

SUPPORTING REPORT
FOR
CHAPTER 10
Selection of Priority Projects

ANNEX to 10.1
Selected Projects for
Pre-Feasibility Study

Annex to 10.1 “Selected Projects for Pre-Feasibility Study”

Contents

	<u>Page</u>
(1) Financial/Economic Analysis of Individual Water Projects----- (Excl. Those already analyzed in Chap. 8.1 Economic and Financial Evaluation)	SA10-1
(2) Financial/Economic Analysis of ----- Individual Wastewater Treatment Projects	SA10-41

**(1) FINANCIAL/ECONOMIC ANALYSIS OF INDIVIDUAL WATER PROJECTS
(EXCL. THOSE ALREADY ANALYZED IN CHAP. 8.1 ECONOMIC AND FINANCIAL EVALUATION)**

Tamara Dam

Hydraulic Analysis (M m³/yr)

Item	Allocation	Water Qty	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Water Produced		15.6	0	0	0	0	0	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
Saved		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Municipal Water	0.80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Physical Losses (%)		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Physical Losses		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Administrative/Managerial Losses (%)		0.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Administrative/Managerial Losses		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quantity Delivered		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quantity Whose Bills are Collected		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial Water	0.62	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Physical Losses (%)		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Physical Losses		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Administrative/Managerial Losses (%)		0.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Administrative/Managerial Losses		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quantity Delivered		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quantity Whose Bills are Collected		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Irrigation Water	0.38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Physical Losses (%)		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Physical Losses		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Administrative/Managerial Losses (%)		0.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Administrative/Managerial Losses		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quantity Delivered		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quantity Whose Bills are Collected		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Financial Analysis (M JD or 2000 Prices)

Item	Percent	Amount	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Costs																							
Local Costs			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Foreign Costs			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Duty & Taxes			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Capital Costs		21.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operational Costs			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
O & M Costs			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Costs			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Revenues																							
Municipal Usage Qty (M m ³)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Municipal Tariff (JD/m ³)			0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411	0.411
Municipal Revenues (M JD)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial Usage Qty (M m ³)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial Tariff (JD/m ³)			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Industrial Revenues (M JD)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Irrigation Usage Qty (M m ³)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Irrigation Tariff (JD/m ³)			0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Irrigation Revenues (M JD)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Revenues (M JD)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Cash Flow (M JD)			0.0	-7.0	-7.0	-7.7	-8.3	-8.5	-8.6	-8.7	-8.8	-8.9	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0	-9.0
Discounting (Df=0.2%)			0.93897	0.98184	0.92785	0.87732	0.82908	0.78233	0.73751	0.69423	0.65225	0.61137	0.57149	0.53259	0.49468	0.45768	0.42160	0.38635	0.35186	0.31806	0.28490	0.25234	0.22034
Total Qty Whose Bills are Collected (M m ³)			0.0	0.0	0.0	0.0	13.7	14.0	14.2	14.4	14.5	14.7	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
FIRR		30%																					
NPV (M JD)		68.9	0.0	-6.3	-5.8	-6.0	-6.1	-6.2	-6.3	-6.4	-6.5	-6.6	-6.7	-6.8	-6.9	-7.0	-7.1	-7.2	-7.3	-7.4	-7.5	-7.6	-7.7
PV of Total Costs (M JD)		20.1	0.0	6.2	5.8	6.0	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.6	7.7
PV of Total Bills Collected Qty (M m ³)		142.6	0.0	0.0	0.0	0.0	18.0	18.6	19.1	19.7	20.2	20.7	21.2	21.7	22.2	22.7	23.2	23.7	24.2	24.7	25.2	25.7	26.2
Unit Water Price (F\$/m ³)		141																					

Economic Analysis (M JD at 2000 Prices)

