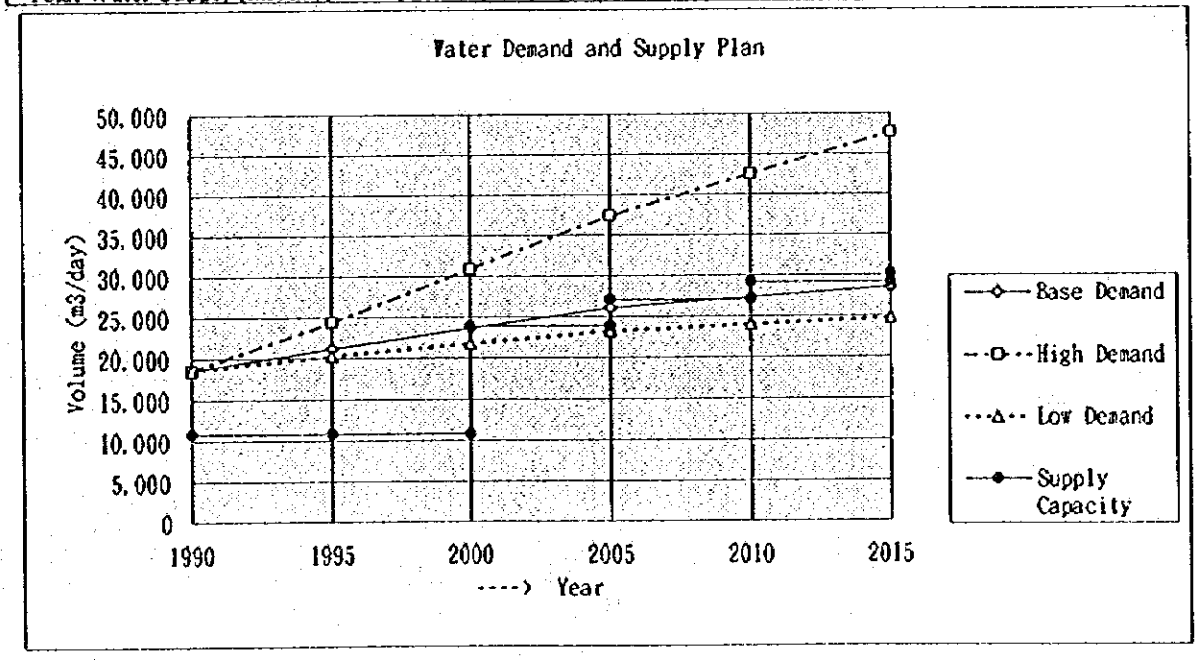
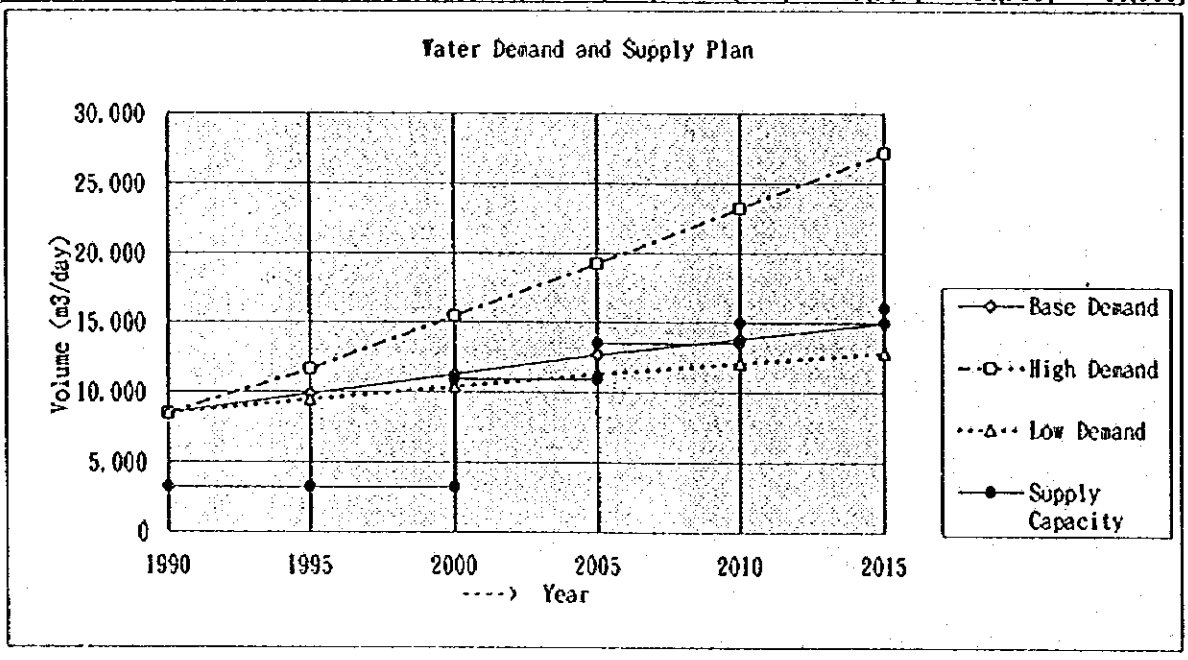
(8) Water Demand and Supply Plan for Small Urban Areas (Northern Province)

