7	2" Mild steel spacer pipes, 1 meter length, (flange/spigot)	No.	40	25	1,000	1,000			
3.2.8	2" Mild steel spacer pipes, 2 meter length, (flange/flange)	No.	20	50	1,000	1,000			
3.2.9	Calcium hyperchloride chlorinator units inclusive of feed pumps and controls	No.	30	5,000	150,000	150,000			
3.2.10	Trailer-mounted air compressor	No.	1	25,000	25,000	25,000			
3.2.11	Calcium hyperchloride, 40 kg packs	No.	100	200	20,000	20,000			
3.2.12	Concrete building blocks	No.	10000	1	10,000	10,000			
3.2.13	Electricity transformers	No.	20	10,000	200,000			200,000	
Component D. Water Quality Monitoring Program					Subtotal	75,000	75,000	0	0
4.1	Consulting Services						NCB		
4.1.1	Water quality monitoring program inclusive of all sampling, laboratory testing, analysis of test results and reporting of water quality at 10 wells site for the following parameters and sampling/testing frequencies:	Item	1	75,000	75,000	75,000			
	(i) Total and fetal coliforms, biweekly over 6 months								
	(ii) Conductivity and temperature, biweekly over 6 months								
	(iii) Total nitrogen and total phosphorous, month over 6 months								
	(iv) Trace elements (Pb, Cu, Mg, Ca, Fe, Al, Ar, Hg), bimonthly over 6 months								
Component E. Project Management					Subtotal	170,000	135,000	35,000	0
5.1	Management and Coordination						DS		
5.1.1	Project manager and supervisor	Person-month	8	12,000	96,000	96,000			
5.1.2	Per diem	Person-month	8	3,000	24,000	24,000			
5.1.3	Travel	Trip	6	2,500	15,000	15,000			
5.1.4	Project coordinator	Person-month	3	10,000	30,000			30,000	
5.1.5	Travel and per diem	Item	1	5,000	5,000			5,000	
5.2	External Auditing of Project Accounts								
5.2.1	Annual external audit of project accounts	No.	3	10,000	30,000	30,000			DS
Components A to E = Subtotal					Subtotal	1,368,000	933,000	35,000	400,000
Contingency (Maximum 10% of total JFPR Contribution)						47,000	47,000		
TOTAL Grant Costs					Total	1,415,000	980,000	35,000	400,000

CPUC = Chuuk Public Utilities Corporation, DS = direct selection, FSM = Federated States of Micronesia, JFPR = Japan Fund for Poverty Reduction, MOP = method of procurement, NCB = national competitive bidding, QCBS = quality- and cost-based selection.
Sources: Asian Development Bank and Chuuk Public Utilities Corporation.

FUND FLOW ARRANGEMENT

1. The Asian Development Bank (ADB) will channel the Japan Fund for Poverty Reduction (JFPR) funds directly to a JFPR imprest account, which will be opened and maintained by the grant implementation unit (GIU) in the Federated States of Micronesia, at a bank endorsed by the Executing Agency (EA) and acceptable to ADB, to facilitate day-to-day local expenditures of the JFPR Project. The imprest accounts will be established, managed, replenished, and liquidated in accordance with ADB's *Loan Disbursement Handbook* (2007, as amended from time to time). The EA will be kept informed by the GIU about all transactions, and receive copies of all financial statements and audit reports. The JFPR imprest account will be managed by the GIU on the principles of a cosignatory arrangement with Chuuk Public Utilities Corporation, initially based on the first 6-month activity plan and related budget, and afterwards based on the approved annual work plan and budget.
2. Interest earned on the JFPR imprest account can be used for the Project subject to ADB approval, within the approved total amount of the JFPR. Upon completion of the JFPR Project and before closing of the JFPR imprest account, any unutilized interest should be returned to the JFPR fund account maintained at ADB. If the remittance fee and other bank charges are higher than the amount of interest earned, there will be no need to return such interest to the JFPR account maintained at ADB.
3. The ceiling of the imprest account should not exceed the equivalent of 6 months' estimated expenditures to be financed from the imprest account or \$100,000, whichever is lower. To facilitate project implementation and simplify supporting the documentation process, the statement of expenditures procedure will apply for any individual payment/transaction not exceeding \$10,000 or equivalent in other currencies. Detailed implementation arrangements—such as the flow, replenishment, and administrative procedures—will be detailed in the grant implementation manual (GIM) and be established between ADB and the Government through the JFPR letter of agreement. The schematic fund flow for the JFPR Project is shown in Figure A3.
4. Annual audits by independent auditors will be conducted under the Project. The auditor's reports will be submitted to ADB within 6 months after the end of the fiscal year and closing date. The auditor's report will include the certified copies of the audited accounts and financial statements, with a separate auditor's opinion on the use of imprest account and statement of expenditures authorized under the JFPR Project.

