



ନେତ୍ରକୁ ପାଦକିଳିରେ

$\frac{2}{3} \times \frac{3}{5} = \frac{1}{5}$

٦٣٧

5-۱/2013/۷/۲۰

2013 ພຶສພາ 19

በመግቢያ

2.....	መሸሪያ ስም:	1.0
3.....	ቻንቃቄ የሚከተሉት በኩል ስም:	2.0
3.....	ቻንቃቄ የሚከተሉት በኩል ስም:	3.0
4.....	ቻንቃቄ የሚከተሉት በኩል ስም:	4.0
4.....	ቻንቃቄ የሚከተሉት በኩል ስም:	5.0
6.....	ቻንቃቄ የሚከተሉት ስም:	6.0

፲፡ 14 ዓዲስ አበባ 2013 ዓ.ም. የዕለታዊ ሪፐብሊክ ቤት ተመዝግበ ማረጋገጫ ማጠና.

፲፡ 29 ዓዲስ አበባ 2012 ዓ.ም. የዕለታዊ ሪፐብሊክ ቤት ተመዝግበ ማረጋገጫ ማጠና.

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



۰۰۰۰۰۰۰۰۰۰

15,000,000

وَمِنْهُمْ مَنْ يَرْجُو أَنْ يُنْجَى إِلَيْهِ وَمِنْهُمْ مَنْ يَرْجُو أَنْ يُنْجَى إِلَيْهِ

०० लाख ५३०५७२३०

1.0

١٥,٠٠٠,٠٠٠ (بىىرەمەن تۈرىپىسىز)

۲۰۶۰ میلادی که در آن سال از این دو کشور بود.

سراپلر ۹۰۰ و ۵۵۰۳ متری از سطح دریا

2.0 ناتج و مرجع کے لئے سیکھیاں کی طرف سے ملکی خدمتی:

د) حکومتی خرچوں کا نامہ دو رہے تاریخ دیر رہنمائی پرستو گزینہ پرستی :-

1. ساری خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

2. حکومتی خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

3. ساری خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

4. شعبانی خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

5. ایک خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

6. ایک خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

7. خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

8. خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

9. دوسرے خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

10. سوچنے خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

11. ایک خرچوں کی خدمتی کا جائزہ اسلامیہ عالم (عہدہ بھروسہ)

3.0 ناتج و مرجع کے لئے سیکھیاں کی طرف سے ملکی خدمتی:

ج) خرچوں : 14 اکتوبر 2013 واسطہ خرچوں کی طرف سے ملکی خدمتی:

ج) خرچوں : 29 نومبر 2012 واسطہ خرچوں کی طرف سے ملکی خدمتی:

5.0 تجسس و تحقیق

وَمِنْهُمْ مَنْ يَرْجُو أَنْ يُنْجَى إِلَيْهِ وَمِنْهُمْ مَنْ يَرْجُو أَنْ يُنْجَى إِلَيْهِ

١٤٠ (جَمِيعَ الْمُؤْمِنِينَ) ١٥,٠٠٠,٠٠٠

وَقَرْبَهُ مُؤْمِنٌ وَلَا يَرْجُوا مُؤْمِنٌ وَلَا يَرْجُوا

جیلیکس سریز ۳.۲" این فایل را در پوشه "فایل های مکانیکی" قرار دهید.

ل.ج. ١١,٢٢٧,٠٠ (ل.ج. ٣٥٥,٣٧٩,٦٧٦) (ر.م. ٢٢,٦٤٠,٣٧٦) (ر.م. ٢٢,٦٤٠,٣٧٦)

۶۶. این روزاتی میگذرد و باید از آنها برخوردار باشیم.

١٥٣٦ (٢٠١٩) ٥٤٠ (٥٧) ٢٠١٩ (٢٠١٩) ٥٤٠ (٥٧)

۲۴ نویسنده این مقاله را در اینجا آورده ایم.

۶۶- گردشگری اسلامی و اسلامیتگردی

(4,317,600) 15.42

• ۹۸۹۸۰۶۲۱۱۵۷۳

۶۵۷ میلادی، ۱۰۰۰ میلادی، ۱۵۷۸ میلادی، ۱۹۳۷ میلادی، ۲۰۰۰ میلادی

وَمِنْهُمْ مَنْ يَرْجُو أَنْ يُنْجَى إِلَيْهِ مِنْ حَيْثُ شَاءَ وَمَا يَرْجُوا مِنْ ذَلِكُمْ هُمْ بِهِ لَا يَعْلَمُونَ

وَمِنْهُ دُرْجَاتٌ كَثِيرَةٌ فَمَنْ يَعْمَلْ مِثْقَالَ ذَرَّةٍ بَعْدَ إِذْ سَرَّهُ اللَّهُ مَنْ يَرَهُ وَمَنْ يَنْهَا فَلَهُ كُلُّ حُظُّهُ وَمَنْ يَنْهَا فَلَهُ كُلُّ حُسْنَتِهِ

2013-02-28 19

سے ملکہ حضرت پیر حبیبی علیہ السلام پر حضور امام جعفر صادق علیہ السلام کا
تاج پہنچا۔

1 : የዕለታዊ ሪፖርት በኋላ 14 አንቀጽ 2013 ዓ.ም

الإذن بالطبع

جنة عجمان للتنمية
الإذن بالطبع

الإذن بالطبع

رقم الإذن: 86/2013

التاريخ: 15/09/2013

عنوان المنشآت:

التاريخ:

2013 موسم أسلوب حي عجمان للمطارات والنقل البري طرق تجسس وتحري وتحري وتحري

تحري وتحري وتحري

تحري وتحري وتحري

مكتوب

جعفر عبد الله

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



ମୁଖ୍ୟ ପାତାରେ କିମ୍ବା କିମ୍ବା

3441	Jawica
14:22	14.8.13
H.B.S Habiba	د. جعفر عبد الله

✓
14/08/2013

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ حَمْدُ لِلَّهِ رَبِّ الْعَالَمِينَ حَمْدُ لِلَّهِ رَبِّ الْعَالَمِينَ

۶۶۰۱۱۰۰۰۰۰۰۰۰۰

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29 مئون سو ۲۰۱۲ء میں پاکستانی ادارے کی طرف سے ۵۷-د/۱/۲۰۱۳/۱۴ نمبر کا ۲۶ جولائی ۲۰۱۳ء کی تاریخ پر فرمان دادا۔

جولان ۲۰۱۳



2

1434 ፳፻፲፭ ፪

2013 二〇一三 14

وَسَلَامٌ عَلَى الْمُرْسَلِينَ

۰۷۰۰۰۰۰۰۰۰۰۰۰۰۰

٣- جمیع مبالغ مذکوره در این جدول مبلغ مجموعی از مبالغ مذکور در جدول ۳.۲ (نمودار ۳.۲) می‌باشد.

۳. روزهایی که در آنها میتوانند مسافتی کمتر از ۱۰ کیلومتر را پوشید
۳.۲ در هر روز میتوانند مسافتی کمتر از ۵ کیلومتر را پوشید
تاریخی که در آنها میتوانند مسافتی کمتر از ۱۰ کیلومتر را پوشید
۲۰۱۳ و تاریخی که در آنها میتوانند مسافتی کمتر از ۵ کیلومتر را پوشید

فَرَأَهُمْ مُهَاجِرِينَ إِذْ أَرْسَلْنَا إِلَيْهِمْ مُّصَانِعَنَا فَلَمْ يَرْجِعُوهُمْ إِلَيْنَا

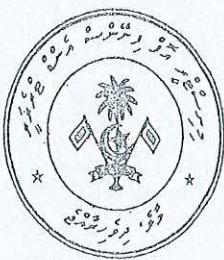
برگزیده از مجموعه کتبی این اثر در سال ۱۳۹۰ خورشیدی توسط دانشگاه علوم پزشکی ایران منتشر شد.

৩৭৯ পঞ্চাশ পঞ্চাশ পঞ্চাশ পঞ্চাশ পঞ্চাশ

جـ ٣٢٠٠,٠٠٠	مـ ٣٢٠٠,٠٠٠	جـ ٣٩٥٧,٢٠	جـ ٧٥٧,٧٢٠	جـ ٢٠٣٧
٢%				
٤				
٤٢٤	(جـ ٣٩٥٧,٢٠)	جـ ٣٩٥٧,٢٠	جـ ٧٥٧,٧٢٠	جـ ٢٠٣٧
٣,٩٥٧,٢٠	مـ ٣,٩٥٧,٢٠	٣,٢	٣,٢	٣,٢
٧٥٧,٧٢٠	جـ ٧٥٧,٧٢٠	٧٥٧,٧٢٠	٧٥٧,٧٢٠	٧٥٧,٧٢٠
٢٠٣٧	مـ ٢٠٣٧	٢٠٣٧	٢٠٣٧	٢٠٣٧

የመ/ቤት ልማት ተቋማት አገልግሎት የዕለታዊ የሕዝብ ማረጋገጫ ተቋማት ተቋማት
24 ዓ.ም. ቀን ተቋማት ስርዓት የዕለታዊ የሕዝብ ማረጋገጫ ተቋማት ተቋማት

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15 ዓ.ም. ቀን ተቋማት ስርዓት የዕለታዊ የሕዝብ ማረጋገጫ ተቋማት ተቋማት
3:2 ዓ.ም. ቀን ተቋማት ስርዓት የዕለታዊ የሕዝብ ማረጋገጫ ተቋማት ተቋማት
11,173,185 (አንቀጽ የዕለታዊ የሕዝብ ማረጋገጫ ተቋማት ተቋማት ስርዓት የዕለታዊ የሕዝብ ማረጋገጫ ተቋማት ተቋማት)



ORIGINAL: ARABIC

LOAN NUMBER: _____

DRAFT LOAN AGREEMENT

DEVELOPMENT OF WATER SUPPLY AND SEWERAGE FACILITIES PROJECT
IN FUVAHMULAH ISLAND

BETWEEN

REPUBLIC OF MALDIVES

AND

KUWAIT FUND FOR ARAB ECONOMIC DEVELOPMENT

DATED: _____



P

LOAN AGREEMENT

Agreement, dated _____ between Republic of Maldives (hereinafter referred to as the Borrower) and Kuwait Fund for Arab Economic Development (hereinafter referred to as the Fund).

Whereas, the Borrower has requested the Fund to assist in the financing of the Development of Water Supply and Sewerage Facilities Project in Fuvahmulah Island (hereinafter referred to as the Project);

Whereas, the Borrower is willing to provide such further sums as may be necessary to complete the financing costs of the project;

Whereas, the purpose of the Fund is to assist Arab and other developing countries in developing their economies and to provide them with loans required for the execution of their development projects and programmes;

Whereas, the Fund is convinced of the importance and benefits of the project in contributing to the social stability, environmental improvement as well as the development of the borrower's economy.

Whereas, the Fund has agreed, in view of the foregoing, to make a loan, hereinafter referred to as the loan, to the Borrower on the terms and conditions set forth in this Agreement.

Now therefore, the parties hereto agree as follows:

ARTICLE I

The Loan; Interest and Other Charges; Repayment; Place of Payment

SECTION 1.01. The Fund agrees to lend to the Borrower, on the terms and conditions set forth in this Agreement or herein referred to, an amount equivalent to three million two hundred thousand Kuwaiti Dinars (K.D. 3,200,000).

SECTION 1.02. The Borrower shall pay interest at the rate of one and one half per cent (1.5%) per annum on the principal amount of the Loan withdrawn and outstanding from time to time. Interest shall accrue from the respective dates on which amounts shall be so withdrawn.

SECTION 1.03. An additional charge of one half of one per cent (1/2 of 1%) per annum on the amounts withdrawn from the Loan and outstanding from time to time shall be paid to meet the administrative expenses and the expenses of implementing this Agreement.