Item	Percent	Amount	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Costs																							
Local Costs			0.0	0.0	0.0	8.8	0.0	8.8	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	8.8	0.0	8.0	0.0	0.0
Foreign Costs			0.0	0.0	0.0	8.8	0.0	8.8	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	8.8	0.0	8.0	0.0	0.0
Duty & Taxes			0.0	0.0	0.0	8.8	0.0	8.8	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	8.8	0.0	8.0	0.0	0.0
Total Capital Costs		21.7	0.0	7.0	7.0	7.7	0.0	8.8	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	8.8	0.0	8.0	0.0	0.0
Cumulative Costs			0.0	7.0	14.0	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7
O & M Costs			0.0	0.0	0.0	8.8	0.2	8.2	0.2	8.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	8.2	0.2	8.2	0.2	0.2
Total Costs			0.0	7.0	7.0	7.7	0.2	8.2	0.2	8.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	8.2	0.2	8.2	0.2	0.2
Benefits																							
Municipal Usage Qty (M m ³)			0.0	0.0	0.0	8.8	0.0	8.8	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	8.8	0.0	8.0	0.0	0.0
Unit Benefits of Municipal Water (JD/m ³)			0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735
Municipal Benefits (M JD)			0.0	0.0	0.0	8.8	0.0	8.8	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	8.8	0.0	8.0	0.0	0.0
Industrial Usage Qty (M m ³)			0.0	0.0	0.0	8.8	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.72	9.672	9.672	9.672	9.672	9.672
Unit Benefits of Industrial Water (JD/m ³)			2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740
Industrial Benefits (M JD)			0.0	0.0	0.0	8.8	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5
Irrigation Usage Qty (M m ³)			0.0	0.0	0.0	8.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.8	5.9	5.9	5.9	5.9	5.9	5.9
Unit Benefits of Irrigation Water (JD/m ³)			8.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	8.283	0.283	8.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	8.283
Irrigation Benefits (M JD)			0.0	0.0	0.0	8.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Total Benefits (M JD)			0.0	0.0	0.0	8.8	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2	28.2
Net Cash Flow (M JD)			0.0	-7.0	-7.0	-7.7	28.0	28.8	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.8	28.0	28.8	28.0	28.0	28.0	28.0
Discounting (DR=10%)			8.50909	0.82645	8.75131	0.68301	8.61092	0.56947	0.51316	0.46651	0.43410	0.38554	0.35849	0.31863	0.28946	8.26333	0.23015	8.21763	0.19784	0.17586	0.16351	0.14864	0.13513
Total Qty Delivered (M m ³)			0.0	0.0	0.0	8.8	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
EIRR																							
NPV (M JD)	70%		0.0	-5.8	-5.3	-5.3	17.4	15.8	14.3	13.0	11.9	10.8	9.8	8.9	8.1	7.4	6.7	6.1	5.5	5.0	4.6	4.2	3.8
PV of Total Costs (M JD)		17.7	0.0	5.8	5.3	5.3	8.1	0.1	8.1	0.1	8.1	0.1	0.1	0.1	0.1	0.1	0.1	0.8	0.0	8.8	0.0	8.8	0.0
PV of Total Qty Delivered (M m ³)		98.4	0.0	0.0	0.0	0.0	9.7	8.8	8.8	7.3	6.6	6.0	5.5	5.0	4.5	4.1	3.7	3.4	3.1	2.8	2.6	2.3	2.1
Unit Water Price (EJD/m ³)		180																					

Lajoun Wells

Hydraulic Analysis (M m³/yr)

Item	Allocation	Water Qty	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Water Produced		11	8	8	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	
Saved		0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Municipal Water	8.75	8.3	0.0	0.0	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	
Physical Losses (%)			0.24	0.23	0.22	0.21	0.21	0.20	0.19	0.18	0.17	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Physical Losses			0.0	0.0	1.8	1.7	1.7	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
Administrative/Managerial Losses (%)			0.21	0.19	0.14	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Administrative/Managerial Losses			0.0	0.0	1.3	1.2	1.0	0.8	0.7	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Quantity Delivered			0.0	0.0	6.4	6.5	6.5	6.6	6.7	6.8	6.8	6.9	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Quantity Whose Bills are Collected			0.0	0.0	5.1	5.4	5.5	5.8	5.9	6.1	6.3	6.4	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	
Industrial Water	8.25	2.8	0.0	0.0	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	
Physical Losses (%)			0.24	0.23	0.22	0.21	0.21	0.20	0.19	0.18	0.17	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Physical Losses			0.0	0.0	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
Administrative/Managerial Losses (%)			0.21	0.19	0.14	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Administrative/Managerial Losses			0.0	0.0	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Quantity Delivered			0.0	0.0	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
Quantity Whose Bills are Collected			0.0	0.0	1.7	1.8	1.8	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
Irrigation Water	8.88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Physical Losses (%)			0.24	0.23	0.22	0.21	0.21	0.20	0.19	0.18	0.17	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Physical Losses			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Administrative/Managerial Losses (%)			0.21	0.19	0.14	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Administrative/Managerial Losses			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Quantity Delivered			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Quantity Whose Bills are Collected			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Financial Analysis (M JD at 2000 Prices)