Figure A3: Fund Flow Arrangements for the JFPR Project



JFPR = Japan Fund for Poverty Reduction, ICB = international competitive bidding, LCB = local competitive bidding, LCQ = least-cost quality.
Source: Asian Development Bank.

IMPLEMENTATION ARRANGEMENTS

A. Project Implementation and Management

1. **Executing and Implementing Agency.** The Department of Transport, Communications and Infrastructure will be the Executing Agency for the Project. Chuuk Public Utilities Corporation (CPUC) will be the project Implementing Agency. A project manager and program supervisor, who will lead the grant implementation unit (GIU), will be recruited by CPUC in accordance with the *Guidelines on the Use of Consultants* (2007, as amended from time to time) of the Asian Development Bank (ADB) to provide services for the implementation, management, and progress monitoring of the Japan Fund for Poverty Reduction (JFPR) grant.

2. **Project Steering Committee.** The design and implementation of the Project will be guided by Chuuk State Infrastructure Planning and Implementation Committee (IPIC), which will be the project steering committee. Chuuk State IPIC has representatives from the governor's office, Department of Planning, Chuuk Environmental Protection Agency, Department of Transportation and Public Works, and CPUC; and it is chaired by the lieutenant governor.

3. **Grant Implementation Unit.** The GIU will be formed within CPUC to design and manage the Project. CPUC will recruit a project manager/program supervisor to lead the GIU. The project manager/program supervisor will be recruited by CPUC in accordance with ADB's *Guidelines on the Use of Consultants* and will assist with procurement, construction supervision, and project management. CPUC will provide technical and administrative staff to the GIU to support GIU activities.

4. **Procurement and Consulting Services.** All procurement under the Project will be in accordance with ADB's *Procurement Guidelines* (2007, as amended from time to time). Recruitment of consultants will follow ADB's *Guidelines on the Use of Consultants*.

B. Auditing of Project Accounts

5. Annual audits by independent auditors will be conducted under the Project. The auditor's reports will be submitted to ADB within 6 months after the end of the fiscal year and closing date. The auditor's report will include the certified copies of the audited accounts and financial statements, with a separate auditor's opinion on the use of imprest account and statement of expenditures authorized under the JFPR project.

SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

Country/Project Title: Federated States of Micronesia/Weno Water Supply Well Remediation Project

Lending/Financing Modality:

JFPR Grant

Department/ Division:

Pacific Department/
Pacific Operations Division (Area B)

I. POVERTY ANALYSIS AND STRATEGY

A. Linkages to the National Poverty Reduction Strategy and Country Partnership Strategy

1. This Project is consistent with objective 2 of the Pacific Strategy 2005–2009: “Enhance the supply of and demand for quality basic social services...including clean water”.^a The Federated States of Micronesia (FSM) Country Operations Business Plan 2007–2009 was endorsed by ADB’s Board of Directors in October 2007.^b Its objectives are (i) good governance, with a particular focus on economic management and accountability; (ii) ensuring inclusive social development; and (iii) promoting sustained private sector-led economic growth. The proposed Project directly supports inclusive social development by establishing a reliable supply of potable water to the communities on Micronesia’s most populated island. This Project was identified as a priority by the Government of the Federated States of Micronesia (the Government) and is included in the country operations business plan 2007–2009.