SECTION 1.04. In the event that the Fund, pursuant to Section 3.02 of this Agreement, enters into a special irrevocable commitment at the request of the Borrower, a charge for such special commitment shall be paid by the Borrower at the rate of one half of one per cent (1/2 of 1%) per annum on the principal amount of any such special commitments outstanding from time to time.

SECTION 1.05. Interest and other charges shall be computed on the basis of a 360-day year of twelve 30-day months for any period less than a full one half of a year.

SECTION 1.06. The Borrower shall repay the principal of the Loan in accordance with the provisions for amortization of the Loan set forth in Schedule 1 to this Agreement.

SECTION 1.07. Interest and other charges shall be payable semi-annually on 1st of February and 1st of August in each year.

SECTION 1.08. The Borrower shall have the right, upon payment of all accrued interest and all other charges, and upon not less than 45 days' notice to the Fund, to repay in advance of maturity: (a) all of the principal amount of the Loan at the time outstanding or (b) all of the principal amount of any one or more maturities, provided that after such prepayment there shall not be outstanding any portion of the Loan maturing after the portion to be prepaid.

SECTION 1.09. The principal of, and interest and other charges on, the Loan shall be paid at Kuwait or at such other places as the Fund shall reasonably request.

ARTICLE II

Currency Provisions

SECTION 2.01. All accounts of the financial transactions made pursuant to this Agreement shall be, and all sums falling due thereunder shall be payable, in Kuwaiti Dinars.

SECTION 2.02. The Fund will purchase, at the request of and acting as an agent for the Borrower, such currencies as may be required for payment of the cost of goods to be financed from the Loan under this Agreement, or for reimbursement of such cost in the currency in which it was actually incurred. The amount which shall be deemed to have been withdrawn from the Loan in any such case shall be equal to the amount of Kuwaiti Dinars required for the purchase of the respective amount of foreign currency.

SECTION 2.03. When repayment of principal or payment of interest and other charges on the Loan is being made, the Fund may, at the request of and acting as an agent for the Borrower, purchase the amount of Kuwaiti Dinars required for such repayment or payment, as the case may be, against payment by the Borrower of the amount required for such purchase in currency or currencies, as may be acceptable from time to time to the Fund.

Any payment to the Fund required under this Agreement shall not be deemed to have been effected except from the time and to the extent that Kuwaiti Dinars have actually been received by the Fund.

SECTION 2.04. Whenever it shall be necessary for the purposes of this Agreement to determine the value of one currency in terms of another, such value shall be as reasonably determined by the Fund.

ARTICLE III

Withdrawal and Use of Proceeds of the Loan

SECTION 3.01. The Borrower shall be entitled to withdraw from the Loan amounts expended or to be expended for the Project in accordance with the provisions of this Agreement.

Except as the Fund may otherwise agree, no amount shall be withdrawn from the Loan on account of expenses incurred prior to 31st of October 2013 or to finance local costs of goods produced in the territories of the Borrower.

SECTION 3.02. Upon the Borrower's request and upon such terms and conditions as shall be agreed upon between the Borrower and the Fund, the Fund may enter into special irrevocable commitments in writing to pay amounts to the Borrower or others in respect of the cost of goods to be financed under this Agreement notwithstanding any subsequent cancellation of the Loan or suspension of the right of the Borrower to make withdrawals from the Loan.

SECTION 3.03. When the Borrower shall desire to withdraw any amount from the Loan or to request the Fund to enter into a special commitment pursuant to Section 3.02, the Borrower shall deliver to the Fund a written application in such form, and containing such statements, agreements and other documents as the Fund shall reasonably request. Applications for withdrawal, with the necessary documentation as hereinafter in this Article provided, shall, except as the Borrower and the Fund shall otherwise agree, be made promptly in relation to expenditures for the Project.

SECTION 3.04. The Borrower shall furnish to the Fund such documents and other evidence in support of the application for withdrawal as the Fund shall reasonably request, whether before or after the Fund shall have permitted any withdrawal requested in the application.

SECTION 3.05. Each application for withdrawal and the accompanying documents and other evidence must be sufficient in form and substance to satisfy the Fund that the Borrower is entitled to withdraw from the Loan the amount applied for and that the amount to be withdrawn from the Loan is to be used only for the purposes specified in this Agreement.

SECTION 3.06. The Borrower shall apply the proceeds of the Loan exclusively to financing the reasonable cost of goods required to carry out the Project described in Schedule 2 to this Agreement. The specific goods to be financed out of the proceeds of the Loan and the methods and procedures for procurement of such goods shall be determined by agreement between the Borrower and the Fund, subject to modification by further agreement between them.

SECTION 3.07. The Borrower shall cause all goods financed out of the proceeds of the Loan to be used exclusively in the carrying out of the Project.

SECTION 3.08. Payment by the Fund of amounts which the Borrower is entitled to withdraw from the Loan shall be made to or on the order of the Borrower.

SECTION 3.09. The right of the Borrower to make withdrawals from the Loan shall terminate on 31st December 2017 or such other date as may from time to time be agreed between the Borrower and the Fund.

ARTICLE IV

Particular Covenants

SECTION 4.01. The Borrower shall make arrangements satisfactory to the Fund for making the proceeds of the Loan to the Ministry of Environment and Energy (hereinafter called the Ministry) on terms and conditions which shall at all times be satisfactory to the Fund.

SECTION 4.02. The Borrower undertakes that the project shall be executed and shall, at all times be maintained and operated in conformity with sound engineering and administrative practices and in conformity with the provisions of this Agreement.

SECTION 4.03. (a) The Borrower shall entrust the execution of the project to the Ministry of Environment and Energy through the Water and Sanitation Department (hereinafter referred to as the Department). To that end the Borrower shall invest the Ministry with such power, and accord it with such facilities as shall be necessary to enable it to execute the project in a manner.

(b) Without prejudice to the precedent paragraph and upon completion of the project, the Borrower shall entrust FENAKA Corporation Limited (hereinafter called FENAKA with the operation and maintenance of the Project.

The Borrower shall inform the Fund of any proposed action which would affect the nature or constitution of the Ministry and FENAKA and shall afford the Fund all reasonable opportunity, in advance of the taking of any action concerning FENAKA to exchange views with the Borrower with respect thereto.

SECTION 4.04. The Borrower shall: A) make or cause to be made available promptly as needed all other sums, which shall be required, in addition to this loan, for carrying out the project. All such sums to be made available on terms and conditions satisfactory to the Fund. B) Without prejudice to the preceding paragraph, the Borrower shall ensure, for the purpose of conducting sound operation and maintenance of all the components of the project, that sufficient budget is allocated for that purpose. The Borrower shall also ensure that FENAKA had attributed enough financial and human resources to enable it to cover the maintenance costs of the vacuum stations in the project area.



SECTION 4.05. Except as the Fund and the Borrower may otherwise agree, contracts for the execution of the project shall be awarded as a result of international competitive bidding in accordance with procedures, and subject to terms and conditions, acceptable to the Fund.

SECTION 4.06. The Borrower undertakes that the Ministry shall employ consultants with wide experience to assist in the implementation of the project. Such consultants, as well as the terms and conditions of their appointment, shall be acceptable to the Fund.

SECTION 4.07. For the purpose of carrying out the project, the Borrower shall cause the Ministry to:

- (a) Set up a Project Implementation and Co-ordination Unit, before 31 August 2013, or any other date acceptable to the Fund, to be responsible for the technical and financial aspects of the project implementation, and whose composition and functions shall be acceptable to the Fund.
- (b) Appoint qualified and experienced engineer with adequate qualification (hereinafter referred to as the Project Manager) – to act as a full time Project Manager throughout the period of the project implementation. The Borrower undertakes to furnish the Fund with the Project Manager's curriculum vitae and detailed job description for comment before his appointment.
- (c) The Borrower shall lay at the Project Manager's disposal a suitable equipped office staffed with an adequate number of properly qualified personnel, and shall invest him with such powers and extend to him such facilities that may be necessary to enable him to ensure that the project shall be executed efficiently as above.

SECTION 4.08. The Borrower undertakes at all times to ensure that FENAKA has available sufficient resources to be able to operate and maintain the project. To that end, the Borrower shall encourage and enable FENAKA to gradually rely upon its internally generated resources to operate and maintain the project.

SECTION 4.09. The Borrower shall A) cause FENAKA to continue to take effective and prompt measures to improve its billing and collection procedures.

B) Undertake to make periodic review of the tariff of potable water sold by FENAKA, and to adjust said tariff as and when needed in order to generate annual revenues sufficient to cover FENAKA's annual operations and maintenance costs and allow the supply of potable water to be assured, in particular to low income populations.

SECTION 4.10. The Borrower undertakes to A) ensure that the opening and audited financial statements, including the balance sheet, income statement and cash flow statement of FENAKA shall be furnished to the Fund for its review and comments as soon as this is completed and audited.

B) Shall cause FENAKA to have its accounts and financial statements (balance sheet, income statement and related statements) for each fiscal year audited in accordance with sound auditing practices consistently applied by an independent auditor acceptable to the fund and accept as the Fund may otherwise agree, shall cause FENAKA to furnish the Fund not later than 6 months from the end of each fiscal year with certified copies of its audited statements together with the report of the auditor, and any other information concerning its accounts, financial statements, records and expenditures as the Fund shall from time to time reasonably request.

SECTION 4.11. The Borrower will take the necessary measures to prevent the disposal of any waste in the sewage system which may have adverse effects on the proper treatment of sewage and the proper re-use of sewage effluent. For this purpose the Borrower shall issue the appropriate regulations for the required treatment of industrial, chemical, brackish, waste and others, prior to its disposal in the sewage system.

SECTION 4.12. A) The Borrower undertakes all the necessary protective measures to prevent the spread of diseases, as a result of collecting sewage and solid waste particularly as a result of the increased availability of potable water and the disposal of solid waste. The Borrower undertakes the necessary measures to protect labourers, workers and personnel who during the performance of their duties, will be dealing with the disposals of raw sewage and solid waste. B) Without prejudice to the preceding paragraphs, the Borrower shall entrust a specialized agency to monitor the project area to ensure no contagious diseases spread as a result of the operation of the project.

SECTION 4.13. The Borrower undertakes to take the necessary action to convince the consumers of the value of reducing water consumption by conducting appropriate social awareness campaigns using appropriate means.

SECTION 4.14. The Borrower shall A) take all the necessary measures to reduce the unaccounted-for water by conducting regular leakage detection surveys, checking the accuracy over water meters, installing appropriate water meters on all major valves, hydrants and preventing the over flow or leakage or reservoirs and tanks. B) Coordinate with FENAKA to take suitable measures to safely and efficiently utilize the sludge resulting from the wastewater treatment operation in agriculture and soil improvement. C) During project implementation, prepare studies for identifying efficient and economical alternatives for the treated sewage effluent utilization. The Borrower shall furnish the outcome of these studies to the Fund for review.

SECTION 4.15. The Borrower shall A) prepare an Environmental Impact Assessment Study that includes the design and operation of the components of the project in accordance with sound international practices. B) Ensure that the existing domestic and commercial solid wastes disposal site is re-designed to eliminate any negative impacts on the groundwater aquifer.

SECTION 4.16. The Borrower shall maintain or cause the Ministry to maintain records adequate for identifying the goods financed out of the proceeds of the loan, to disclose the use thereof in the Project, to record the progress of the Project (including the cost thereof), and to reflect in accordance with consistently maintained sound accounting practices, the operation and financial position of the FENAKA. The Borrower shall afford all reasonable opportunity for accredited representatives of the Fund to make visits for purposes related to the Loan and to inspect the Project, the goods and any relevant records and documents and shall furnish the Fund all such information as the Fund shall reasonably request concerning the expenditure of the proceeds of the Loan, the Project, the goods and the operations and financial position of FENAKA.

SECTION 4.17. The Borrower shall operate and maintain the Project or cause it to be operated and maintained, and also to operate and maintain structures and other works and facilities not included in the Project but necessary to the proper and efficient operation thereof, in accordance with sound engineering and financial practices.