SMALL URBAN AREAS					PROVINCE		
					80	Northern	
1990 CENSUS POPULATION AND FUTURE PROJECTION							
1990 Census Data		Projection Scenarios			1995	2005	2015
- Population	70,256	(1) Base Projection			76,517	88,083	97,805
- Household	14,894	(2) High Projection			84,591	121,996	174,649
- Family Size	4.7	(3) Low Projection			75,887	84,377	89,481
WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	10,538	11,478	12,345	13,212	13,942	14,671
	(High)	10,538	12,689	15,494	18,299	22,248	26,197
	(Low)	10,538	11,383	12,020	12,657	13,039	13,422
< Industrial Water >							
Water Demand (m3/day)	(Base)	5,642	6,909	8,177	9,444	9,799	10,153
	(High)	5,642	8,510	11,378	14,246	14,768	15,290
	(Low)	5,642	6,281	6,920	7,559	7,826	8,093
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	16,180	18,387	20,522	22,656	23,740	24,824
	(High)	16,180	21,199	26,872	32,545	37,016	41,487
	(Low)	16,180	17,664	18,940	20,216	20,865	21,515
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	18,607	21,145	23,600	26,055	27,301	28,547
	(High)	18,607	24,378	30,903	37,427	42,569	47,710
	(Low)	18,607	20,314	21,781	23,248	23,995	24,742
< Water Supply Program >							
- Existing Capacity (m3/day)		10,821	10,821	10,821	10,821	10,821	10,821
- New Water Supply (m3/day)				13,039	13,039	13,039	13,039
- New Water Supply					3,138	3,138	3,138
- New Water Supply						2,126	2,126
- New Water Supply							1,023
- Total Water Supply (m3/day)		10,821	10,821	23,860	26,998	29,124	30,147



(9) Water Demand and Supply Plan for Small Urban Areas (Eastern Province)

SMALL URBAN AREAS					PROVINCE		
					90	Eastern	
1990 CENSUS POPULATION AND FUTURE PROJECTION							
1990 Census Data		Projection Scenarios			1995	2005	2015
- Population	30,537	(1) Base Projection			34,486	42,588	50,562
- Household	6,748	(2) High Projection			39,365	64,452	103,401
- Family Size	4.5	(3) Low Projection			34,201	40,795	45,988
WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	4,581	5,173	5,781	6,388	6,986	7,584
	(High)	4,581	5,905	7,786	9,668	12,589	15,510
	(Low)	4,581	5,130	5,625	6,119	6,509	6,898
< Industrial Water >							
Water Demand (m3/day)	(Base)	2,804	3,432	4,059	4,687	5,038	5,388
	(High)	2,804	4,226	5,647	7,069	7,592	8,115
	(Low)	2,804	3,120	3,436	3,752	4,023	4,294
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	7,385	8,605	9,840	11,075	12,024	12,972
	(High)	7,385	10,130	13,434	16,737	20,181	23,625
	(Low)	7,385	8,250	9,061	9,871	10,532	11,192
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	8,492	9,895	11,316	12,736	13,827	14,918
	(High)	8,492	11,650	15,449	19,247	23,208	27,169
	(Low)	8,492	9,488	10,420	11,352	12,111	12,871
< Water Supply Program >							
- Existing Capacity (m3/day)		3,234	3,234	3,234	3,234	3,234	3,234
- New Water Supply (m3/day)				7,692	7,692	7,692	7,692
- New Water Supply					2,588	2,588	2,588
- New Water Supply						1,452	1,452
- New Water Supply							1,050
- Total Water Supply (m3/day)		3,234	3,234	10,926	13,514	14,966	16,016