Item	Percent	Amount	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Costs																							
Local Costs	18%	1.0	0.4	0.6	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Foreign Costs	98%	9.0	3.6	5.4	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Duty & Taxes	8%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Capital Costs		10.0	4.0	6.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operative Costs			0.0	0.0	10.8	10.8	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
O & M Costs			0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Costs			4.0	6.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Revenues																							
Municipal Usage Qty (M m ³)			0.0	0.0	5.1	5.4	5.5	5.8	5.9	6.1	6.3	6.4	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Municipal Tariff (JD/m ³)			0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294	0.294
Municipal Revenues (M JD)			0.0	0.0	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Industrial Usage Qty (M m ³)			0.0	0.0	1.7	1.8	1.8	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Industrial Tariff (JD/m ³)			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Industrial Revenues (M JD)			0.0	0.0	1.7	1.8	1.8	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Irrigation Usage Qty (M m ³)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Irrigation Tariff (JD/m ³)			0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Irrigation Revenues (M JD)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Revenues (M JD)			0.0	0.0	3.2	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Net Cash Flow (M JD)			-4.0	-6.0	2.9	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Discounting (IDR=4.5%)			0.32097	0.30160	0.82795	0.77732	0.72988	0.68533	0.64351	0.60423	0.56735	0.53273	0.50021	0.46968	0.44102	0.41410	0.38883	0.36510	0.34281	0.32189	0.30224	0.28388	0.26648
Total Qty Whose Bills are Collected (M m ³)			0.0	0.0	6.8	7.2	7.4	7.7	7.9	8.1	8.4	8.6	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
ERR																							
ERR	29%																						
NPV (M JD)	11.3		-3.8	-5.3	2.4	2.4	2.3	2.3	2.2	2.1	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.0
PV of Total Costs (M JD)	12.4		3.8	5.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
PV of Total Bills Collected Qty (M m ³)	92.8		0.0	0.0	5.6	5.6	5.4	5.3	5.1	4.9	4.7	4.6	4.4	4.1	3.9	3.6	3.4	3.2	3.0	2.8	2.7	2.5	2.3
Unit Water Price (FJD/m ³)	134																						

