

The Study on Water Resources Management in The Hashemite Kingdom of Jordan
Final Report/Supporting Report Part-A "Master Plan"

Meters (Units=10 Million ²)		Hydraulic Analysis (m³/year)																					
Item	Attributes	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Water Product		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Industrial Water	0.80	0.8	0.0	0.0	0.9	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	
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	0.15	0.15	
Physical Losses	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	0.0	0.0	0.0	0.0	
Administration/Managerial Losses (%)	0.23	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	
Administration/Managerial Losses	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	0.0	0.0	0.0	0.0	
Quality Delivered	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	0.0	0.0	0.0	0.0	
Quality Where Bills are Collected	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	0.0	0.0	0.0	0.0	
Irrigation Water	1.80	0	0	0	0	0	119,361	180,697	322,681	914,925	910,418	1,024,314	1,024,316	1,102,133	1,146,846	1,189,963	1,253,076	1,277,795	1,332,004	1,384,276	1,440,667	1,494,989	1,549,250
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	0.15	0.15	
Physical Losses	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	0.0	0.0	0.0	0.0	
Administration/Managerial Losses (%)	0.23	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	
Administration/Managerial Losses	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	0.0	0.0	0.0	0.0	
Quality Delivered	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	0.0	0.0	0.0	0.0	
Quality Where Bills are Collected	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	0.0	0.0	0.0	0.0	
Financial Analysis (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
Cost																							
Local Components	57%	218,831	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Foreign Components	43%	167,880	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	
Total Capital Costs	307,811	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	
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	
Total Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Revenue																							
Industrial Usage Qty (m³)	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/m³)	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	1,000	
Industrial Revenue (JD)	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 (m³)	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/m³)	0.10	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 Revenue (JD)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Revenues (JD)	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 (JD)	0	0	-204,844	-71,819	78,947	14,380	10,939	10,939	10,939	10,939	10,939	10,939	10,939	10,939	10,939	10,939	10,939	10,939	-10,939	-10,939	-10,939	-10,939	
Depreciating (JD=0.0%)	0.90008	0.00445	0.75151	0.65001	1.64002	1.54003	0.51306	0.44651	0.42418	0.38594	0.30183	0.29066	0.18103	0.17865	0.17865	0.17865	0.17865	0.17865	0.17865	0.17865	0.17865	0.17865	
Total Qty Where Bills are Collected (m³)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EBITDA	326																						
NPV (JD)	511,281	0	0	0	-10,754	44,897	44,958	41,531	41,869	48,444	31,881	37,266	35,561	33,358	2,635	28,458	28,838	27,558	24,182	24,070	23,588	23,318	
PV of Total Costs (JD)	351,843	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PV of Total Qty Delivered (m³)	6,892,888	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Unit Water Price (JD/m³)	58																						
Economic Analysis (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
Cost																							
Local Components	57%	218,831	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Foreign Components	43%	167,880	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	
Total Capital Costs	307,811	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	
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	
Total Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Revenue																							
Industrial Usage Qty (m³)	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/m³)	1,740	1,740	1,740	1,740	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 Revenue (JD)	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 (m³)	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/m³)	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	
Irrigation Revenue (JD)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Revenues (JD)	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 (JD)	0	0	-204,844	71,819	78,947	14,380	10,939</																

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Results (Year=18 Elbow): Hydraulic Analysis (in 'm)		Item	Allocation	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Year	Allocation			2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Water Reused				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Industrial Water	0.06			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		
Physical Loss (%)				0.24	0.22	0.22	0.21	0.21	0.20	0.19	0.18	0.17	0.18	0.15	0.15	0.15	0.15	0.15	0.15	0.15		
Physical Loss				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		
Administrative/Managerial Losses (%)				0.11	0.11	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		
Administrative/Managerial Losses				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		
Quality Delivered				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		
Quality Whose Bills are Collected				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		
Industrial Water	1.08			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Physical Loss (%)				0.24	0.22	0.22	0.21	0.21	0.20	0.19	0.18	0.17	0.18	0.15	0.15	0.15	0.15	0.15	0.15	0.15		
Physical Loss				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Administrative/Managerial Losses (%)				0.11	0.11	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		
Administrative/Managerial Losses				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Quality Delivered				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Quality Whose Bills are Collected				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Financial Analysis (JD at 2000 Prices)		Item	Period	Allocation	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Item	Period			Allocation	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Costs																						
Local Components	38%	284,157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Foreign Components	44%	227,328	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		
Total Capital Costs	531,483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Construction Costs	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		
Total Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Revenue																						
Industrial Usage Qty (m³)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Industrial Tariff (JD/m³)	1,081	1,081	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080	1,080		
Irrigation Revenue (JD)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Irrigation Usage Qty (m³)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Irrigation Tariff (JD/m³)	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038		
Total Revenues (JD)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Net Cash Flow (JD)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Discounting (JD=10%)	1,9387	1,9387	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293	0.2293		
Total Qty Whose Bills are Collected (m³)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
EIRR	9%																					
NPV (JD)	63,325	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PV of Total Costs (JD)	508,217	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PV of Total Qty Delivered (m³)	15,006,904	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
User Water Price (MJD/m³)	38																					
Economic Analysis (JD at 2000 Prices)		Item	Period	Allocation	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Item	Period			Allocation	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Costs																						
Local Components	38%	284,157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Foreign Components	44%	227,328	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		
Total Capital Costs	531,483	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Construction Costs	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		
Total Costs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Revenue																						
Industrial Usage Qty (m³)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Industrial Benefits (JD/m³)	2,748	2,748	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 (JD)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Irrigation Usage Qty (m³)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Irrigation Benefits (JD/m³)	1,142	1,142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142		
Irrigation Benefits (JD)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Benefits (JD)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Net Cash Flow (JD)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Discounting (JD=10%)	1,17,331	1,17,331	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892	0.22892		
Total Qty Delivered (m³)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
EIRR	55%																					
NPV (JD)	90,423	0	0	0	0	0	0	0	-145,301	39,582	60,081	61,157	61,182	58,792	58,725	58,239	52,308	30,788	7,358	47,382	49,575	
PV of Total Costs (JD)	232,218	0	0	0	0	0	0	0	0	141,081	14,211	12,819	11,345	10,679	8,024	7,283	6,031	4,037	47,125	5,872	4,411	4,192
PV of Total Qty Delivered (m³)	8,708,755	0	0	0	0	0	0	0	0	521,587	519,339	515,215	507,890	491,893	473,194	454,698	435,207	415,288	301,208	301,025	351,674	335,894
User Water Price (MJD/m³)	38																					