Appendix-1.2.2 Demand and Supply Plan for each Township

(1) Water Demand and Supply Plan (Chongwe)

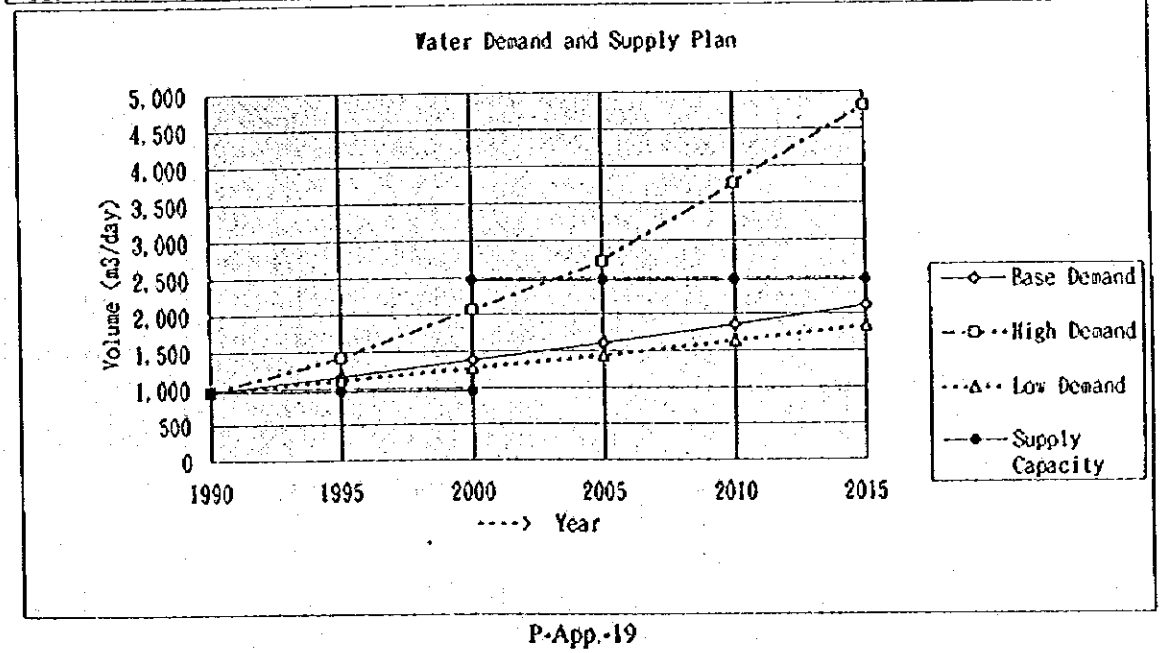
TOWNSHIP		DISTRICT		PROVINCE	
121	Chongwe	12	Lusaka-Rural	10	Lusaka

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	3,370	(1) Base Projection	4,047	5,649	7,569
- Household	780	(2) High Projection	4,911	10,234	20,820
- Family Size	4.3	(3) Low Projection	4,014	5,408	6,882

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Cangwe Water Supply	-Council	
Total		
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Congwe River
Groundwater Potential	Carbonate rocks with some shales (Kundelungu Limestone) Safe Yield=506m3/day, radius of influence=2070m, Borehole:L=60m,φ=30cm

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	506	607	727	847	991	1,135
	(High)	506	737	1,136	1,535	2,329	3,123
	(Low)	506	602	707	811	922	1,032
< Industrial Water >							
Water Demand (m3/day)	(Base)	331	404	476	549	628	706
	(High)	331	497	662	828	946	1,063
	(Low)	331	367	403	439	501	563
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	837	1,011	1,204	1,396	1,619	1,841
	(High)	837	1,233	1,798	2,363	3,275	4,186
	(Low)	837	969	1,110	1,250	1,423	1,595
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	962	1,162	1,384	1,606	1,862	2,118
	(High)	962	1,418	2,068	2,718	3,766	4,814
	(Low)	962	1,114	1,276	1,438	1,636	1,835
< Water Supply Program >							
- Existing Capacity (m3/day)		962	962	962	962	962	962
(1) Chongwe Dam				1,500	1,500	1,500	1,500
- Total Water Supply (m3/day)		962	962	2,462	2,462	2,462	2,462