Water supply services on Weno Island are provided by Chuuk Public Utilities Corporation (CPUC), a state-owned enterprise of Chuuk State government. CPUC is unable to charge tariffs for water, as the level of service and the quality of water delivered is poor and consumers are unwilling to pay for service. Chuuk State government is enduring a lengthy financial crisis and is unable to subsidize water supply operations fully. The inability of CPUC to charge water tariffs and Chuuk State government’s inability to provide adequate funding for the provision of a reliable and safe water supply has meant that routine functions such as disinfection of water prior to distribution and routine maintenance are no longer undertaken because funds are unavailable. Consequently, water supply wells have progressively failed and the water delivered by the Weno water supply is not potable.

The intermittent nature of Weno Island’s water supply has forced many residents to construct shallow water supply wells to obtain water for domestic use, exposing them to the risk of waterborne diseases through the consumption of contaminated groundwater. Rainwater harvesting is not widely practiced on Weno Island, possibly because of the distinct dry season from January to April and prolonged droughts during El Niño events.

Reactivation of Weno’s water supply wells and chlorination facilities will provide the residents of Weno Island with a safe and reliable water supply.

B. Poverty Analysis

Targeting Classification: Targeted intervention (TI-M)

1. Key Issues

The project supports Millennium Development Goal 7, specifically Millennium Development Targets 9 and 10.

The draft FSM *Strategies for Equitable Growth and Hardship Alleviation* identified governance, social development,^c and equitable growth as three key issue that need to be addressed to alleviate hardship and to promote equitable growth. Proposed strategies to address these issues are as follows:

Governance: (i) provide leadership and management training for senior officials; (ii) develop clear national vision and development strategies; (iii) continue to implement public service and public sector reform program to improve transparency and accountability; (iv) complete process of focusing government budget on core services to improve service delivery to public; (v) develop and implement transparent, competitive investment policy environment; and (vi) strengthen macroeconomic planning and management.

Social Development: (i) strengthen primary and preventive health programs, (ii) increase investment in primary health and nutrition education programs especially in rural areas, (iii) improve delivery of water and sanitation services to poorly served areas, (iv) strengthen management and delivery of whole education system, (v) increase technical and vocational training opportunities to meet needs and aspirations of youth, (vi) investigate a cost-effective welfare system for those that are overlooked by traditional support system, and (vii) build cooperation between government and nongovernment organizations in provision of social safety nets for the most disadvantaged.

Equitable Growth: (i) improve macroeconomic stability through better macroeconomic planning and management; (ii) strengthen budget management and fiscal discipline; (iii) promote diversification of domestic economy to both broaden and deepen export base; (iv) implement economic reforms to prepare for membership of the Pacific Island Countries Trade Agreement and Pacific Agreement on Closer Economic Relations; (v) create an investment environment that is more transparent and conducive to investment and employment creation; (vi) provide support to small enterprise development; (vii) review land tenure system,

creating greater transparency and enabling improved access to land for the land-poor; (viii) improve opportunities for agricultural investment; and (ix) raise public awareness to highlight the need for sustained economic growth.

The Project aligns with the proposed strategies by improving the delivery of water to poorly served areas, improving transparency and accountability in the provision of water supply services in Chuuk State, and possibly providing vocational training opportunities to meet the needs and aspirations of the youth.

The project beneficiaries will be all residents (about 16,000 people) of Weno Island, including the poor. An improved water supply is expected to result in health, particularly for children.

2. Design Features

The Project will (i) increase community awareness on the need to use water wisely and protect watersheds; (ii) increase the quantity of water abstracted from groundwater sources to reduce the gap between demand and supply; (iii) improve the quality of water delivered to water supply consumers through chlorination; (iv) decrease the incidence of waterborne diseases; (v) train water supply personnel to maintain the water supply wells; and (vi) develop water demand forecasts for Weno Island up to 2020, and identify potential sources of water to meet long-term demand.

