# SUPPORTING REPORT FOR

### **CHAPTER 3**

National Water Control System

## **Supporting Report for Chapter 3 "National Water Control System"**

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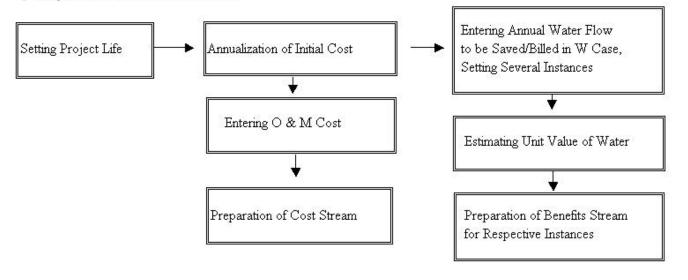
### **ANNEX to 3.7.2**

**Economic and Financial Analysis** 

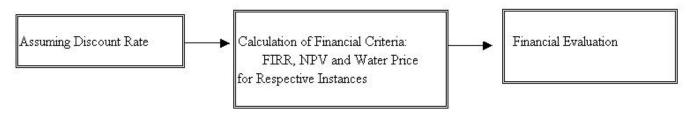
Economic and Financial Analysis

#### 1. Financial Analysis

1) Preparation of Cost Benefits Streams



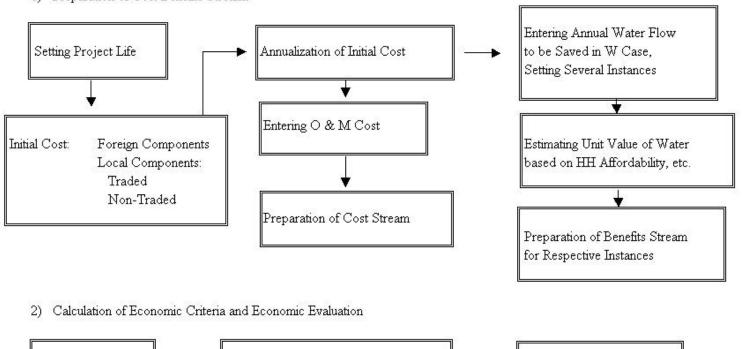
2) Calculation of Financial Criteria and Financial Evaluation



Methodology for Economic and Financial Analysis of National Water Control System Project

#### 2. Economic Analysis

1) Preparation of Cost Benefits Streams



Assuming OCC Calculation of Economic Criteria: Economic Evaluation

EIRR, NPV and Water Price
for Respective Instances

Methodology for Economic and Financial Analysis of National Water Control System Project