(2) Water Demand and Supply Plan (Kafue)

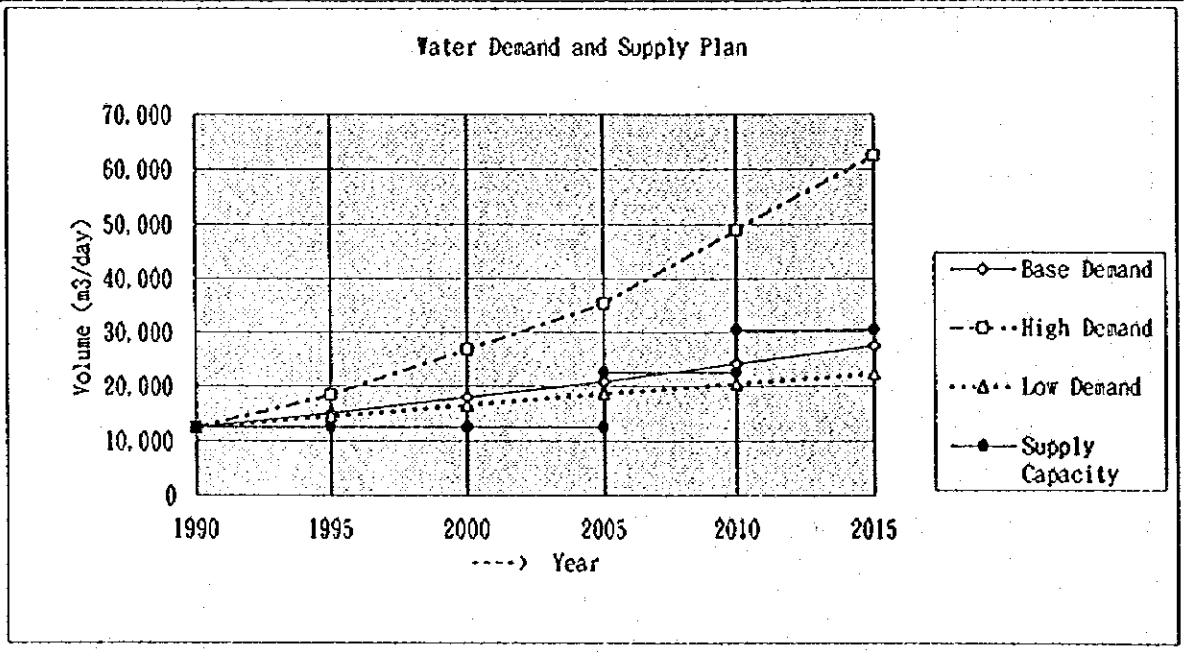
TOWNSHIP		DISTRICT		PROVINCE	
122	Kafue	12	Lusaka-Rural	10	Lusaka

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	43,801	(1) Base Projection	52,602	73,415	98,377
- Household	9,218	(2) High Projection	63,822	133,020	270,604
- Family Size	4.8	(3) Low Projection	52,172	70,287	80,445

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Kafue Water Supply	-Council	
Total		
Surface Water Source : Kafue River		unknown
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kafue River
Groundwater Potential	Alluvial sands and gravels (Alluvium) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	6,570	7,890	9,451	11,012	12,884	14,757
	(High)	6,570	9,573	14,763	19,953	30,272	40,591
	(Low)	6,570	7,826	9,184	10,543	11,305	12,067
< Industrial Water >							
Water Demand (m3/day)	(Base)	4,299	5,246	6,193	7,140	8,160	9,180
	(High)	4,299	6,456	8,613	10,770	12,298	13,826
	(Low)	4,299	4,771	5,243	5,715	6,516	7,317
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	10,869	13,136	15,644	18,152	21,044	23,937
	(High)	10,869	16,029	23,376	30,723	42,570	54,417
	(Low)	10,869	12,597	14,427	16,258	17,821	19,384
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	12,500	15,107	17,991	20,875	24,201	27,527
	(High)	12,500	18,434	26,883	35,331	48,955	62,579
	(Low)	12,500	14,486	16,592	18,697	20,494	22,291
< Water Supply Program >							
- Existing Capacity (m3/day)		12,500	12,500	12,500	12,500	12,500	12,500
(1) Kafue Pipe Line (Phase-1)					10,000	10,000	10,000
(2) Kafue Pipe Line (Phase-2)						8,000	8,000
- Total Water Supply (m3/day)		12,500	12,500	12,500	22,500	30,500	30,500