Economic Analysis (M JD at 2000 Prices)																									
Item	Percent	Amount	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020		
Costs																									
Local Costs	10%	1.8	0.4	0.6	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8		
Foreign Costs	90%	9.8	3.6	5.4	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8		
Duty & Taxes	0%	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8		
Total Capital Costs		10.8	4.0	6.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8		
Operational Costs			0.0	0.0	10.8	10.0	10.0	10.8	10.0	10.0	10.8	10.0	10.0	10.8	10.0	10.0	10.8	10.0	10.0	10.8	10.0	10.0	10.8		
O & M Costs			0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
Total Costs			4.0	6.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3		
Benefits																									
Municipal Usage Qty (M m ³)			0.0	0.0	6.4	6.5	6.5	6.4	6.7	6.8	6.8	6.9	7.0	7.8	7.0	7.0	7.8	7.0	7.0	7.8	7.0	7.0	7.8		
Unit Benefits of Municipal Water (JD/m ³)			0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735		
Municipal Benefits (M JD)			0.0	0.0	4.7	4.8	4.8	4.5	4.9	5.0	5.8	5.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2		
Industrial Usage Qty (M m ³)			0.0	0.0	2.7	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3375	2.3375	2.3375	2.3375	2.3375	2.3375		
Unit Benefits of Industrial Water (JD/m ³)			2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740		
Industrial Benefits (M JD)			0.0	0.0	5.8	6.0	6.0	6.8	6.1	6.2	6.3	6.3	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4		
Irrigation Usage Qty (M m ³)			0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8		
Unit Benefits of Irrigation Water (JD/m ³)			0.183	0.183	0.283	0.183	0.183	0.283	0.183	0.183	0.183	0.283	0.183	0.283	0.183	0.183	0.283	0.183	0.183	0.283	0.183	0.183	0.283		
Irrigation Benefits (M JD)			0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8	0.0	0.0	0.8		
Total Benefits (M JD)			0.0	0.0	10.6	10.7	10.7	10.5	11.0	11.2	11.3	11.4	11.6	11.8	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6		
Net Cash Flow (M JD)			-4.0	-6.0	10.3	10.4	10.4	10.4	10.7	10.9	11.8	11.1	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3		
Discounting (DR=10%)			0.90909	0.81645	0.75131	0.68301	0.61092	0.56447	0.51316	0.46651	0.42418	0.38554	0.35049	0.31861	0.28966	0.26333	0.23919	0.21763	0.19784	0.17986	0.16351	0.14864	0.13513		
Total Qty Delivered (M m ³)			0.0	0.0	8.4	8.7	8.7	8.8	8.9	9.0	9.1	9.2	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4	9.4		
EIRR																									
NPV (M JD)	79%		-3.6	-5.0	-7.7	-7.1	-6.5	-6.8	-5.5	-5.1	-4.7	-4.3	-3.9	-3.6	-3.3	-3.0	-2.7	-2.5	-2.2	-1.8	-1.8	-1.7	-1.5		
PV of Total Costs (M JD)			3.6	5.8	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0		
PV of Total Qty Delivered (M m ³)			69.6	0.0	8.8	8.4	8.9	9.4	9.0	9.2	9.9	9.6	1.3	1.0	2.7	2.5	2.2	2.0	1.8	1.7	1.5	1.4	1.3		
Unit Water Price (FJD/m ³)			157																						

Caracoor Water Supply Project

Hydraulic Analysis (M m³/yr)

Item	Allocation	Water Qty	2000	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Water Produced		10	0	0	10	10	10	10	10	10	10	10	10
Saved		0	0	0	0	0	0	0	0	0	0	0	0
Municipal Water	0.90	9.0	0.0	1.1	9.0	9.0	1.1	9.0	1.1	9.0	1.1	9.0	1.1
Physical Losses (%)			0.24	0.23	0.22	0.21	0.21	0.20	0.19	0.18	0.17	0.16	0.15
Physical Losses			0.0	1.1	2.0	1.9	1.9	1.8	1.7	1.6	1.5	1.4	1.4
Administrative/Managerial Losses (%)			0.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05
Administrative/Managerial Losses			0.0	1.1	1.4	1.3	1.1	0.9	0.8	0.7	0.6	0.5	0.5
Quantity Delivered			0.0	1.1	7.0	7.1	7.1	7.2	7.3	7.4	7.5	7.6	7.7
Quantity Whose Bills are Collected			0.0	1.1	5.6	5.9	6.1	6.3	6.5	6.7	6.8	7.0	7.2
Industrial Water	0.10	1.0	0.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Physical Losses (%)			0.24	0.23	0.22	0.21	0.21	0.20	0.19	0.18	0.17	0.16	0.15
Physical Losses			0.0	1.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Administrative/Managerial Losses (%)			0.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05
Administrative/Managerial Losses			0.0	1.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Quantity Delivered			0.0	1.1	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9
Quantity Whose Bills are Collected			0.0	1.1	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8
Irrigation Water	0.00	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0
Physical Losses (%)			0.24	0.23	0.22	0.21	0.21	0.20	0.19	0.18	0.17	0.16	0.15
Physical Losses			0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0
Administrative/Managerial Losses (%)			0.21	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.05
Administrative/Managerial Losses			0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0
Quantity Delivered			0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0
Quantity Whose Bills are Collected			0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0

Financial Analysis (M JD at 2000 Prices)