SECTION 4.18. The Borrower and the Fund shall cooperate fully to assure that the purposes of the Loan will be accomplished. To that end, the Borrower shall furnish the Fund every, three months from the date of this Agreement with the periodic reports on the execution of the Project and general status of the Loan as well as all other information as the Fund shall reasonably request.

The Borrower and the Fund shall from time to time exchange views through their representatives with regard to matters relating to the purposes of the Loan and the maintenance of the service thereof. The Borrower shall promptly inform the Fund of any condition which interferes with or threatens to interfere with, the accomplishment of the purposes of the Loan (including substantial increase in the cost of the Project) or the maintenance of the service thereof.

SECTION 4.19. It is the mutual intention of the Borrower and the Fund that no other external debt shall enjoy any priority over the Loan by way of a lien hereafter created on governmental assets. To that end, the Borrower undertakes that, except as the Fund shall otherwise agree, if any lien shall be created on any assets of the Borrower as security for an external debt, such lien will ipso facto equally and ratably secure the payment of the principal of, and interest and other charges on, the Loan, and that in the creation of any such lien express provision will be made to that effect; provided, however, that the foregoing provisions of this Section shall not apply to:

- (i) Any lien created on property, at the time of purchase thereof, solely as security for the payment of the purchase price of such property;
- (ii) any lien on commercial goods to secure a debt maturing not more than one year after the date on which it is originally incurred and to be paid out of the proceeds of the sale of such commercial goods; or
- (iii) any lien arising in the ordinary course of banking transactions and securing a debt maturing not more than one year after its date.

The term "assets of the Borrower" as used in this Section includes assets of the Borrower or of any of its political subdivisions or of any entity owned or controlled by the Borrower or by any such political subdivisions, including the Central Bank of the Borrower or any other institution performing the functions of a Central Bank and the term lien includes mortgages, pledges, charges, privileges and priorities of any kind.

SECTION 4.20. The Borrower shall insure or cause to be insured with responsible insurers all goods financed out of the proceeds of the Loan. Such insurance shall cover such marine, transit and other hazards incident to purchase and importation of the goods into the territories of the Borrower and delivery thereof to the site of the Project, and shall be for such amounts as shall be consistent with sound commercial practices. Such insurance shall be payable in the currency in which the cost of the goods insured thereunder shall be payable, or in freely convertible currency.

The Borrower shall take out and maintain or cause to be taken out and maintained, with responsible insurers, insurance against risks related to the Project in such amounts as shall be consistent with sound commercial practices.

SECTION 4.21. The Borrower shall take or cause to be taken all action which shall be necessary on its part to execute the Project and shall not take, or permit to be taken, any action which would prevent or interfere with the execution or operation of the Project or the performance of any of the provisions of this Agreement.

SECTION 4.22. The principal of, and interest on the Loan and all other charges shall be paid without deduction for, and free from any tax in force or charges under the laws of the Borrower or laws in effect in its territories whether at present or in the future.

SECTION 4.23. This Agreement shall be free from any taxes, imposts, levies, fees and dues of any nature imposed under the laws of the Borrower or laws in effect in its territories, or in connection with the execution, issue, delivery or registration thereof and the Borrower shall pay or cause to be paid all such taxes, imposts, levies and dues, if any, imposed under the laws of the country or countries in whose currency the Loan is payable or laws in effect in the territories of such country or countries.

SECTION 4.24. The principal of, and interest and other charges on, the Loan shall be paid free from all restrictions including exchange restrictions imposed under the laws of the Borrower or laws in effect in its territories.

SECTION 4.25. All Fund documents, records, correspondence and similar material shall be considered by the Borrower as confidential matters and the Borrower shall accord the Fund in respect thereof full immunity from censorship and inspection of publications.

SECTION 4.26. All Fund assets and income shall be exempt from nationalization, confiscation and seizure.

ARTICLE V

Cancellation and Suspension

SECTION 5.01. The Borrower may by notice to the Fund cancel any amount of the Loan which the Borrower shall not have withdrawn prior to the giving of such notice, except that the Borrower may not so cancel any amount of the Loan in respect of which the Fund shall have entered into a special commitment pursuant to Section 3.02 of this Agreement.

SECTION 5.02. If any of the following events shall have happened and be continuing, the Fund may by notice to the Borrower suspend in whole or in part the right of the Borrower to make withdrawals from the Loan:

- (a) A default shall have occurred in the payment of principal or interest or any other payment required under this Agreement or any other Loan Agreement between the Borrower and the Fund;
- (b) A default shall have occurred in the performance of any other covenant or agreement on the part of the Borrower under this Agreement;
- (c) The Fund shall have suspended in whole or in part the right of the Borrower to make withdrawals under any other loan agreement between the Borrower and the Fund because of a default on the part of the Borrower;
- (d) An extraordinary situation shall have arisen which shall make it improbable that the Borrower will be able to perform its obligations under this Agreement.

Any event occurring after the date of this Agreement and prior to the effective date which would have entitled the Fund to suspend the Borrower's right to make withdrawals if this Agreement had been effective on the date such event occurred, will entitle the Fund to suspend withdrawals under the Loan exactly as if it had occurred after the effective date.

The right of the Borrower to make withdrawals under the Loan shall continue to be suspended in whole or in part, as the case may be, until the event or events which gave rise to such suspension shall have ceased to exist or until the Fund shall have notified the Borrower that the right to make withdrawals has been restored; provided, however, that in the case of any such notice of restoration the right to make withdrawals shall be restored only to the extent and subject to the conditions specified in such notice, and no such notice shall affect or impair any right, power or remedy of the Fund in respect of any other subsequent event described in this Section.

SECTION 5.03. If any event specified in paragraph (a) of Section 5.02 shall occur and shall continue for a period of thirty days after notice thereof shall have been given by the Fund to the Borrower, or if any event specified in paragraphs (b), (c) and (d) of Section 5.02 shall occur and shall continue for a period of sixty days after notice thereof shall have been given by the Fund to the Borrower, then at any subsequent time during the continuance thereof, the Fund at its option, may declare the principal of the Loan to be due and payable immediately, and upon any such declaration such principal shall become due and payable immediately, anything in this Agreement to the contrary notwithstanding.

SECTION 5.04. If (a) the right of the Borrower to make withdrawals from the Loan shall have been suspended with respect to any amount of the Loan for a continuous period of thirty days, or (b) the date specified in Section 3.09 as the Closing Date an amount of the Loan shall remain unwithdrawn, the Fund may by notice to the Borrower terminate the right of the Borrower to make withdrawals with respect to such amount. Upon the giving of such notice such amount of the Loan shall be cancelled.

SECTION 5.05. No cancellation or suspension by the Fund shall apply to amounts subject to any special commitment entered into by the Fund pursuant to Section 3.02 except as expressly provided in such commitment.

SECTION 5.06. Except as the Fund may otherwise agree any cancellation shall be applied pro rata to the several installments of the principal amount of the Loan maturing after the date of such cancellation.

SECTION 5.07. Notwithstanding any cancellation or suspension, all the provisions of this Agreement shall be continued in full force and effect except as in this Article specifically provided.

ARTICLE VI

Enforceability of this Agreement; Failure to Exercise Rights; Arbitration

SECTION 6.01. The rights and obligations of the Fund and the Borrower under this Agreement shall be valid and enforceable in accordance with their terms notwithstanding any local law to the contrary. Neither the Borrower nor the Fund shall be entitled under any circumstances to assert any claim that any provision of this Agreement is invalid or unenforceable for any reason.

SECTION 6.02. No delay in exercising, or omission to exercise, any right, power or remedy accruing to either party under this Agreement upon any default shall impair any such right, power or remedy, or be construed to be a waiver thereof or an acquiescence in such default, nor shall the action of such party in respect of any default, or any acquiescence in any default, affect or impair any right, power or remedy of such party in respect of any other or subsequent default.

SECTION 6.03. Any controversy between the parties to this Agreement and any claim by either party against the other arising out of this Agreement shall be determined by agreement of the parties, and failing such agreement the controversy or claim shall be submitted to arbitration by an Arbitral Tribunal as provided in the following Section.

SECTION 6.04. The Arbitral Tribunal shall consist of three arbitrators appointed as follows: one arbitrator shall be appointed by the Borrower; the second arbitrator shall be appointed by the Fund; and the third arbitrator (hereinafter sometime called the Umpire) shall be appointed by agreement of the parties. In case any arbitrator appointed in accordance with this Section shall resign, die or become unable to act, a successor arbitrator shall be appointed in the same manner as hereinbefore prescribed for the appointment of the original arbitrator, and such successor, shall have all the powers and duties of such original arbitrator.

Arbitration proceedings may be instituted under this Section upon notice by either party to the other. Such notice shall contain a statement setting forth the nature of the controversy or claim to be submitted to arbitration, the nature and extent of the relief sought, and the name of the arbitrator appointed by the party instituting such proceedings.

Within thirty days after the giving of such notice, the other party shall notify the party instituting the proceedings of the name of the arbitrator appointed by such other party and failing this, such arbitrator shall be appointed by the President of the International Court of Justice upon the request of the party instituting the proceedings.

If within sixty days after the giving of the notice instituting the arbitration proceedings the parties shall not have agreed upon the Umpire, either party may request the President of the International Court of Justice to appoint the Umpire.

The Arbitral Tribunal shall convene for the first time at such time and place as shall be fixed by the Umpire. Thereafter, the Arbitral Tribunal shall determine where and when it shall sit.

Subject to the provision of this Section and except as the parties shall otherwise agree, the Arbitral Tribunal shall decide all questions relating to its competence and shall determine its procedure so as to afford a fair hearing to each party and shall determine the matters submitted to it whether both parties appear before it or in default of appearance of either of them. Decisions of the Arbitral Tribunal shall be by majority vote and it shall render its award in writing. Such award shall be signed, at least, by a majority of the members of the Arbitral Tribunal and a signed counterpart thereof shall be transmitted to each party. The award of the Arbitral Tribunal rendered in accordance with the provisions of this Section shall be final and binding upon the parties who shall abide by, and comply with such award.

The parties shall fix the amount of remuneration or fees of the arbitrators and such other persons as shall be required for the conduct of the arbitration proceedings. If the parties shall not agree on such amount before the Arbitral Tribunal shall convene, the Arbitral Tribunal shall fix such amount as shall be reasonable under the circumstances. Each party shall defray its own expenses in the arbitration proceedings. The costs of the Arbitral Tribunal shall be divided between and borne equally by the parties. Any question concerning the division of the costs of the Arbitral Tribunal or the procedure for payment of such costs shall be determined by the Arbitral Tribunal.

The Arbitral Tribunal shall apply the principles common under the current laws of the Borrower and the State of Kuwait, as well as the principles of justice.

SECTION 6.05. The provisions for arbitration set forth in the previous Section shall be in lieu of any other procedure for the determination of controversies between the parties to this Agreement and any claim by either party against the other party arising thereunder.

SECTION 6.06. Service of any notice or process in connection with any proceedings under this Article may be made in the manner provided in Section 7.01. The parties to this Agreement may waive any and all other requirements for the service of any such notice or process.

ARTICLE VII

Miscellaneous Provisions

SECTION 7.01. Any notice or request required or permitted to be given or made under this Agreement shall be in writing. Except as otherwise provided in Section 8.03, such notice or request shall be deemed to have been duly given or made when it shall be delivered by hand or by mail, telex, telegram or cable to the party to which it is required or permitted to be given or made at such party's address specified in this Agreement, or at such other address as such party shall have designated by notice to the party giving such notice or making such request.

SECTION 7.02. The Borrower shall furnish to the Fund sufficient evidence of the authority of the person or persons who will sign the applications provided for in Article III or who will, on behalf of the Borrower, take any other action or execute any other documents required or permitted to be taken or executed by the Borrower under this Agreement, and the authenticated specimen signature of each such person.