(3) Water Demand and Supply Plan (Chilanga)

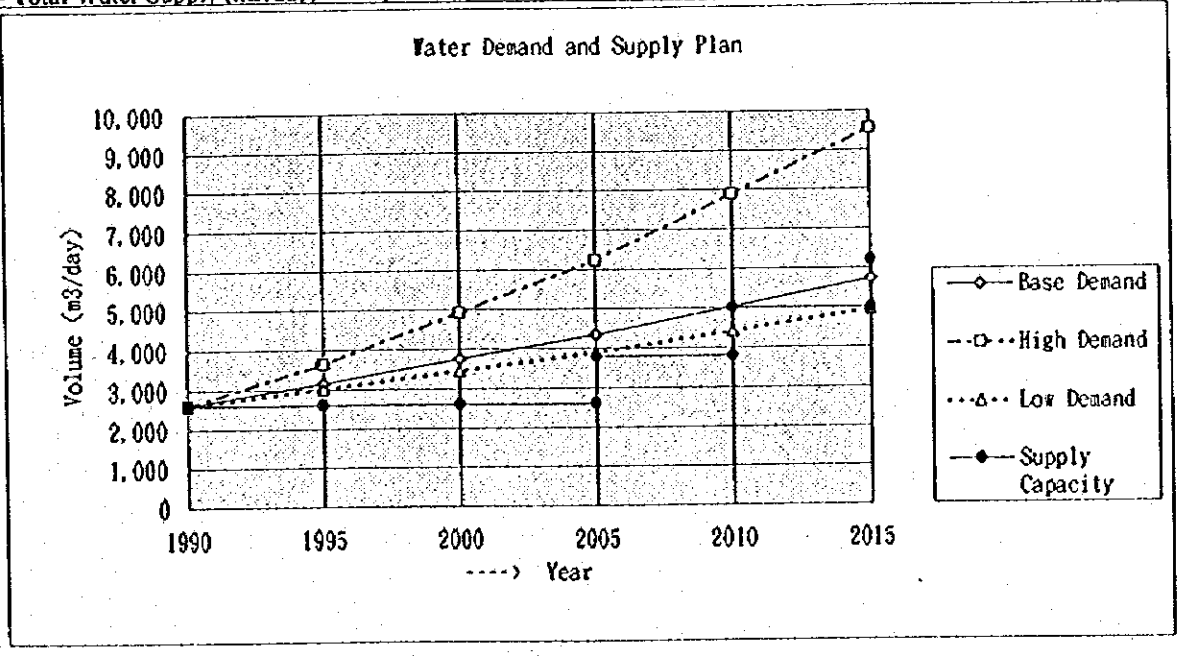
TOWNSHIP		DISTRICT		PROVINCE	
123	Chilanga	12	Lusaka-Rural	10	Lusaka

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	9,126	(1) Base Projection	10,960	15,297	20,496
- Household	1,763	(2) High Projection	12,134	21,155	36,204
- Family Size	5.2	(3) Low Projection	10,871	14,644	18,636