Item	Percent	Amount	2000	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Costs													
Local Costs			0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0
Foreign Costs			0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0
Duty & Taxes			0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0
Total Capital Costs		10.0	4.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0
Contingent Costs			0.0	1.1	10.0	10.0	1.1	10.0	10.0	1.1	10.0	10.0	10.0
O & M Costs			0.0	1.1	0.3	0.3	1.1	0.3	0.3	1.1	0.3	0.3	0.3
Total Costs			4.0	1.1	0.3	0.3	1.1	0.3	0.3	1.1	0.3	0.3	0.3
Revenues													
Municipal Usage Qty (M m ³)			0.0	1.1	5.6	5.9	6.1	6.3	6.5	6.7	6.8	7.0	7.2
Municipal Tariff (JD/m ³)			1.294	0.294	0.294	1.294	0.294	0.294	1.294	0.294	0.294	1.294	0.294
Municipal Revenues (M JD)			0.0	1.1	1.6	1.7	1.8	1.9	1.9	2.1	2.1	2.1	2.1
Industrial Usage Qty (M m ³)			0.0	1.1	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8
Industrial Tariff (JD/m ³)			1.800	1.000	1.000	1.800	1.000	1.800	1.000	1.800	1.000	1.800	1.000
Industrial Revenues (M JD)			0.0	1.1	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8
Irrigation Usage Qty (M m ³)			0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0
Irrigation Tariff (JD/m ³)			0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Irrigation Revenues (M JD)			0.0	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0
Total Revenues (M JD)			0.0	1.1	2.3	2.4	2.4	2.6	2.6	2.7	2.8	2.9	2.9
Net Cash Flow (M JD)			-4.0	-1.1	2.0	2.1	2.1	2.3	2.3	2.4	2.5	2.6	2.6
Discounting (D.R.=0.5%)			0.93197	0.88168	1.12785	0.77732	0.72889	1.18553	0.64151	0.60421	1.156755	0.53173	0.50021
Total Qty Whose Bills are Collected (M m ³)			0.0	1.1	6.2	6.5	6.7	7.0	7.2	7.4	7.6	7.8	8.0
FIRE	21%												
NEV (M JD)			18.4	-3.8	-5.3	1.6	1.6	1.6	1.5	1.5	1.4	1.4	1.3
FV of Total Costs (M JD)			12.4	3.2	5.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
FV of Total Bills Collected Qty (M m ³)			84.4	0.0	0.0	5.1	5.1	4.9	4.8	4.6	4.5	4.2	4.0
Unit Water Price (Billa/m ³)			147										

Economic Analysis (M JD at 2000 Prices)

Item	Percent	Amount	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Costs																							
Local Costs			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Foreign Costs			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Duty & Taxes			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Capital Costs		10.0	4.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Contingency Costs			0.0	0.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
O & M Costs			0.0	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total Costs			4.0	6.0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Benefits																							
Municipal Usage Qty (M m ³)			0.0	0.0	7.0	7.1	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
Unit Benefits of Municipal Water (JD/m ³)			0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735	0.735
Municipal Benefits (M JD)			0.0	0.0	5.2	5.2	5.2	5.3	5.4	5.4	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
Industrial Usage Qty (M m ³)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.85	0.85	0.85	0.85	0.85	0.85
Unit Benefits of Industrial Water (JD/m ³)			2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740	2.740
Industrial Benefits (M JD)			0.0	0.0	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Irrigation Usage Qty (M m ³)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unit Benefits of Irrigation Water (JD/m ³)			0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283	0.283
Irrigation Benefits (M JD)			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Benefits (M JD)			0.0	0.0	7.3	7.4	7.4	7.5	7.6	7.7	7.8	7.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Net Cash Flow (M JD)			4.0	-6.0	7.0	7.1	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
Discounting (DR=10%)			0.90909	0.82645	0.75131	0.68301	0.62092	0.56447	0.51316	0.46651	0.42418	0.38554	0.35049	0.31863	0.28968	0.26323	0.23939	0.21763	0.19784	0.17986	0.16351	0.14864	0.13513
Total Qty Delivered (M m ³)			0.0	0.0	7.0	7.1	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
KPIs		50%																					
NPV (M JD)		48.3	-3.0	-5.0	5.3	4.8	4.4	4.1	3.7	3.4	3.2	2.9	2.7	2.4	2.2	2.0	1.8	1.7	1.5	1.4	1.3	1.1	1.0
PV of Total Costs (M JD)		10.9	3.6	5.0	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
PV of Total Qty Delivered (M m ³)		63.3	0.0	0.0	5.9	5.4	4.9	4.5	4.2	3.8	3.5	3.2	3.0	2.7	2.5	2.2	2.0	1.8	1.7	1.5	1.4	1.3	1.1
Unit Water Price (JD/m ³)		172																					