SECTION 7.03. Any action required or permitted to be taken, and any documents required or permitted to be executed, under this Agreement on behalf of the Borrower may be taken or executed by the Minister in charge of Finance or any person thereunto authorized in writing by him. Any modification or amplification of the provisions of this Agreement may be agreed to on behalf of the Borrower by written instrument executed on behalf of the Borrower by his aforementioned representative or any person thereunto authorized in writing by him; provided that, in the opinion of such representative, such modification or amplification is reasonable in the circumstances and will not substantially increase the obligations of the Borrower under this Agreement. The Fund may accept the execution by such representative or other person of any such instrument as conclusive evidence that in the opinion of such representative any modification or amplification of the provisions of this Agreement effected by such instrument is reasonable in the circumstances and will not substantially increase the obligations of the Borrower thereunder.

ARTICLE VIII

Effective Date: Termination

SECTION 8.01. This Agreement shall not become effective until evidence satisfactory to the Fund shall have been furnished to the Fund that the execution and delivery of this Agreement on behalf of the Borrower have been duly authorized or ratified by all necessary governmental action.

SECTION 8.02. As part of the evidence to be furnished pursuant to Section 8.01, the Borrower shall furnish to the Fund an opinion or opinions of competent authority showing that this Agreement has been duly authorized or ratified by, and executed and delivered on behalf of, the Borrower and constitutes a valid and binding obligation of the Borrower in accordance with its terms.

SECTION 8.03. Except as shall be otherwise agreed by the Fund and the Borrower, this Agreement shall come into force and effect on the date upon which the Fund dispatches by cable to the Borrower notice of its acceptance of the evidence required by Section 8.01.

SECTION 8.04. If all acts required to be performed pursuant to Section 8.01 shall not have been performed before 90 days after the signature of this Agreement or such other date as shall be agreed upon by the Fund and the Borrower, the Fund may at any time thereafter at its option terminate this Agreement by notice to the Borrower. Upon the giving of such notice this Agreement and all obligations of the parties thereunder shall forthwith terminate.

SECTION 8.05. If and when the entire principal amount of the Loan and all interest and other charges which shall have accrued on the Loan shall have been paid, this Agreement and all obligations of the parties thereunder shall forthwith terminate.

ARTICLE IX

Definitions

SECTION 9.01. Except where the context otherwise requires, the following terms have the following meanings wherever used in this Agreement or any schedule hereto:

- (1) The term 'Project' means the Development of Water and Sewerage Facilities Project in Fuvahmulah for which the Loan is granted, as described in Schedule 2 to this Agreement and as the description thereof shall be amended from time to time by agreement between the Fund and the Borrower.
- (2) The term 'goods' means equipment, supplies and services which are required for the Project. Wherever reference is made to the cost of any goods, such cost shall be deemed to include the cost of importing such goods into the territories of the Borrower.

The following addresses are specified for the purposes of Section 7.01:

For the Borrower:

Ministry of Finance and Treasury
Male, Republic of Maldives

Alternative address for faxes and E-Mail:

FAX	E-Mail
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(960) 3324432	dmd@finance.gov.mv
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For the Fund:

Kuwait Fund for Arab Economic Development
P.O. Box 2921, Safat
Kuwait. - 13030

Alternative address for faxes and E-Mail:

FAX	E-Mail
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(965) 22999190	<u>operations@kuwait-fund.org</u>
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IN WITNESSETH WHEREOF the parties hereto acting through their representatives thereunto duly authorized, have caused this Agreement to be signed in their respective names and delivered in Male, in two copies, each considered an original and all to the same and one effect, as of the day and year first above written.

Kuwait Fund for Arab
Economic Development

Republic of Maldives

By: _____
(Authorized Representative)

By: _____
(Authorized Representative)

SCHEDULE (1)

REPAYMENT PROVISIONS

The amount of principal withdrawn from loan shall be repaid in 40 semiannual installments, the amount and order of sequence of each being as set forth in the attached schedule. The first of these installments shall be due on the first date on which any interest or other charges on the loan shall fall due, in accordance with the provisions of the Loan Agreement, after the elapse of a grace period of 4 years, commencing from the date on which the Fund pays, any amount from the loan pursuant to the first withdrawal application made by the Borrower or the date on which the Fund issues an undertaking pursuant to Section 3.02 of the Loan Agreement, in case the first withdrawal application requests the issue of such undertaking, whichever is earlier of the two dates. The remaining installments for the repayment of the principal shall be due consecutively, every six-month, after the date on which the first installment falls due.

ANNEX TO SCHEDULE 1
AMORTIZATION SCHEDULE

Sl. No.	Payment of Principal (Expressed in Kuwaiti Dinars)
1.	80,000
2.	80,000
3.	80,000
4.	80,000
5.	80,000
6.	80,000
7.	80,000
8.	80,000
9.	80,000
10.	80,000
11.	80,000
12.	80,000
13.	80,000
14.	80,000
15.	80,000
16.	80,000
17.	80,000
18.	80,000
19.	80,000
20.	80,000
21.	80,000
22.	80,000
23.	80,000
24.	80,000
25.	80,000
26.	80,000
27.	80,000
28.	80,000
29.	80,000
30.	80,000
31.	80,000
32.	80,000
33.	80,000
34.	80,000
35.	80,000
36.	80,000
37.	80,000
38.	80,000
39.	80,000
40.	80,000
Total	3,200,000

B74

SCHEDULE 2

DESCRIPTION OF THE PROJECT

The Project aims at meeting the current and future demand for safe drinking water, protect and preserve underground aquifers, protect general health and the environment in Fuvahmulah island with current population of about 11,000 inhabitants and that by installing an integrated drinking water facility in addition to the construction of sewerage networks including a sewage treatment plant.

The proposed project consists of installation of drinking water networks including the installation of an integrated drinking water system, which consists of rain water harvesting scheme and a Reverse Osmoses water desalination plant with all necessary fitting, valves and meters. The project also consists of installation of sewerage networks with two sewage vacuum stations and a sewage treatment plant with a sea outfall and all necessary ancillaries.

The following are major components of the project:

1. Supply and installation of about 47 km of HDPE pipelines for drinking water networks with diameters ranging from 80mm to 150mm with all necessary fittings and accessories.
2. Supply and installation about 2,200 domestic and commercial meters with drinking water house connection accessories and equipment and instrumentation necessary for meters calibration and maintenance workshop.
3. Supply , installation and construction of a community rainwater harvesting scheme that include, collection tanks, HDPE pipelines and concrete storage tanks with total capacity of about 7,000 m³ distributed in about 4 locations in the island with all necessary ancillaries of which 3,500 m³ will be constructed with the current project .
4. Supply and Installation of a reverse Osmoses plant that consists of two sets with total capacity of about 700 m³/d and enough space for a third set with all supporting civil works, electro- mechanical equipment and instrumentation and control including emergency generators and distribution tanks.
5. Supply and installation of about 22km of HDPE for the two zones of vacuum sewer pipelines with diameters ranging from 110mm to 250mm with all necessary fittings and accessories.
6. Supply and installation of 2 sewage vacuum stations with all civil, electrical and mechanical works.

7. Supply and installation of an activated sludge extended aeration treatment plant with a capacity about 3,000 m³/d with sea outfall and all the necessary civil, mechanical and electrical works of which two units with total capacity of about 2,000 m³/d will be constructed with the current project with enough space for installing the third unit at future expansion.
8. Construction of an administrative building with all its necessary ancillaries.
9. Supply of necessary operation and maintenance equipment.
10. Institutional support including supply office furniture, vehicles, office communication system, computer hardware and software and the necessary personnel training.
11. Consultancy services for the preparation of the basic design, tender document , project supervision and the preparation of the Environmental Impact Assessment Study .

It is envisaged that the project implemenetion will commence at the beginning of 2014 and will be completed by the end of 2016.

REPUBLIC OF MALDIVES

Date: _____

Kuwait Fund for Arab Economic Development
P.O. Box 2921, Safat
Kuwait, 13030

Gentlemen,

With reference to Sections 3.06 and 4.04 of the Loan Agreement signed between us today for the financing of the Development of Water Supply and Sewerage Facilities in Fuvahmulah Island Project, we attach herewith a List of Goods showing the items to be financed from the proceeds of the Loan, the allocation for each item and the percentage of expenditures thereon to be so financed.

We confirm that the proceeds of the loan will not be used in any manner for the payment of taxes or duties imposed by the laws in force in the Republic of Maldives.

We further confirm that, unless otherwise agreed with the Fund, procurement of goods and services financed from the Loan shall be carried out in the following manner:

1. Tenders for the project will be on the basis of International Competitive Bidding. The appointed consultant will be entrusted with the preparation of the contractor's post-qualification questionnaire and point evaluation system for the Ministry and the Fund's approval.
2. The consultancy services will be procured through an International Competitive Bidding Post-Qualification process, whereby Technical Submissions will be, first, evaluated for qualifications, and then technical proposals will be evaluated for this specific project. We will seek your approval following each of the aforementioned steps.
3. Notice of the invitation to eligible contractors will be published in two Kuwaiti daily newspapers and advertised locally in the Republic of Maldives, with advance copy of the advertisement, together with English translation thereof, being furnished to the Fund for its comments. A report on the evaluation of applications and recommendations for prequalification of contractors will be prepared and submitted to the Fund for review and approval.

4. Procurement of equipment shall proceed on the basis of three quotations from specialized suppliers. A report on the evaluation of quotations and recommendations for award will be prepared and submitted to the Fund for review and approval.
5. As regards the application of Section 4.04 referred to above and the procurement of all items to be financed from the Loan, we shall furnish you with a copy of all tender documents in advance of issuing for review and comments and shall make such reasonable modifications as may be requested by you in such documents or in the bidding procedure. Upon the receipt and analysis of bids we shall furnish you with a detailed report on the evaluation of bids together with the recommendation for award for your consideration and approval. Any material modification proposed to be made in the terms and conditions of any contract before or after award will also be presented to you for approval.

Following the signature of any contract to be financed from the Loan, a conformed copy thereof, together with an English translation, will be furnished to the Fund for its records and for the purpose of disbursements from the Loan in accordance with such contract. In case a material modification is proposed in any contract after the approval thereof by the Fund, such proposed modification will be presented to the Fund for review and approval.

Please indicate your agreement to the List of Goods attached herewith and your acceptance of the contents of this letter by signing the form of confirmation on the attached copy of this letter and returning it to us.

Republic of Maldives

By: _____
(Authorized Representative)

Confirmed:

Kuwait Fund for Arab
Economic Development

By: _____
(Authorized Representative)



LIST OF GOODS

ITEM	Allocation of the proceeds in Kuwaiti Dinars	Percentage of the total cost of item
1. Supply, installation and commissioning of an integrated fresh water system including a Reverse Osmoses and a Rain Water Harvesting schemes and a sewerage system including pipelines, vacuum sewer system and a treatment plant with a sea outfall with all necessary ancillaries including civil, mechanical, and electrical works.	2,820,000	72%
2. Institutional Support	60,000	80%
3. Consultancy services	120,000	75%
4. Contingency	200,000	
Total	3,200,000	



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Side Letter No. 2

REPUBLIC OF MALDIVES

Date: _____

Kuwait Fund for Arab Economic Development
P.O. Box 2921, Safat
Kuwait, 13030

Dear Sirs:

With reference to the Loan Agreement signed today between us for the financing of the Development of Water Supply and Sewerage Facilities in Fuvahmulah Island Project, we confirm that we have been duly informed that in accordance with the regulations in force in the State of Kuwait, the use of public funds in transactions involving any firm boycott regulations or entity subject to boycott under these regulations is prohibited.

We therefore undertake that the proceeds of the above-mentioned Loan will not be used in any manner to finance directly or indirectly goods or services produced by any country, firm or entity subject to boycott according to the regulations in force in the State of Kuwait.