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Total		
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kafue River, Funswe River
Groundwater Potential	Cabonate rocks with some shales (Kundelungu Limestone) Safe Yield=506m3/day, radius of influence=2070m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	1,369	1,644	1,969	2,295	2,684	3,074
	(High)	1,369	1,820	2,497	3,173	4,302	5,431
	(Low)	1,369	1,631	1,914	2,197	2,496	2,795
< Industrial Water >							
Water Demand (m3/day)	(Base)	896	1,093	1,291	1,488	1,701	1,913
	(High)	896	1,345	1,795	2,244	2,563	2,881
	(Low)	896	994	1,093	1,191	1,358	1,525
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	2,265	2,737	3,260	3,783	4,385	4,987
	(High)	2,265	3,165	4,291	5,417	6,864	8,312
	(Low)	2,265	2,625	3,006	3,388	3,854	4,320
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	2,605	3,148	3,749	4,350	5,043	5,736
	(High)	2,605	3,640	4,935	6,230	7,894	9,558
	(Low)	2,605	3,019	3,457	3,896	4,432	4,968
< Water Supply Program >							
- Existing Capacity (m3/day)		2,605	2,605	2,605	2,605	2,605	2,605
(1) Kafue Pipe Line (Phase-1)					1,200	1,200	1,200
(2) Kafue Pipe Line (Phase-2)						1,200	1,200
(3) Kafue Pipe Line (Phase-3)							1,200
- Total Water Supply (m3/day)		2,605	2,605	2,605	3,805	5,005	6,205



(4) Water Demand and Supply Plan (Rufunsa)

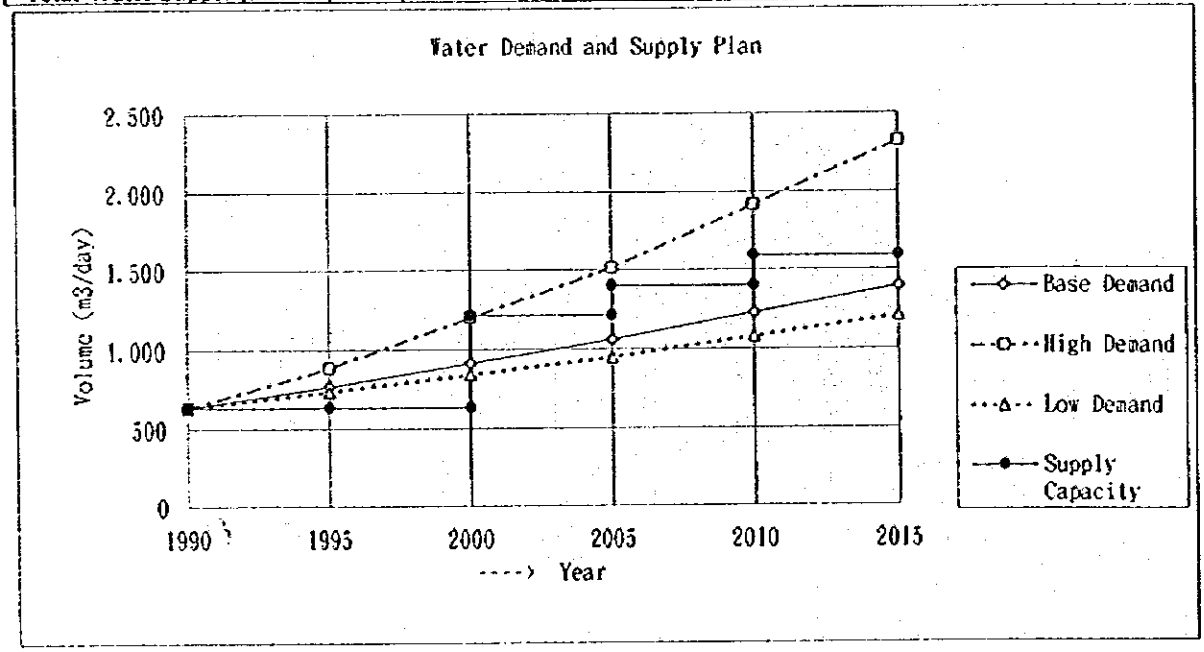
TOWNSHIP		DISTRICT		PROVINCE	
124	Rufunsa	12	Rusaka-Rural	10	Lusaka

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	2,217	(1) Base Projection	2,662	3,716	4,979
- Household	440	(2) High Projection	2,948	5,139	8,795
- Family Size	5.0	(3) Low Projection	2,641	3,558	4,527