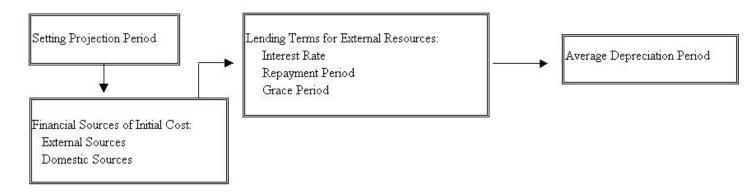
Hydraulic Amilysis (M m3/yr)																				
Iten.	Allocation.	Water Qty	2003	3004	2005	2001	2007	2008	2009	2010	2011	2012	2013	2014	2015	HH	2017	2018	2019	2020
al Water Produced (M m3/year)	450000000	111.00	321.115	220,060	340.679	360.582	381.65T	414.091	427.843	453.941	453.040	453.848	453.040	455,040	453,841	453,040	453,840	453.040	453,040	453.P
éer Sarrá (M. m.Dyour)			3.201	3.301	1.407	3.606	3.817	4,041	4,278	4.531	4.530	4.538	4,530	4.530	4.531	4.530	4.530	4,530	4.530	4.5
anous al Water			281,982	267.273	212.671	289.443	307.249	326,149	346,213	36T.51.8	367.510	367.518	387.510	367.510	367.51.8	367.510	367.510	367.510	367.510	367.5
themral Laurer (%)			1.21	0.21	1.21	0.19	0.18	1.17	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	1.15	0.15	D
Topical Luises			55.016	56.127	54,534	54.994	55.385	55,445	55.394	15.127	55 127	55.127	55.127	55.127	55.127	55.127	55 127	55.127	55.127	55.1
dministrative/Managerial Losses (%)			1.14	0.12	1.13	0.09	0.88	3.07	0.06	0.85	0.05	0.15	8.05	0.05	0.85	0.05	0.85	1.05	0.05	D
dragartrative/Managerial Lorger			36.678	32,073	27.267	26,050	24.588	22.830	20.773	18.376	13.376	18.376	18.376	18,376	18.376	18.376	18.376	11.376	18.376	18.3
Likitional Charatty Delivered			1.310	1.336	1.363	L447	1.516	1.631	1.731	1.838	1.838	1.111	1.838	1.838	1.838	1.838	1.128	1.838	1.838	1.1
Additional Quantity Whose Bills are Collected			2 630	2.673	2.727	2.394	5.672	1.261	3.462	3.673	1 675	3.673	1 675	3.675	3.875	1675	3.615	3.675	1.675	3.6
dastrial Water			53.712	57.278	61.031	62.492	65.555	61.605	71.314	74.138	74.130	74.138	24.130	74.130	74.131	74.130	74.150	24.130	74.130	74.1
Stracel Laures (%6)			1.21	0.21	1.21	0.19	0.18	1.17	0.16	0.15	0.15	0.15	1.15	0.15	0.15	0.15	0.15	1.15	0.15	. 0
			11,280	12,028	12.216	12.063	11.888	11.663	11.410		11.120		11.120		11.121		11.120	11.120	11.120	11.1
byncal Lauser										11.128		11.128		11.120		11.120				
Aministrative Managerial Losses (%)			1.14	0.12	1.11	0.09	0.68	1.07	0.06	0.15	0.05	0.81	1.05	0.05	0.15	0.05	0.85	1.05	0.05	0
Amustrative Managerial Losses			7.520	6.673	4.103	5.714	5.200	4.802	4.279	3.787	1.707	3.707	3.707	3,707	3,717	1.707	3.787	1.707	3.707	3.7
Additional Quantity Delivered			1.269	0.286	6.305	0.317	0.328	1,343	0.387	1.371	0.371	0.371	1.371	0.371	0.371	0.371	0.371	1.371	0.371	0.1