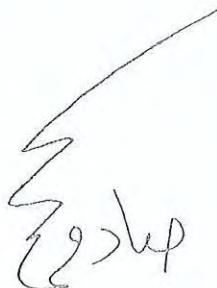
Republic of Maldives

By: _____
(Authorized Representative)

Confirmed:

Kuwait Fund for Arab
Economic Development

By: _____
(Authorized Representative)



2

Side Letter No. 3

REPUBLIC OF MALDIVES

Date: _____

Kuwait Fund for Arab Economic Development
P.O. Box 2921, Safat
Kuwait, 13030

Dear Sirs:

We refer to Section 2.04 of the Loan Agreement of even date herewith between us for the financing of the Development of Water Supply and Sewerage Facilities in Fuvahmulah Island Project. We understand that the rate of exchange between the Kuwaiti Dinar and other currency or currencies used for disbursement or debt service payment under the Loan shall be determined as follows: (a) the rate used for disbursement purposes shall be the rate advised by the bank effecting the payment made from the Loan in any currency other than the Kuwaiti Dinar, and (b) in case of debt service payment in a currency acceptable to the Fund, other than the Kuwaiti Dinar, the rate of exchange between such other currency and the Kuwaiti Dinar shall be the rate published by the Central Bank of Kuwait on the day the payment was received.

Please confirm your agreement to the foregoing by signing the attached copy of this letter and returning it to us.

Republic of Maldives

By: _____
(Authorized Representative)

Confirmed:

Kuwait Fund for Arab
Economic Development

By: _____
(Authorized Representative)





Kuwait Fund Requirement for the Preparation of a Feasibility Study

Water and Sanitation Department
Ministry of Environment and Energy

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The Executive Summary

Maldives consist of small, low-lying, flat, coral islands spread over more than 90,000 sq. km. It is an island nation comprising of 1,190 islands of which some 197 islands are inhabited. Being a small island nation, the people of Maldives inherit the limitation of land area and the water resources. With the growing population and civilized life styles, the demand for water is increasing. On the other hand the finite freshwater resources are getting polluted and depleted due to anthropogenic activities. The vagaries of weather, climate change, growing population and rapid urbanization are exacerbating the water supply and sanitation problems.

The Maldivian economy is heavily dependent on fisheries and tourism, which are the major sources of foreign exchange earnings and government revenue due to limited natural resources. The steady economic growth seen over the recent years is primarily due to the expansion of fisheries and tourism sectors and related economic activities. However, due to the Indian Ocean Tsunami 2004 and global financial crisis of 2009 the real GDP declined.

The government of Maldives attaches a high priority to the Health and well being of all Maldivians. To this end, the Government is committed to improving access to safe drinking water and sanitation to all Maldivians. The provision of safe drinking water supply and sanitation is regarded as a basic right for all Maldivians in the new constitution of the country. The island proposed for installation of sewerage and water supply system under this project is the island of Fuvahmulah, situated in the Gnaviyani Atoll.

The main objective of this project is to increase provision of sewerage facilities to Gnaviyani Fuvahmulah. The project will help to achieve the following specific objectives along with provision of sewerage networks and facilities

- Reduce frequency of disease in early childhood and contribute to sound physical and mental growth;
- Prevent ground water aquifer from the different sources of pollution including leaching of sewage from existing facilities;
- Provide women and children dignity, energy and time for more productive work and contribute to economic growth and increased working days;
- Create development opportunities in the island by providing basic infrastructure and services;
- Develop capacity and increase local knowledge on water and sanitation facilities management; and

- Assist to reach the national targets and united nations millennium development goals in achieving 100 percent sanitation coverage before end of 2015

Portable use of unsafe drinking water and unhygienic practices will have negative impacts on the health and wellbeing of the population causing water borne and water related diseases. In addition, improper disposal of sewage and wastewater will also have negative impacts to the human health and surrounding environment. Improper sanitation facilities such as septic tanks will have the potential for sewage effluent to contaminate the groundwater leading to water borne diseases and health problems.

The proposed water supply and sewerage facilities will ensure reduction of public health risks from polluted water and protection of groundwater resources from unsafe disposal of sewage. Construction of water supply network with house connections will safe guard the population from water shortages and will increase the water security.

Introduction

The Republic of Maldives is a small island nation with fragile environment and scarce water resources. The country consists of 1192 low-lying coral islands spread over an area of 90,000km² in the Indian Ocean. Only 197 islands are inhabited. There are practically no surface water sources and the limited ground water is vulnerable to salinity ingress and contamination from indiscriminately discharged waste water. For many years onsite sanitation using septic tanks and soak pits were the main sewage disposal method used hence proper treatment and disposal to avoid contamination of the limited groundwater aquifer has been among the major environmental challenges in Maldives. Currently a significant fraction of total population has improved sewerage facilities with island wide sewerage systems.

The maximum elevation of land above mean sea level in the Maldives is around 2.5 m and about 80% of the land area is less than 1 m above mean high tide level (MHHAHE, 1999). The low-lying nature of the islands makes it one of the most vulnerable countries from any environmental change. The measurements of depths to water table are on average at about 1-1.5 meters in most locations. The thickness of the fresh water lens is a few meters, and probably a little deeper in the South than in the drier North. In the Maldives, sustainable freshwater sources are in limited supply, in part because of the hydrogeology of the country. Surface freshwater is lacking in the country except for a few swampy areas on some islands.

The freshwater aquifers on the islands are very vulnerable. In many inhabited atoll islands, overcrowding, poor sanitation practices, over pumping of groundwater and improper waste disposal practices have been the main cause of groundwater pollution. Over the years groundwater has become contaminated and almost depleted in many areas. Saltwater intrusion has further degraded the quality of the aquifers in many densely populated islands. This has been further exacerbated after the Tsunami due to flooding and leaking of sewage into the groundwater aquifer.

The islands in the Maldives show the typical geo-hydrological sea island feature of a fresh water lens floating on deeper saline groundwater. The fresh water lens is periodically replenished by rainfall recharge and depleted by use of groundwater for household, irrigation and industrial water, groundwater uptake by vegetation and lateral outflow to the sea. Rainwater is the main source of potable water in most of the inhabited islands outside the Capital, Male'. In the atolls, all households have rainwater tanks to collect rainwater and it is mainly used for drinking and cooking purposes. However, when household rainwater supplies are inadequate during the dry season they generally obtain drinking water from communal tanks or water supplied from desalination plants.

Many people still lack access to safe water and adequate sanitation services, particularly outside of Malé. Groundwater is the main source of water used for purposes other than drinking and cooking. About 8%* of the populations in the atolls use desalinated water. In Malé, by contrast, approximately 96% of the population was served by desalinated water supplied to the home through a piped distribution system, but overall, only about 40%* of the Maldivian population has such service. There is urgency to improve access to services, as well as the quality of the services provided, given the vulnerability of existing systems and the population growth. About 25%* of the populations in the atolls has a sewerage system with piped network. In Malé, by contrast, approximately 98% of the population has access to flushing toilets that were connected to a sewerage network, where only about 51%* of the Maldivian population has such service. A small proportion of the population in the Maldives still uses a rudimentary form of latrine (giffili). In the outer islands, the predominant sanitation technologies are onsite septic tanks and soak pits. On some islands, this is combined with shallow sewer or small bore sewerage systems. However these septic tanks with soak pits placed in the household premises have been contaminating the shallow groundwater aquifer of the island.

* Data Analysed by Water and Sanitation Department, MEE

As population grows and the standard of living improves, the demand for safe water and better sanitation facilities also increases. Providing better facilities which are affordable both to the household and to the country as a whole is a major challenge.

External support will be required in achieving the ambitious goals and objectives of the sector. It is widely acknowledged that there can be no greater investment in human health or in human environment than investing in water and sanitation.

The Maldives is amongst the most vulnerable to predicted climate change. The number of scientific and technical assessments carried out in the country has reiterated the need for long term adaptation to climate change. The importance for enhancing adaptive capacity to manage climate change related risks to water resources through increasing knowledge, strengthening regulatory frameworks and adaptation are key areas that are identified in the National Adaptation Plan of Action (NAPA).

A. The Economic and Financial Sections

1. Country Economic Background

The nation's capital Male', with around 2.5 sq kms of total land area has over a quarter of the entire population of Maldives. Maldives has a relatively young population with almost 41 percent under 15 years of age and around 3 percent over 65 years of age. With regard to human development trends, the country ranks high among the Asia-Pacific countries. Like several other small island nations, development in Maldives is also constrained by the absence of land based mineral resources, the limited scope for expansion of the agriculture sector, and vulnerability to natural disasters and environmental hazards. This was brought into stark contrast by the phenomenal damage wreaked upon the islands by the Asian tsunami of 26 December 2004, which destroyed the nation's economic and social infrastructure close to around 62 percent of GDP.

Maldives faces many development constraints similar to other developing nations, the following characteristics are noteworthy. The economy of Maldives is mainly reliant on fisheries and tourism, with tourism accounting for a third of GDP (Maldives Monetary Authority, 2008). The country's economic development has been constrained by its limited agricultural and mineral resources and the small size of its domestic market (Asian Development Bank, 200-2002). In spite of the lack of natural endowments, Maldives has recorded remarkable economic growth over the past few decades and has graduated from Least Developed Country (LDC) status to the middle-income group. The steady economic

growth seen over the recent years is primarily due to the expansion of fisheries and tourism sectors and related economic activities.

In terms of employment, these two sectors alone account for more than a third of total employment. The total labour force of the country is estimated at around 50 percent of the working age population, which, coupled with the low level of educated labour, has led to a high proportion of expatriate workforce in the country. Expatriate labours has therefore played a key role in the development of the Maldivian economy, and include teachers, medical personnel and other professionals as well as a large number of lower-skilled workers such as domestic helpers and construction workers. It is estimated that over 72,000 expatriates are working in the Maldives (Maldives Monetary Authority, July 2010).

The development process of the country has been supported by the Government, the private sector, non-government organizations and foreign donors. While the Government has concentrated on providing basic socio-economic services, the private sector has played a key role in the development of tourism, distribution, trade, transport and fisheries among other activities. External donor assistance has been an important element of the development process. For example, in recent years, about 70 percent of total development expenditure was financed by external resources with the grant component being significantly high. In addition to official bilateral and multilateral aid flows, a number of foreign NGOs have also provided substantial assistance to the Maldives.

The public sector consists of the government and state owned enterprises (SOEs), which have historically played a key role in the economy. Over the years, operations of SOEs have covered a wide range of activities including banking activities, air and sea transport, international shipping, communications and the provision of electricity, fisheries operations, tourism and importing and distributing a large share of essential food and oil products. However, in recent years there has been a move towards privatization and cutting back on the provision of services by SOEs that could more efficiently be undertaken by the private sector. Fiscal revenues constitute about 48 percent of taxes and the balance largely of profit transfers from public enterprises. As there are no taxes on personal income, capital gains, business profits (other than a bank profit tax) wealth, or real estate, the bulk of the tax revenue comprises of import duties (64 percent) and tourism tax (28 percent). On the expenditure side, social services account for around 41 percent of total expenditure whereas payments on economic services account for roughly 16 percent.