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Total		
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Rufunsa River
Groundwater Potential	Sandstones, mudstones and siltstones (Karroo Sandstones) Safe Yield=192m3/day, radius of influence=1170m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap/day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	333	399	478	557	652	747
	(High)	333	442	607	771	1,045	1,319
	(Low)	333	396	465	534	606	679
< Industrial Water >							
Water Demand (m3/day)	(Base)	218	266	313	361	413	465
	(High)	218	327	436	545	623	700
	(Low)	218	242	265	289	330	371
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	551	665	792	918	1,065	1,212
	(High)	551	769	1,043	1,316	1,668	2,019
	(Low)	551	638	730	823	936	1,050
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	633	765	910	1,056	1,225	1,394
	(High)	633	885	1,199	1,513	1,918	2,322
	(Low)	633	733	840	946	1,077	1,208
< Water Supply Program >							
- Existing Capacity (m3/day)		633	633	633	633	633	633
(1) Boreholes (3 wells)				576	576	576	576
(2) Borehole (1 well)					192	192	192
(3) Borehole (1 well)						192	192
- Total Water Supply (m3/day)		633	633	1,209	1,401	1,593	1,593



(5) Water Demand and Supply Plan (Luangwa)

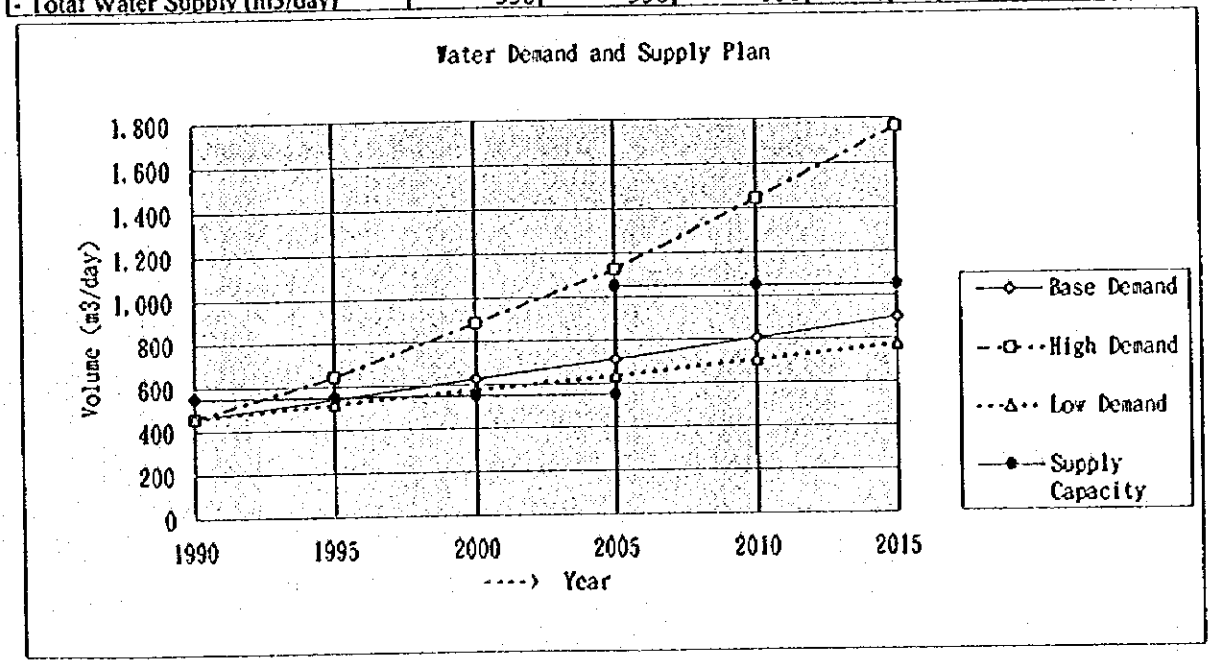
TOWNSHP		DISTRICT		PROVINCE	
131	Luangwa	13	Luangwa	10	Lusaka

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	1,606	(1) Base Projection	1,855	2,397	2,974
- Household	332	(2) High Projection	2,172	3,896	6,828
- Family Size	4.8	(3) Low Projection	1,840	2,297	2,705