C. Poverty Impact Analysis for Policy-Based Lending

Not applicable

II. SOCIAL ANALYSIS AND STRATEGY

A. Findings of Social Analysis

The 2005 FSM Household Income and Expenditure Survey (HIES) estimated that the basic needs poverty line (BNPL) in Chuuk State was \$158.79. HIES data indicate that 29.4% of households in Chuuk State, affecting about 34.5% of the population, have incomes less than the BNPL. Many households struggle to meet their basic living expenses on a daily/weekly basis, particularly those expenses that require cash payments. Families have to choose on a daily or weekly basis between competing demands for household expenditure. The limited availability of cash income to meet that expenditure forces trade-offs between bills. Households that experience basic-needs poverty face hardship on a daily basis and struggle to pay bills, and to purchase adequate and nutritious food. Affected households may need to borrow regularly from informal loan providers who charge very high rates of interest for small, unsecured loans to meet family commitments and community obligations; and they are frequently in debt.

Many of the poor live in low-quality housing without proper access to water, sanitation, and other basic services. Access to safe water and sanitation facilities is essential for good health and is a key issue in considering poverty and hardship alleviation. Poor housing conditions lead to poor health, poor employment prospects, and poor education attainment. Children frequently miss school through ill health or because school fees have not been paid. Adults are frequently poorly educated and have difficulty finding employment.

Reactivation of Weno’s water supply wells and chlorination facilities, in conjunction with improved electricity services to be delivered under the Omnibus Infrastructure Development Project,^d will provide consumers with a safe and reliable water supply and enable CPUC to apply water tariffs, which are essential for a sustainable water supply. This will be supplemented through an operation, management, and maintenance contract to be awarded through funding from the Compact of Free Association with the US (the Compact) to improve management of CPUC.

B. Consultation and Participation

1. Provide a summary of the consultation and participation process during the project preparation.
 Consultations were held with the Chuuk state governor, the Government, Chuuk state government, and CPUC in August 2006. Further consultations were undertaken with personnel from CPUC; Department of Transport, Communications and Infrastructure; Chuuk State Environmental Protection Agency; and Department of Health in November 2006. Consultations were also undertaken during the project Fact-Finding Mission in October 2007 with the Government, Chuuk state governor, CPUC personnel, and personnel from the US Office of Insular Affairs.

2. What level of consultation and participation (C&P) is envisaged during the project implementation and monitoring?
 Information sharing Consultation Collaborative decision making Empowerment

Workshops with stakeholder groups, including nongovernment organizations and community service organizations, and one-on-one consultations with affected persons.

3. Was a C&P plan prepared? Yes No

If a C&P plan was prepared, describe key features and resources provided to implement the plan (including budget, consultant input, etc.). If no, explain why.

A C&P plan will be prepared during project implementation by the community education and awareness specialist.

C. Gender and Development

1. **Key Issues.** A significant number of the poorest households in FSM are headed by women. The 2005 HIES estimated that 22.5% of poor households were headed by women. While the Project is not expected to impact women specifically or exclude them from benefiting from the Project, a gender analysis will be undertaken to understand the gender division of roles and responsibilities in water use, water conservation, and watershed management and protection.

2. **Key Actions.** Measures included in the design to promote gender equality and women’s empowerment—access to and use of relevant services, resources, assets, or opportunities and participation in decision-making process:

Gender plan Other actions/measures No action/measure

As noted above, a gender analysis will be undertaken and a gender plan prepared.

III. SOCIAL SAFEGUARD ISSUES AND OTHER SOCIAL RISKS

Issue	Significant/Limited/No Impact	Strategy to Address Issue	Plan or Other Measures Included in Design
Involuntary Resettlement	No impact. All civil works will be undertaken in existing facilities located on sites that have already been acquired by the state government.		<input type="checkbox"/> Full Plan <input type="checkbox"/> Short Plan <input type="checkbox"/> Resettlement Framework <input checked="" type="checkbox"/> No Action
Indigenous Peoples	No impact. The majority of the population has ethnic origins in Chuuk, so it can be considered indigenous. However, under the ADB definition of indigenous persons, i.e., a group or cultural identity distinct from that of the dominant or mainstream society, there are no indigenous persons.		<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input type="checkbox"/> Indigenous Peoples Framework <input checked="" type="checkbox"/> No Action
Labor <input checked="" type="checkbox"/> Employment opportunities <input type="checkbox"/> Labor retrenchment <input type="checkbox"/> Core labor standards	Limited impact. Short-term employment opportunities may be generated during the Project’s construction phase. Longer-term employment opportunities, particularly in the service sector, could also be generated because of commercial development triggered by a more accessible, secure, and reliable water supply.		<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input checked="" type="checkbox"/> No Action
Affordability	Limited impact. The Project could result in an increase in water tariffs, which may impact on the	Willingness-to-pay study will be undertaken at the beginning of the Project.	<input checked="" type="checkbox"/> Action <input type="checkbox"/> No Action