Maldives has an open economy, with a narrow export base but high dependence on imports for most of its economic activities. Consequently, foreign merchandise trade

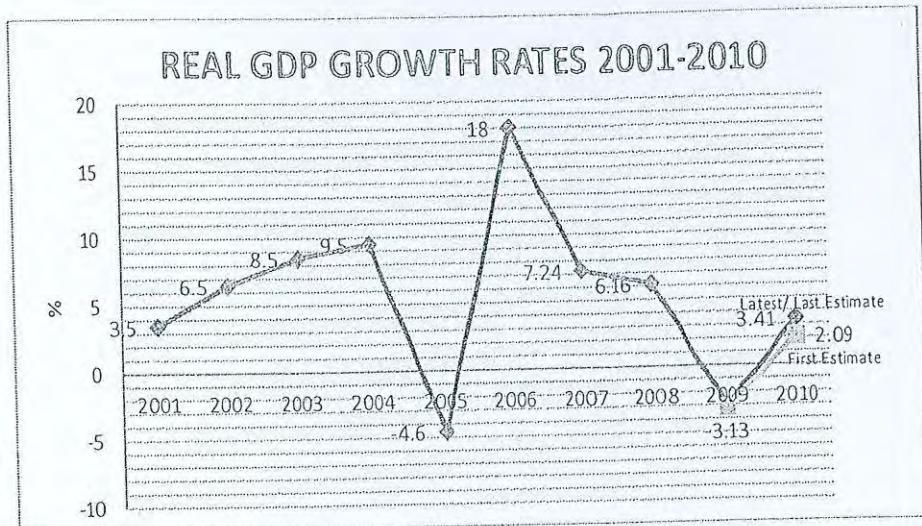
normally records a large deficit; imports have averaged around 61 percent of GDP in the last 5 years, while domestic exports, consisting primarily of fish and fish products have ranged between 11-15 percent of GDP. Services and transfers have shown a net surplus that has averaged around 34 percent of GDP in recent years, with service receipts being dominated by tourism and related activities. Nevertheless, there is usually so a significant outflow of transfers from the economy owing to the large expatriate work force that is resident in the country. Official medium and long-term debt flows and inflows of capital for direct investments dominate the capital account of the balance of payments. External debt stock of the public sector and the banking system has averaged around 38 percent of GDP during 1997-2000, with a large portion of official debt being received on highly concessional terms. Statistics on the level of indebtedness of the private sector at a given point in time are not readily available.

Maldives largest economic activity which is the tourism industry, accounts for 28% of GDP and more than 60% of foreign exchange receipts. Over 90% of government tax revenue comes from import duties and tourism-related taxes. Fishing is the second leading sector, but the fish catch has dropped sharply in recent years. Agriculture and manufacturing continue to play a lesser role in the economy, constrained by the limited availability of cultivable land and the shortage of domestic labor. Most staple foods must be imported.

Maldives has had chronic budget deficits in recent years and the government's plans to cut expenditures have not progressed well. Maldives used to have import duties as its main source of tax revenue before the introduction of Goods and Services Tax on Tourism (GST) and Business Profit Tax (BPT). GST was introduced in January 2011 and BPT has been introduced very recently in 2012. These taxes are expected to increase government revenue. (Index Mundi)

Maldives has experienced rapid economic growth and development in recent years, supported by a dynamic tourism sector. However, the susceptibility of the economy to factors beyond its control was augmented in the wake of the devastation wrought by the December 2004 tsunami and the decline in tourism following the September 11 terrorist attacks in USA. In the last decade, real GDP growth averaged around 6% per year except for 2005, when GDP declined following the Indian Ocean tsunami, and in 2009, when GDP shrank by nearly -3.13% as tourist arrivals declined and capital flows plunged in the wake of the global financial crisis. Each such incident underscores the fact that the country needs to diversify its economic base, rationalize its development objectives and further enhance the role of the private sector in the developmental process in order to reduce the

vulnerabilities on the external accounts and maintain a sustainable level of economic growth.



(Statistic Division- Department of National Planning, 2010)

2. Project Justification

Maldives ranks high among developing countries likely to experience the most significant impacts from global climate change. Sea level rise, increased storm and wave action, altered rainfall patterns, and changes to air and ocean temperature represent threats for which the country needs more information and must begin now to prepare. Due to a combination of both natural and anthropogenic factors, freshwater resources are especially vulnerable. Constitutionally mandated and now supported by policies and plans, the provision of safe drinking water and environmentally sound sewage disposal are among the highest priorities for the GOM's NAPA and development agenda.

The project will have manifold benefits including improving the health and well being of the population, preventing groundwater pollution and promotion of regional development. In addition this will contribute to achieving the development goals set by the government towards meeting the Millennium Development Goals (MDGs) and national development agenda.

The government of Maldives attaches a high priority to the Health and well being of all Maldivians. To this end, the Government is committed to improving access to safe drinking water and sanitation to all Maldivians. The provision of safe drinking water supply and

sanitation is regarded as a basic right for all Maldivians in the new constitution of the country.

The Government of Maldives is also committed to the goals of the International Decade for Action and the Millennium Development Goals, including goal 7, Target 10: "Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation" and is exerting every effort to increase the number of people with access to safe drinking water and improved sanitation.

The Goals and objectives of the water and sanitation sector are:

1. Ensure access to safe drinking water and sanitation facilities as a basic human right for all.
2. Protect and preserve the country's vital fresh water resources and establish water stocks for use in emergency and disasters.
3. Enhance the role of private sector participation in the provision of water and sanitation services while encouraging a smooth shift in the role of the government as a regular and facilitator in the provision of these services.
4. Introduce the use of renewable energy and other modern technologies to minimize the cost of providing drinking water and sanitation systems and to protect ground water.

Enabling policies

The Strategic Action Plan (2009-2013), sets out a framework for delivering the government's five main pledges.

The water and sanitation policies are intended to facilitate the achievement of sector goals and objectives set forth in the strategic action plan; the national development framework, which is also targeted to achieve the Millennium Development Goals. The Key sector policies set out in the Strategic Action Plan (2009-2013) are

Policy 1: Improve accessibility in delivery of safe water and sanitation services.

Policy 2: Prioritize provision of safe water and sanitation when designing development projects and emergency response.

Policy 3: Establish effective operation and maintenance procedure for water and sanitation systems in the Maldives.

Policy 4: Facilitate private sector investment in the water and sanitation sector.

Policy 5: Strengthen technical, financial and human resources capacity for water and sanitation sector.

Policy 6: Enhance community and civil society participation in the water and sanitation sector.

Policy 7: Strengthen legal and institutional framework to improve sector performance.

Policy 8: Improve water resources management to preserve environment.

Policy 9: Improve safe water consumption at public and domestic levels through implementation of thorough water safety plans

The island proposed for installation of sewerage and water supply system under this project is the island of Fuvahmulah, situated in the Gnaviyani Atoll. The island has an area of 497.9 hectare. The island population as per 2006 census data is 7636 persons and its registered population in August, 2012 as confirmed from Fuvahmulah Atoll Council (an official government agency) is 11469 people with a density of more than 23 people per hectare with registered houses.

The following are examples of standard indicators that are relevant to this program:

- Access to safe drinking water and sanitation increased among the population of the island ;
- Protection of ground water aquifer from contamination.
- Water security increased in regional/ commercial growth centers.
- Provision of social infrastructure facilities for regional/commercial growth centres.
- Improve health and well-being of the population and reduce number of water-borne diseases specially among children;
- Assist in achieving national targets on access to safe water and sanitation
- Households with links to conventional sewerage system in the focus island.
- Reduction in monitored ground water pollution.
- Decrease in number of visits to health center in focus islands for diarrheal and waterborne related diseases.

- Sustainable development in the atoll island strengthened.
- Improved water resource conservation through lower rates of water consumption.

3. Project Area of Influence

Location and proximity

This atoll island is situated in the extreme south of the country in Addu Channel, between Huvadhu Atoll and Addu atoll, just south of the equator at approximately $73^{\circ}25'40''$ E and $0^{\circ}17'24''$ S (see location map in annex A).

Addu Atoll on the South and Huvadhu Atoll (Gan Kandu) on the north are the closest atoll to Fuvahmulah with a distance of 34 Km and 57 Km respectively. The closest inhabited island is Hulhumeedhoo in Addu Atoll. It takes approximately an hour and half by speed boat or three hours by traditional mechanized boat to access the nearest accessible inhabited island (travel time is highly depended on the weather). Nearest airport (a newly declared international airport) is located approximately 52 km or one and half hours (by speed boat), on the island of Gan in Addu Atoll.

Access and Port(s)

Fuvahmulah has a seaport/harbor built in 2003 and a domestic airport built in 2011. For decades people of Fuvahmulah have been experiencing difficulties in accessing to the island. The huge waves that come straight from the deep sea had swallowed hundreds of people, who dared to access the island during rough weather. Therefore, the construction of an airport in Fuvahmulah was a dream come true for the inhabitants of the island.

Size, topography, other (physical) features and land use

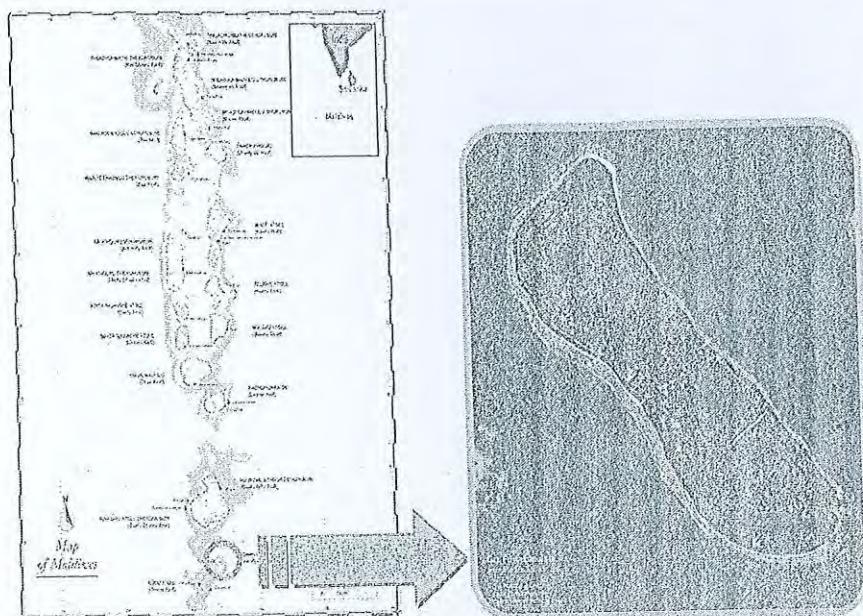


Image 1: Gnaviyani Fuvahmulah island location from Maldives map

The island is formed on a South-east to North-west direction. Fuvahmulah, with an area of approximately 5 km² is the 3rd largest island in the Maldives. When the island was formed it was developed like dumbbell - with narrow middle and wider ends. The length of the island is approximately 2.5 miles, the width of the widest part is $\frac{3}{4}$ miles, and the width of the narrowest part in the middle of this dumbbell shaped island has $\frac{1}{2}$ miles.

The coastline of this island is about 2.5m on average, above mean sea-level with the central part less than 1m in elevation. The average height of the island is 2.39 m. The outer rim of the island shows exposure of dense coral which signifies some topographic significance and the inner part of the island is prominently lower than the outer rim of the island/atoll because of a natural depression of the inner area. This middle area is marshy and soft. In spite of its huge land area, only about 60% of land is habitable due the presence of soft marshy area and the inland water bodies previously mentioned.

Due to its size, Fuvahmulah is divided into 8 administrative wards/units. They are Dhandimagu, Dhiguvaandu, Hoadhandu, Miskiymagu, Funaadu, Male'gan, Dhoodigan and Maadhandu wards. Historically, these are separate settlements or villages within the main island. Settlements are usually located along the raised fringes of hard and dry land of wetland areas.

Infrastructural Support Facilities

- The Dhiraagu communications antenna: The tallest structure in the Maldives, along with the Wathaniya communications antenna on the island. Both structures stand 400 feet tall.
- Atoll Office: The highest administrative unit of the atoll as a whole.
- Island Office: The headquarters of the island chiefs appointed for the 8 wards of the island.
- Gn. Atoll Education Centre: The only secondary as well as Higher Secondary School in Fuvahmulah.
- Dhiraagu Operations Center, Fuvahmulah
- Wataniya Fuvahmulaku Branch
- State Trading Organisation Fuvahmulah Branch
- Bank of Maldives Fuvahmulah Branch
- MNDF (Maldives National Defense Force) establishment in Fuvahmulah
- Fuvahmulah Police Station
- Fuvahmulah Youth Centre
- Fuvahmulah Social Centre
- Fuvahmulah Domestic Airport

4. Market surveys and the justification of the project

Maldives comprise of 197 in habited islands, dispersed over a wide geographic area. Approximately 75% of the country's population lives in the outer islands. Thirty nine percent of the islands have a population between 1000 and 500. Only two percent of the islands have a population of over 5000 people. The wide and uneven distribution of population poses many challenges to the provision of basic services such as access to water and sanitation. The population depends heavily on the groundwater aquifer which is the only source of potable water. Rainwater harvested from roof tops is used primarily for drinking and cooking. In the area of sanitation, the coverage is much less due to high initial capital investment required. Prior to tsunami, the prevailing systems of sanitation are onsite disposal systems using septic tanks and soak-pits. The problem was further aggravated by the damage caused to the sanitation systems. Faecal contamination of the aquifer from damaged sewerage systems have compounded the health impact of the tsunami and the sufferings and hardships faced by the island communities. The destruction of sanitation systems on the islands have resulted in the deterioration of the

freshwater aquifer. Destroyed or damaged household septic tanks and soak pits are the principle sources of contamination of these aquifers.