Additional Quantity Whose Bills are Collected			8,537	0.573	4.811	0.635	0.668	1.686	0.713	8.79E	0.741	0.743	1.741	0.741	0.741	0.741	0.741	1.741	0.741	0.7
unitic Water			4.419	5.530	6.928	7.647	8.445	9.337	10.217	11.400	11.400	11.403	11.400	11.400	11.411	11.400	11.410	11.400	11.400	11-
hysical Lusses (%6)			1.21	0.21	1.21	0.19	0.18	1.12	0.16	0.15	0.15	0.15	1.15	0.15	0.15	0.15	0.15	1.15	0.15	.0
Ayrical Lasces			1.928	1.161	3.384	1.453	1.521	1.587	1.681	1.713	1.710	1.738	1.710	1:710	1.71.1	1.710	1.TID	1.710	1.710	1.3
dramartrative/Managerial Loreer (%)			1.14	0.12	1.11	0.09	0.68	1.07	0.06	0.15	0.05	0.85	1.05	0.05	0.85	0.05	0.85	1.05	0.05	0
Aministrative Managenal Losses			9.619	0.664	1.892	0.688	0.676	1.654	0.619	6.571	0.570	0.578	8.570	0.570	0.578	0.570	0.510	1.570	0.570	0.5
Aldringal Overtity Delivered			9.022	0.028	0.035	0.038	0.842	1.047	0.052	8.857	0.057	0.057	1.057	0.057	0.857	0.057	0.857	1.057	0.057	0.1
Addressal Quantity Whore Bills are Collected			1.044	0.055	1.069	0.076	0.184	1.093	0.103	0.114	0.114	0.114	1.114	0.114	0.114	0.114	0.114	1.114	0.114	0.1
							0			- 49										
xencial Analysis (M JD at 2001 Prices)			20000		2000		0			0 1		-4		3200					57.70	
ltera	Percent	Amend	2003	2004	2005	MEG	2007	2008	2009	2010	2811	2002	2013	2014	2015	1816	2017	2018	2017	2020
地	664	0.000	1.000	0.000	1.001 ¶	0.000		1.000	0.000	1,140	0.000	N	1.000	0.000	0.511	0.000	0.000	1.000	0.000	0.1
and Components	0%	0.000					50111	1,000	0.000	-000	0.000	D.LLL	1.000	0,000	0.811		0.000			
Greign Congiments	100%	13.386	3.657	3.657	8.008	2,022	12.122	2.022	0.000	Em:	0.000	20111	1,000	0.000	0.888	0.000	0.810	1.000	0,000	0.1
Fely di Tesses	056	0.000		0.000	1,001	0.000	0.000	1,000	0.000	1.111	0.000	9111	8,000	0.000	0.111	0.000	0.000	1.000	0.000	0.1
Petal Capital Costs		13.111	1.657	3.667	6.008	2.022	2.622	2.022	0.000	1.111	0.000	0.000	1,000	0.000	0.000	0,000	0.880	1.000	0.000	0.1
Diamolative Costs			3.657	7.334	T314	9.336	11.338	13.380	13.380	33.388	13.380	13.388	13.380	13.380	13.381	13.380	13.380	13.380	13.380	13.3
O & M Cods			0.000	0.000	1,667	0.687	Dest	1.687	0.687	1.71.8	1.719	1:718	1.719	1.719	1.713	1.719	1.719	1.719	1.719	1,7
Tirtal Costs			3.657	3.657	1.637	2.709	2.765	2.709	0.687	1.719	1.719	1.715	1.719	1:719	1.719	1.719	1.719	1.719	1.719	1.3
ENEZZEE			224020	USHED-R	9-700-00-	2-202000	0.000.00	212220	0.000	250000	21404400	10000400	10124222	200.000000	50.000	112102011	370,000	(80/20-016)	900000	1000