	poor.		
Other Risks and/or Vulnerabilities <input type="checkbox"/> HIV/AIDS <input type="checkbox"/> Human trafficking <input type="checkbox"/> Others (conflict, political instability, etc), please specify	No impact. No other social risks have been identified.		<input type="checkbox"/> Plan <input type="checkbox"/> Other Action <input type="checkbox"/> No Action
IV. MONITORING AND EVALUATION			
Are social indicators included in the design and monitoring framework to facilitate monitoring of social development activities and/or social impacts during project implementation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

BNPL = basic needs poverty line, C&P = consultation and participation, CPUC = Chuuk Public Utilities Corporation, FSM = Federated States of Micronesia, JFPR = Japan Fund for Poverty Reduction, HEIS = Household Income and Expenditure Survey, HIV/AIDS = human immunodeficiency virus/acquired immunodeficiency syndrome.

^a Asian Development Bank (ADB). 2004. *Pacific Strategy 2005-2009: Responding to the Priorities of the Poor*. Manila.

^b ADB. 2007. *Federated States of Micronesia (FSM) Country Operations Business Plan 2007–2009*. Manila (October).

^c ADB. 2003. *Strategies for Equitable Growth and Hardship Alleviation*. Manila (December).

^d ADB. 1996. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the Federated States of Micronesia for the water Supply and Sanitation Project*. Manila (Loan 1459-FSM and TA 2646-FSM, approved on 19 September).

PROCUREMENT PLAN AND CONTRACT PACKAGES

Table A6.1: Procurement Plan

Project Components	<ol style="list-style-type: none"> 1. Demand Forecast, Preventive Maintenance Program, and Tariff Study 2. Public Awareness Campaign for Water Conservation and Watershed Protection and Willingness to Pay Study 3. Well Remediation and Rehabilitation 4. Water Quality Monitoring Program 5. Project Management
Country	Federated States of Micronesia
Name of Beneficiary	Chuuk State
Project Name	Weno Water Supply Well Remediation Project
JFPR Reference	To be advised
Date of Effectiveness	To be advised
Amount	\$980,000
Of which Committed	Nil
Executing Agency	Department of Transport, Communications and Infrastructure
Approval Date of Original Procurement Plan	Not applicable
Period Covered by this Plan	July 2008 to December 2010

Sources: Asian Development Bank and Electric Power Corporation.

Table A6.2: Procurement Thresholds, Goods and Related Services, Works and Supply and Install

Procurement Method	Threshold
ICB Works	\$100,000 (minimum) ^a
ICB Goods	\$500,000 (upper limit)
Shopping	\$100,000 (upper limit)

ICB = international competitive bidding.

^a National competitive bidding is not feasible because of lack of local contractors and suppliers, and the small size of the Federated States of Micronesia.

Source: Asian Development Bank.

Table A6.3: Procurement Thresholds, Consultants Services

Procurement Method	Threshold
Individual consultants: Biodata proposal	Not applicable
Other consultant contracts: Quality- and cost-based selection, short technical proposal, quality and cost ratio for evaluation of proposals to be 80:20	\$50,000

Source: Asian Development Bank.