The existing set up of disposal of sewage is not environmentally ideal and also unsafe for the health and hygiene aspects within the islands. The main existing practice of disposing the sewage is by means of septic tank with small length of dispersion pipes. Due to the defective construction of septic tanks using mainly coral stones, it continues to be leaking which is the case of dispersion pipes as well. Consequently, the premises around the septic tank are found slushy. Furthermore the leaking effluence invariably infiltrate into the nearby open wells, resulting the water in the wells getting contaminated. The open wells in each household are used for the purposes other than drinking and rarely for drinking also. In effect, the situation is highly non aesthetic and non hygienic which pose serious threat to health and water-born diseases. Therefore, the islanders eventually developed a stigma and became highly allergic to the concept of septic tank.

The existing water supply is not at all adequate in respect of quality and quantity. The population depends on rainwater as their main source for potable water. However, ground water is also used for potable uses during the dry period which normally lasts 3 months. Probably, the inherent constraints like want of adequate source, favorable terrain, depth of water table, intrusion of salinity, bacterial contamination, etc. might be the prohibitive factors for proposing an appropriate and effective system which would be technically feasible and financially viable.

In addition the project would facilitate regional and commercial growth centers and islands falling in these regions. This project will improve island resiliency to climate change impacts and water shortages, contribute to achieve the development goals and agenda set by the government towards meeting the Millennium Development Goals (MDGs) and national development agenda by improving access to safe water and sanitation to all. The Government has plans to provide better infrastructure and social services in high populated areas and regional development/ commercial centers in order to achieve the objective of population consolidation and regional development across the country. The national development policy of the government of Maldives (GOM) is to create other growth points within other islands in the country so that the congestion in Male', the capital of the country, can be reduced and the benefits of growth can be more equitably distributed amongst the citizens. The major task in this respect is the creation of basic infrastructure for selected growth Atolls/islands in the country. Keeping this objective in mind, GOM has taken a policy decision to provide Water and Sanitation in Fuvahmulah Island.

Costs and benefits

Estimated Cost for designing and construction of water supply and sewerage system with sea outfall

	Water Supply Systems (USD)	Sewerage Systems (USD)	Total (USD)
Civil Works (piped network, pump station, treatment plant, sea outfall, catch pits)	3,480,711.00	9,438,621.00	12,919,332.00
Preliminaries & general requirements (designing & surveying)	390,000.00		390,000.00
Supervision & Contingencies (5%)	1,663,966.00		1,663,966.00
TOTAL			14,973,298.00

Benefits

The major benefits with the projects as; (1) long-term improved health conditions; (2) increased productivity due to healthy labour force; (3) higher economic activity; (4) Reduction in water borne diseases, less financial burden on health; and (5) cleaner environment. All the benefits from the project cannot be quantifiable. Hence the quantifiable ones have been identified.

The health benefit is measured as the social cost of treating waterborne and sanitation related illnesses with and without project. It may be noted that the annual social cost of treating such illnesses without the project is considered as an annual benefit, with the project. Obviously, this assumes that with the project, there is very little chance of getting water borne diseases among the population.

5. Financial Analysis

Not available...

B. The Technical Section

1. Sector Information

The provision of safe drinking water supply and sanitation is regarded as a basic right for all Maldivians in the new constitution of the country. The Government of Maldives is committed to fulfill its constitutional obligation that all Maldivians have access to basic water supply and sanitation services at a cost which is affordable both to the household and to the country as a whole.

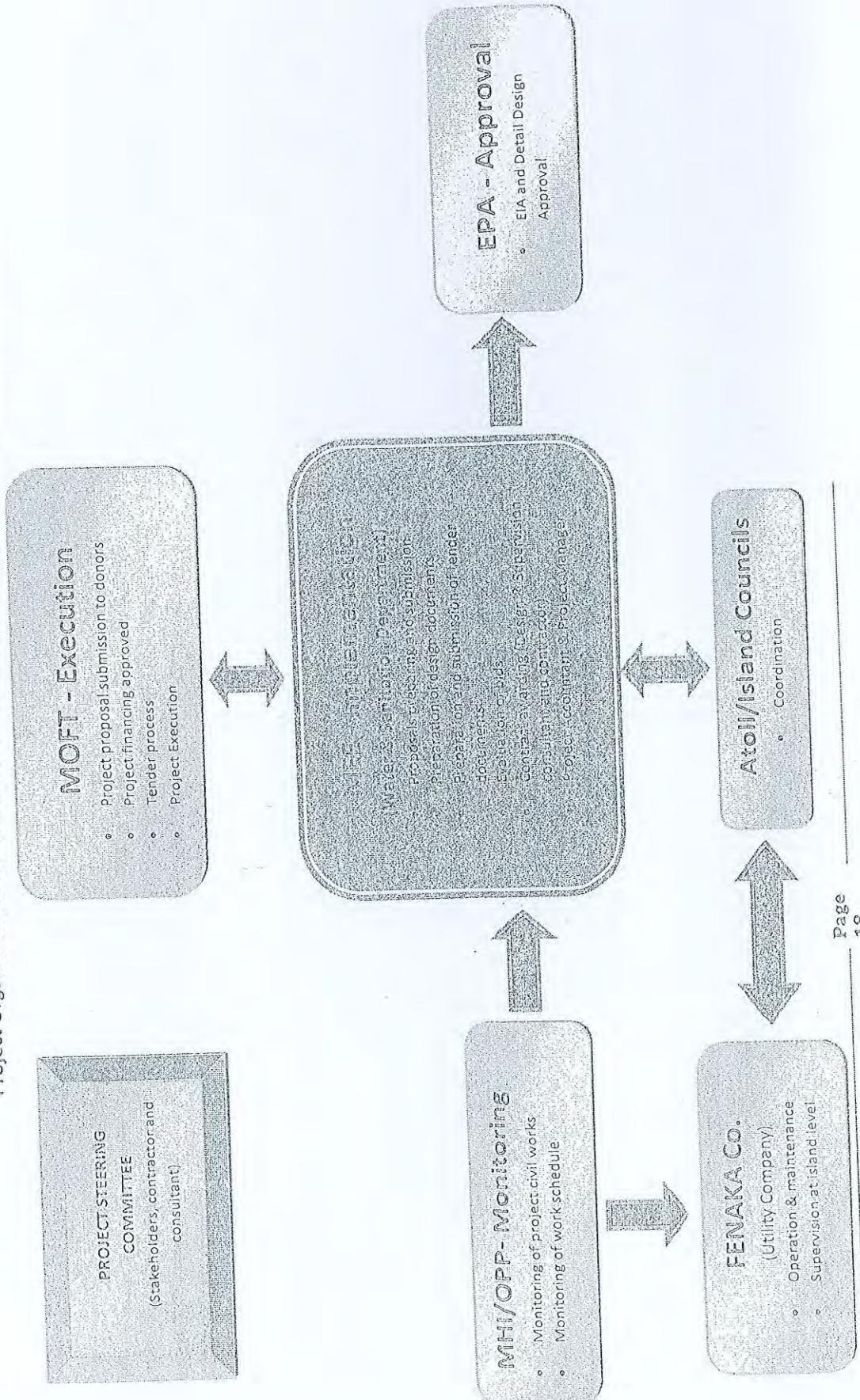
The Ministry of Environment and Energy (MEE) has developed a policy on water and sanitation in line with national development agenda and Millennium Development Goals (MDGs). The Water and Sanitation Policy outlines the governments' policy on provision of safe water and sanitation services to all. The Policy also outlines the key strategies for achieving the goals.

Having access to safe water and sanitation is a constitutional right of citizens of Maldives. The Ministry of Environment and Energy (MEE) is mandated to fulfill the constitutional obligations of the government.

Recognizing the urgent need for improved facilities for health and well being of island communities the government has initiated plans to provide social infrastructure and better services in outer islands. The water and sewerage services policies outlined in the current development plan includes the following major 4 policies

- Designate the provision of safe drinking water and sewerage services to all as a basic human right in national policies and implement these policies;
- Prioritize provision of safe drinking water and adequate sewerage services when formulating government policies and designing development projects;
- Increase the technical capacity and financial means required to provide water and sewerage facilities;
- Facilitate and regulate the provision of water and sewerage services.

Project Organizational Setup: The following flowchart describes the organizational structure:



Institutional Framework

- President's Office
- **Lead Ministry:**
 - Ministry of Environment and Energy is responsible for planning and policy making
 - Regulatory Body: Environmental Protection Agency is responsible for setting standards and regulations for water quality in the Maldives, for enforcing the regulations, and for monitoring water quality
- **Stakeholder Ministries and Sectors:**
 - Ministry of Housing and Infrastructure (MHI) – is responsible for carrying out the civil works of the project.
 - Office of Projects and Programs (OPP) – project monitoring.
 - Housing Sector – Water and Sewerage services prioritised with housing sector / islands
 - Ministry of Health and Family – Improve hygiene
 - Dept of National Planning – Statistics of water and sanitation coverage
 - Ministry of Economic Development – Integrate water and sewerage to the public-private partnership scheme
 - Ministry of Finance and Treasury – Resource mobilisation and budgeting
 - National Disaster Management Centre – Address emergencies in the water and sewerage sector
- **Local Governance System**
 - Provinces, Atoll and Island Councils
- **Private Sector for service provision**
 - Male' Water and Sewerage Company – service provider of water supply and sewerage services throughout the country
 - FENAKA Cooperation – service provider of water supply and sewerage services throughout the country
 - Foreign investment for service provision and transfer of modern technology
- **Financing**

Financing of the water and sewerage projects are from the Government budget, external funding through grant aid or loan, private investors through public private partnership and contractor finance Projects. The government encourages providing more opportunities for the private sector and the

government is currently encouraging private companies to provide water supply and sewerage services in the islands. Creating an investor friendly environment is a key priority of the government. Public private partnership is highly encouraged by the government.

Challenges of the sector

The primary problem addressed by the sector is a significant, climate change-induced decline of freshwater security that is affecting vulnerable communities in different isolated islands in Maldives. As surface freshwater is generally lacking throughout the country (with the exception of a limited number of brackish water swampy areas in some of the islands), the key problems pertaining to freshwater security relate to the management of increasingly saline groundwater and increasingly variable rainfall patterns. Freshwater is a scarce resource in Maldives, due to the hydrogeology of the country. Many freshwater aquifers are already stressed from over-extraction and face the risk of total depletion. This already precarious hydrological system is further aggravated by climate change-induced effects of sea level rise and flooding during extreme weather events, which increases saltwater intrusion into the freshwater lens. Salinization of groundwater is affecting the quality of life in the islands, as people depend on groundwater for washing, bathing and other non-potable uses. Saltwater intrusion is also affecting soil and vegetation, causing impacts on agriculture and terrestrial ecosystems.

Roof top harvested rainwater is the main source of drinking water available on islands across Maldives. However, due to limited storage capacity within house plots, householders can collect and store only a small quantity of water (the average household storage capacity on islands across Maldives is 2500L). In dry periods, many householders experience shortage of drinking water, which is due to shifting weather patterns and prolonged dry periods. In such instances, the government is called upon to transport potable water to the affected islands. Over the last few years the National Disaster Management Centre has transported potable water to many islands facing acute water shortages due to prolonged dry periods which has a high financial burden to the Government. There is urgency to improve access to services, as well as the quality of the services provided, given the vulnerability of existing systems and the population growth.