Municipal Usage Qty (M.m.I)			2.620	2.673	2.727	2.894	3.072	3.261	3.462	3.875	3.675	3.675	3.675	3.675	3.675	3.675	3,675	3.675	3.675	3.6
Municipal Tariff (JD/mJ)			0.341	0.341	1.351	0.362	0.373	1,354	0.395	1.417	0.407	0.487	1.407	0.407	0.417	0.407	0.417	1.407	6.407	0.4
Auxinpal Revenues (M JD)			1.893	0.911	1,951	1.047	1.145	1.252	1.369	1.496	1.496	1.456	1.496	1.496	1.436	1.496	1.456	1.496	1.496	1.4
4			1.537		1.011	0.655	23.661	1 636	0.715	1.790	0.741	0.741	134	0.741	0.741	0.741	0741	1.741	0.741	D.
shartrial Urage Qty (M m3)				0.575											-					
ndustrial Teriff (ID/m3)			1.000	1.000	1.031	1.061	1.153	1.126	1.159	1,134	1.194	3.154	1.194	1 194	1.194	1.194	1.154	1.194	1.194	1.1
ndurtoid Revenues (M 3D)			1.537	0.573	8,629	0.674	0.721	1.772	0.627	1.315	0.885	0.885	1.885	0.885	0.985	0.885	0.005	1.885	0.885	0.1
Crunistic Usage Oty (M m3)			9.044	0.055	8.069	0.076	:0.684	1.093	0.103	0.114	0.114	.0.114	0.114	0.114	031941	0.114	0.134	0.0146	0.114	0.03
Ferrito Twiff (JD/m3)			1.000	1.000	1.038	1.061	1.093	1.126	1.159	11194	1.194	1.184	1.194	1.194	1134	1.194	1.154	1.194	1.194	13
Feuristic Revenues (M.JD)			3.044	0.055	8,071	0.081	0.852	1.105	0.120	8.136	0.136	0.136	1.136	0.136	0.136	0.136	0.126	1 136	0.136	0.
			1.405	1.539	1.651	1.802	1.554	2 120	2.315	2.518	2.518	2518	2.518				2.518	2.518	2.518	2.5
etal Revenue (M.JD)			1,970	1.539	1.051	1.3002	4.000	2.129	4315	2.318	4518	2518	2.514	2.518	2.518	2.518	2518	2,518	2516	2
t Cash Flow (M JD)			-1.182	-2.117	1,971	-0.90T	-0.758	-1.580	1.628	1.793	0.799	0.755	1.799	0.799	0.799	0.799	0.799	1.799	0.799	0.7
counting (DR=9%)			0.95238	0.90703	1,36334	0.82270	0.78353	8,74622	0.71068	1.67914	0.64461	0.61291	1.53463	0.55684	1.53932	0.50507	0.48182	1.45811	0.43630	0.41
tal Qty Whose Bills are Collected (M m3)			3,201	3.301	3,407	3.606	3.117	4.041	4.276	4.533	4.530	4.531	4.530	4,530	4.533	4.530	4.530	4.530	4.530	4.
	10.00																			
<del>(R</del>	10.0%		3523		266	5000	35.000			5555		12,000	1200	10000	1000		200		2000	923
PV (M JD)	2.701		-2.078	-1.921	1.839	-0.746	-0.588	1.403	1.157	E.34L	0.515	0.498	1.467	0.445	0.423	0.403	0.384	1.366	0.348	D.
For Total Costs (M JD)	30.335		3.483	3.317	1.593	2.229	2.122	2.021	0.488	3.1.64	L 108	1.155	1,005	0.967	0.912	0.868	0.127	1.788	0.750	D.:
V of Tirtal Bills Collected Qty (M m3)	63,379		3.049	2.594	2.943	2.967	2.551	3.015	3.041	3.866	2.920	2.783	2.649	2.523	2.413	2.288	2.179	2.075	1.977	1.
ik Water Price (Pile/mS)	479																			