**Table A6.4: Indicative List of Contract Packages
Goods, Works, and Consulting Services**

Contract Description	Estimated Cost (\$'000)	Procurement Method	Expected Date of Advertisement	Prior Review (Y/N)
Demand Forecast and Preventive Maintenance Program Design	138	QCBS	October 2008	Y
Public Awareness Campaign for Water Conservation and Watershed Protection	90	Biodata	October 2008	N
Well Remediation and Rehabilitation	465	ICB	October 2008	Y
Water Quality Monitoring Program	75	QCBS	August 2008	Y
Project Management	200	Biodata	October 2008	N

ICB = international competitive bidding, QCBS = quality- and cost-based selection.

Source: Asian Development Bank.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and/or Indicators	Data Sources and/or Reporting Mechanisms	Assumptions and Risks
<p>Impact Improved living and health standards in Chuuk State</p>	<p>National human development index is maintained at or increases from 0.815 during 2008–2012 (baseline year 2006).</p> <p>Reduction in number of reported cases of waterborne diseases, as indicated by diarrhea and cholera</p> <p>Groundwater remains safe for potable use</p>	<p>United Nations Development Programme human development reports, groundwater monitoring data, CPUC records</p>	<p>Assumption</p> <ul style="list-style-type: none"> State and national governments remain committed to improving services to the public
<p>Outcome Secure, accessible, and safe water supplies to communities on Weno Island</p>	<p>Continuity of potable supply to consumers increases from about 33% at present to 99.9%+ by 31 December 2012</p>	<p>CPUC records</p>	<p>Assumption</p> <ul style="list-style-type: none"> Civil society recognizes the Government's role in providing reticulated water <p>Risks</p> <ul style="list-style-type: none"> Land access issues are not resolved in a timely manner State legislate an approach to water management that is inconsistent with a user-pays system
<p>Outputs</p> <ol style="list-style-type: none"> Consumers embrace water conservation. CPUC's water and sanitation services are financially and technically sustainable 	<p>Average per capita demand for piped water by residential customers reduces to less than 200 liters per person per day by 31 December 2010 (Baseline 2008: 400 liters per person per day)</p> <p>Tariffs for the supply of water are progressively introduced from June 2009 to achieve full cost recovery of operation and maintenance costs by 31 December 2014. (Baseline 2008: no water charges)</p> <p>Water supply well preventive maintenance program established and fully implemented by 31 December 2010</p>	<p>Project inception report, quarterly progress reports, and project completion report</p> <p>CPUC annual reports and audited financial statements. Project inception report, quarterly progress reports, and project completion report.</p>	<p>Assumptions</p> <ul style="list-style-type: none"> Community is receptive to water conservation and watershed protection principles Community is willing to pay for water services CPUC financial management improves under the operation, maintenance, and management contract funded by the Compact of Free Association with the US

Design Summary	Performance Targets and/or Indicators	Data Sources and/or Reporting Mechanisms	Assumptions and Risks
<p>3. CPUC is able to meet consumer demand for piped water</p> <p>4. Water supplied by CPUC is potable</p>	<p>Six wells constructed under the ADB-financed Water and Sanitation Project and up to 14 wells constructed prior to the ADB-financed Water and Sanitation Project are rehabilitated and reactivated by 31 December 2010</p> <p>Average daily water production increases from 3.6 million liters per day to 5.8 million liters per day by 31 December 2010</p> <p>All water supplied through the Weno water supply system is disinfected by 31 December 2010</p>	<p>Project inception report, quarterly progress reports, and project completion report</p>	<ul style="list-style-type: none"> • CPUC's capacity to operate and maintain the Weno water supply improves
<p>Activities</p> <ol style="list-style-type: none"> 1. Component A: Demand forecast, preventive maintenance program, and tariff study 2. Component B: Public awareness campaign for water conservation and watershed protection and willingness-to-pay study 3. Component C: Well remediation and rehabilitation 4. Component D: Water quality monitoring program 5. Component E: Project management 		<p>Inputs</p> <ul style="list-style-type: none"> • ADB: \$980,000 (funded by the Japan Fund for Poverty Reduction) • CPUC: \$400,000 • Government: \$35,000 • Beneficiaries and affected persons • Consultants: 4 international person-months and 14 national person-months: \$438,000 	

ADB = Asian Development Bank, CPUC = Chuuk Public Utilities Corporation.