In addition to unregulated extraction of groundwater from shallow aquifers, a major challenge for the conservation and protection of valuable groundwater resources during dry periods is the absence of appropriate means for domestic wastewater disposal.

Around, 98% of the population of Malé (Capital Island) had access to flushing toilets connected to a sewerage system. However, in the atolls only 25%* of the population had access to toilets connected by sewer pipes to sea. On some islands, this is combined with shallow sewer or small bore sewerage systems. However septic tanks with soak pits placed in the household premises have been contaminating the shallow groundwater aquifer of the island. The effluent from septic tanks and soak pits are often discharged through sewage outfall at the shore, which heavily pollute the coastal environment.

Under such circumstances, provision of safe water supply and sanitation consequently became an urgent task for the Government. In order to fill the gaps of current status and sector goals of access to safe water and sanitation for all, the MEE is working to provide water supply and sewerage services and to the affected islands considering the long term sector goals and objectives.

After the 2004 tsunami, with loans from development banks and support by donor agencies, sewerage systems have started to be built with treatment and central collection facilities with ocean outfalls. Due to these efforts 8%* of the population in the atolls has access to piped water supply where 40%* of the country has this facility. In the atolls 25%* of the houses had access to sewer systems connected to a sea outfall, while 51%* of the country had access. The huge difference in the percentage is because most of the Maldivian population lives in the capital island Male' where all the facilities are available, but limited due to congestion.

It is essential to connect wastewater treatment planning to considerations of long-term freshwater supply, and to make sure the management of wastewater and the management of freshwater in an integrated manner. If this connection is not made, the lack of proper wastewater management planning will undermine all efforts to ensure supply of safe water to the people against climate-related hazards.

* Data Analysed by Water and Sanitation Department, MEE

2. Project Information

Sewerage system

In conventional sewerage systems Sewer lines networked throughout the island will collect wastewater from individual households and convey the wastewater to the pump stations through gravity. Inspection chambers will be strategically located at selected locations for inspection and maintenance purposes. Sewer pipes shall be used according to the design requirements but the most common sizes are 6 inch diameter. This size pipes have been used in all other islands for gravity flow networks. There could be high concentrations of H₂S in the wastewaters. Pipes and materials will therefore be selected to withstand the corrosive conditions that may arise in the different parts of the system. The sewer network consists of 4 inch house connection and 6 inch for the laterals taking the sewage / wastewater to lift stations in the specific locations. These lift stations convey the sewage to treatments works which pumps the clarified effluent to sea at the end of the outfall.

Below are 3 main types of sewer systems implemented in Maldives;

1. Conventional Gravity System;
2. Vacuum System; and
3. Small Bore System

Treatment System

The selection of a particular process for sewage treatment is affected by diurnal and seasonal flow variations, sewage strength (variability of wastewater constituents) infiltration / inflow, ambient temperature and its induced septicity, degree of treatment required, magnitude and direction of wind and ocean currents at outfall, etc. The treatment works proposed consist of preliminary treatment (screening and grit removal), secondary treatment by bio-remediation (oxygenations by means of Aeration followed by clarification-separation of effluent and sludge), effluent treatment (effluent subjected to disinfection by chlorination) and sludge treatment/removal (sludge dewatering /digestion/ disposal).

Sewage treatment process will be based on Diffused Aeration Activated Sludge process with extended aeration which can treat sewage for BOD 20mg/l and SS 30mg/l.

Activated Sludge Treatment system is a basic extended aeration activated sludge process consists of several interrelated components: An aeration tank is where the biological reactions occur. An aeration source provides oxygen. A tank, known as the clarifier, is where the solids settle and is separated from treated wastewater. Solids are collected either to return them to the aeration tank (return activated sludge), or to remove them from the process (waste activated sludge). Aerobic bacteria thrive as they travel through the aeration tank. They multiply rapidly with sufficient food and oxygen. By the time the waste reaches the end of the tank (between four to eight hours), the bacteria has used most of the organic matter to produce new cells. The organisms settle to the bottom of the clarifier tank, separating from the clearer water. This sludge is pumped back to the aeration tank where it is mixed with the incoming wastewater or removed from the system as excess, a process called wasting. The relatively clear liquid above the sludge (the supernatant) is sent on for further treatment as required.

The extended aeration process holds wastewater in an aeration tank for 18 hours or more and the organic wastes are removed under aerobic conditions. Air is supplied for aeration. This process operates at a high solids retention time, resulting in a condition where nitrification may occur. The microorganisms compete for the remaining food. This highly competitive situation results in a highly treated effluent with low solids production.

The wastewater is screened to remove large suspended or floating solids before entering the aeration chamber, where it is mixed, and oxygen is added. The solids settle out and are returned to the aeration chamber to mix within coming wastewater. The clarified wastewater flows to a collection channel before being diverted to the disinfection system.

Extended aeration does not produce as much waste sludge as other processes; however, wasting still is necessary to maintain proper control of the process. Significantly less sludge is produced compared to conventional systems. In Aeration tank (Extended aeration), suspended microbial growth is maintained for the biological oxidation of organics. Diffused aeration system is provided to meet the oxygen requirement of microorganisms and to keep the liquor in completely mixed regime. The process usually does not require any primary settling, and sewage after equalization directly goes to the aeration tank. However, in case of higher loadings, primary settling or grit chamber may be required. Elimination of primary settling reduces the initial cost, and also the sludge after extended aeration and secondary settling, is relatively more stabilized. Extended aeration produces the minimum amount of sludge and can handle widely varying hydraulic and biological flows. The sludge is periodically removed from the units.

For the above reasons, the activated sludge process with extended aeration is most suitably used where land is limited and expensive and can be treated without creating nuisance to neighborhoods. The advantages of the system have been summarized in the concept design document as follows:

- Land requirement is less (0.2 m²/capita)
- Higher efficiency, better BOD, COD, SS removal (95-99%)
- System is adaptable for shock load condition
- No primary Treatment required
- Nutrients removal is higher.
- Better effluent quality about 15mg/l BOD
- Depth of Aeration unit may be 1.5m
- Capital cost is lower but power requirement is 20 KWH/capita/year.

The project will be implemented in line with the government's National Development Plans, water and sanitation strategies and policies, Environmental Protection and Preservation Policies and Land Management Plans. The project will combine the principles of social norms, community participation, capacity building and sustainable management in all stages. The sewerage facilities will be designed and constructed in meeting the long-term needs and objectives of national development.

The following areas will be considered in designing and constructing the sewerage facilities.

- Sewerage system with sea outfalls;
- Appropriate treatment options and technologies;
- Energy efficiency hence considering renewable energy options;
- Minimize environment impact; and
- Efficient land management.

Water Supply System

Traditionally, rainwater harvesting is the cheapest and conventional source of water in place and being practiced since long in Maldivian islands, however in dry periods, this water source become redundant and remains no more in use. Groundwater in the form of thin water lens is available, however due to continuous disposal of untreated sewage by the houses into the ground has rendered the groundwater unfit for human consumption due to excessive contamination. Considering all the aspects a positive option would be desalination considering the factors of population, demand of water, health hazard, inadequacy of RWH, contamination of ground water, Reverse Osmosis (RO) / desalination

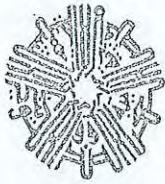
will be the ideal answer/solution to meet the drinking water requirements. This option has general approval from the community and the Island leaders. The system to cater all the needs would turn out high capital and later high consumer fees and therefore combination of RO System and other water sources such as rainwater is recommended.

C. Project Implementing Agency Information

The Ministry of Finance and Treasury will be the executing agency of the project. The Ministry of Environment and Energy (MEE) will be the implementing agency of the project.

Project management and implementation will be carried out by MEE, where a project manager, consultants and project management staff will be working in managing the project (refer to the project organization set up in page 18) The project manager will have the overall responsibility for supervising and managing the project in consultation with the person in charge of Water and Sanitation Department of MEE, whereas consultants shall provide technical input for designing and supervision of the project. The project will be implemented in consultation with necessary authorities relevant to the project management.

In addition Atoll Councils, Island Councils and Community Development Organizations will be consulted regularly, during planning, design and implementation of the project. The project consultant will prepare monthly progress reports, and the reports will be shared with relevant authorities.



الصندوق الكويتي للتنمية الاقتصادية العربية
KUWAIT FUND FOR ARAB ECONOMIC DEVELOPMENT

FAX

REF: KF/41/ 9 G/11 — 95	TOTAL PAGES: 2	
DATE: 19.5.2013	ADMINISTRATION & OPERATIONS	CF: MF/PY
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TO:

FAX NO.

MR. AMINATH ALI MANIK
DIRECTOR GENERAL
MINISTRY OF FINANCE AND TREASURY
MALE
REPUBLIC OF MALDIVES

009603324432

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19/5

SUBJECT: APPRAISAL MISSION FOR DEVELOPMENT OF WATER SUPPLY AND SEWERAGE FACILITIES IN FUVAHMULAH ISLAND-REPUBLIC OF MALDIVES

REFERENCE TO THE ABOVE MENTIONED SUBJECT, I AM PLEASED TO INFORM YOU THAT THE FUND AGREED IN PRINCIPLE TO PARTICIPATE IN THE FINANCING OF THE PROJECT WITH THE FOLLOWING LOAN CONDITIONS:

- LOAN AMOUNT : KD 3.2 MILLION
- INTEREST RATE 2% INCLUSIVE OF (0.5%) LOAN ADMINISTRATIVE CHARGES.
- MATURITY 24 YEARS INCLUSIVE 4 YEARS GRACE PERIOD

ACCORDINGLY, THE FUND IS PLANNING TO MOUNT AN APPRAISAL MISSION TO MALDIVES DURING THE PERIOD FROM 22 JUNE TO 5 JULY. THE MISSION IS COMPRISED OF THE FOLLOWING:-

- DR. MOHAMMED SADEQI, ENGINEERING ADVISOR
- DR. MOHAMED GAMEIL, FINANCIAL ADVISOR
- DR. TAREK EL BARADIE, LEGAL ADVISOR
- DR. OMER EL HATTAB, ENGINEERING ADVISOR

THE MISSION WILL ARRIVE MALE ON SATURDAY 22/6/2013 AT 15:00 ON EK FLIGHT # 652 AND WILL LEAVE MALE ON 5 JULY 2013 AT 10:00 AM ON EK FLIGHT # 659.

THE PURPOSE OF THE MISSION IS TO COLLECT INFORMATION, BOTH TECHNICAL, ECONOMIC AND LEGAL ABOUT THE PROJECT, NEGOTIATE AND INITIAL A DRAFT LOAN AGREEMENT.

KUWAIT FUND FOR ARAB ECONOMIC DEVELOPMENT

البنك العربي الكويتي للتنمية العربية

YOU ARE KINDLY REQUESTED TO FORWARD YOUR RESPONSE TO THE FUND IF THE ABOVE TERMS OF THE LOAN, AS WELL AS THE PROPOSED TIMING OF THE MISSION IS AGREEABLE TO YOU SO THE FUND CAN PROCEED WITH THE TRAVEL ARRANGEMENTS.

WITH THE ASSURANCE OF OUR BEST REGARDS.



ABDULWAHAB AL-BADER
DIRECTOR-GENERAL

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۳۰۰ میرزا علی شریعتی از این سوابق در کتاب خود *تاریخ اسلام* مذکور است و می‌گوید: «این اتفاق در سال ۱۲۴۰ هجری میان عده‌ای از علماء و ائمه شیعه و مخالفانش اتفاق پیشید که آنها می‌گفتند: این اتفاق را می‌توان بازی داشتن علی بن ابی طالب در قرآن می‌دانند.

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