SB3-3

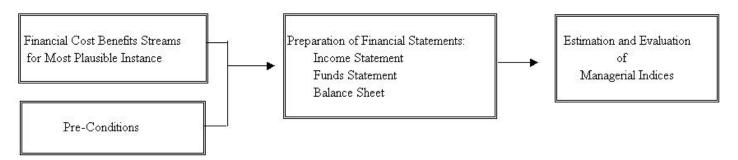
Item.	Percent	Amount	2003	2094	2885	2006	2007	2008	2009	28:18	2011	2012	2013	2014	2815	2016	2017	2018	2019	2021
Corto																				
Local Components		0.000	0.000	0.000	0.000	1.011	0.000	0.000	0.000	0.000	1.001	0.000	0.000	0.000	0.000	1.000	1.111	0.000	0.000	0.000
Foreign Components		13.380	3.657	3.657	0.000	2.022	2,832	2.022	0.000	0.000	1.001	0.000	0.000	0.000	0.000	0.000	1.111	0.000	0.000	0.000
Duty & Taxes		0.600	0.000	0.000	0.000	0.011	0.660	0.000	0.000	0.000	1.001	0.000	0.000	0.000	0.000	1.000	1.00	0.600	0.000	0.000
Total Capital Costo		13.180	3.657	3.657	0.000	2,022	2,822	2.022	0.000	0.000	1.001	0.000	0.000	0.000	0.000	1.000	1.111	0.000	0.000	0.000
Cumulative Costs			3.657	7.514	7.314	5.336	11.156	13,380	13,380	13.380	13.351	15.366	13,360	13,380	13,380	13.330	13.386	13,760	15.580	13.380
O & M. Conta			0,000	0.000	0.687	1.607	0.687	0.687	0.687	1.719	1.713	1.718	1.719	1.719	1.719	1.719	1.718	1,719	1.719	1.719
Total Costs			3.657	3.657	0.687	2.719	2.719	2.709	0.687	1.719	1.719	1.715	1.719	1.719	1.719	1.719	1.715	1.719	1.719	1.719
Denetits																				
Municipal Urage Qty (M mS)			1.310	1.336	1.363	1.447	1.536	1.631	1,731	1,838	1.331	1.838	1.838	1.838	1.838	1.333	1.331	1.138	1.838	1.838
Unit Benefits of Municipal Water (JD/ml)			0.735	0.735	0.735	1.715	0.735	0.735	0.735 4	0.786	1.735	0.716	0.735	0.735	0.735	1.735	1.715	0.735	0.735	0.735
Municipal Benefits (M JD)			0.963	0.982	1.002	1464	1.129	1.199	1.272	1351	1.351	735	1,351	1.351	1,351	L35E	1.351	1.351	1,351	1.35
Industrial Urage Qty (M m3)			0.269	0.286	0.305	130	0.118	0.343	8 357	0.371	1371	- 4	0.371	0.371	0.371	1371	1.371	0.371	0.371	0.379
Unit Benefits of Industrial Water (JD/m3)			2.740	2.740	2.740	1341	2.740	2.740	2.740	2.740	2.741	241	2.740	2.740	2 740	2.740	1.741	2.740	2.740	2.740
Industrial Benefits [M JD]			0.736	0.785	0.837	1.833	0.914	0.940	0.977	1.016	1.016	110	1.016	1.016	1.016	0.10.1	1.81.6	1.016	1.016	1.016
Touristic Usage Qby (M m3)			0.002	0.028	0.035	8.016	0.842	0.047	0.052	0.037	1.057	DISST	0.087	0.057	0.097	1 057	1.1ST	0.057	0.057	0.057
Unit Benefits of Touristic Water (JD/m3)			2.740	2.740	2.740	1.741	2.740	2.740	2.740	2 740	2.741	2.748	2.740	2.740	2 740	2.740	2.741	2.740	2.740	2.740
Touristic Benefits (M.JD)			0.061	0.076	0.095	1.115	0.336	0.128	0.141	0.156	1.156	0.156	0.156	0.156	0.156	1.156	8.156	0.156	0.156	0.156
Total Benefits (M.JD)			1.759	1,843	1.934	2.038	2.149	2.266	2.391	2.522	1311	2,522	2,522	2.522	2.522	2.522	2.522	2.522	2.582	2.582
let Cash Fliny (M.JD)			-1.898	-1.814	1.247	-8:671	-0.560	-0.442	1.704	0.803	1.803	0.863	0.803	0.803	0.803	1 303	1.103	0.003	0.803	0.803
iscountag (DR=10%)			0.90909	0.90909	0.33645	1.75131	1.60201	0.42092	0.56447	0.51316	0.46651	1.42431	0.18554	0.35049	0.31863	0.28966	1.36333	0.23539	0.21763	0.19784
otal Qty Delivered (M m3)			1.601	1.650	1.703	1.813	1.518	2.020	2.139	2.265	1.265	2.365	8.265	2.205	2.265	7.205	2.265	2.265	2,285	2.205
IRR	13.8%																			
IPV (M JD)	1.434		-1.725	1.649	1.030	-1.514	-0.312	-0.275	0.962	0.412	1.375	0.341	0.310	0.282	0.256	1.233	1.21.2	0.192	0.175	0.158
V of Total Costs (M.JD)	21.693		3.324	3.324	0.568	2.035	1.830	1.662	0.388	0.882	1.902	0.725	0.663	0.603	0.548	1.493	1.452	0.412	0.374	0.34
V of Total Qty Delivered (M m3)	28.695		1.455	1.500	1.403	1.355	1.164	1.255	1.208	1.162	1.057	0.961	0.873	0.794	0.722	1.656	1.534	0.542	0.493	0.44
hit Water Price (Filahn3)	1,848		-00140CO.	30000	0050206	75777	<0.000	0.000000	112/11/20	4.470	14-35000		207.375	0.55 (0.00)	100	-	0.000.0	-2000		

# ANNEX to 3.7.3 Financial Statements

#### 1. Setting Pre-Conditions



#### 2. Preparation and Evaluation of Projected Financial Statements



Methodology for Preparation of Financial Statements for National Water Control System Project