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Luangwa Water Supply	-DWA	550
Total		
Surface Water Source :		550
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Luangwa River, Zambezi River
Groundwater Potential	Sandstones, mudstones and siltstones (Karroo Sandstones) Safe Yield=192m3/day, radius of influence=1170m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	241	278	319	360	403	446
	(High)	241	326	455	584	804	1,024
	(Low)	241	276	310	345	375	406
< Industrial Water >							
Water Demand (m3/day)	(Base)	158	193	227	262	300	337
	(High)	158	237	316	395	452	508
	(Low)	158	175	193	210	240	269
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	399	471	546	622	702	783
	(High)	399	563	771	979	1,256	1,532
	(Low)	399	451	503	555	615	675
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	459	542	628	715	808	901
	(High)	459	647	887	1,126	1,444	1,762
	(Low)	459	519	578	638	707	776
< Water Supply Program >							
- Existing Capacity (m3/day)		550	550	550	550	550	550
(1) Water Supply Extension					500	500	500
- Total Water Supply (m3/day)		550	550	550	1,050	1,050	1,050



(6) Water Demand and Supply Plan (Masaiti)

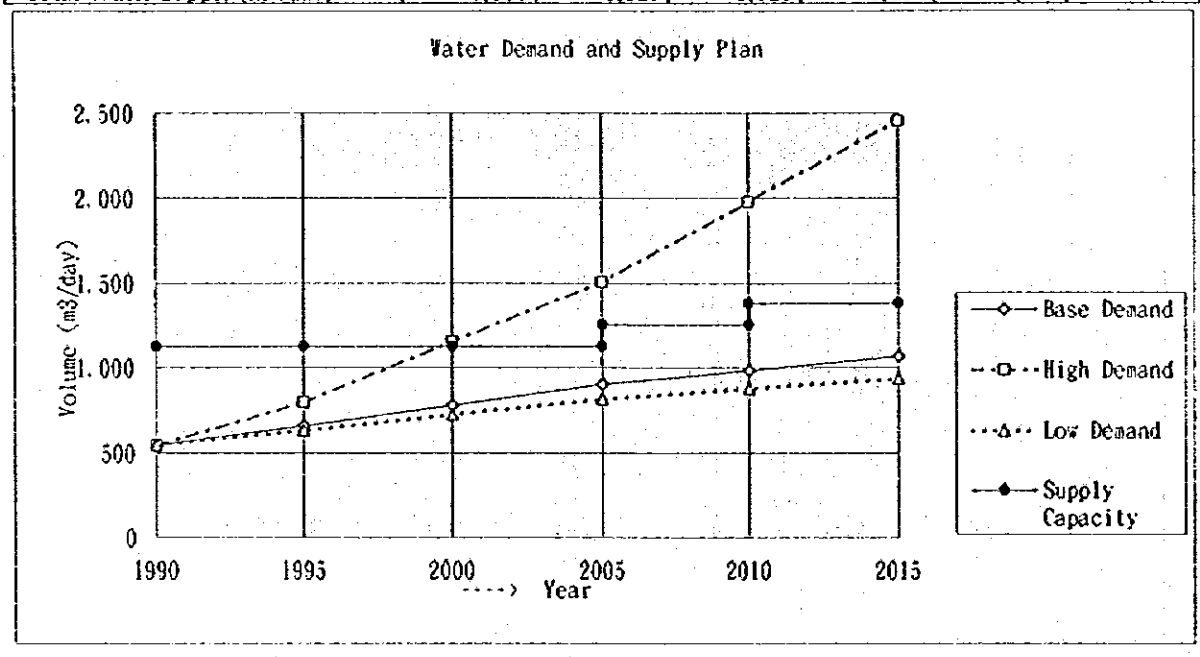
TOWNSHIP		DISTRICT		PROVINCE	
221	Masaiti	22	Ndola-Rural	20	Copperbelt

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	2,140	(1) Base Projection	2,537	3,451	4,509
- Household	488	(2) High Projection	3,041	6,032	11,690
- Family Size	4.4	(3) Low Projection	2,517	3,306	4,103

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Masaiti Water Supply	-DWA	1,125
Total		
Surface Water Source : Kafulafuta River		1,125
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kafulafuta River, Kafubu River
Groundwater Potential	Granitic gneiss, migmatites (Basement Gneiss) Safe Yield=42m3/day, radius of influence=810m, Borehole L=60m, φ=30cm

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	321	381	449	518	597	676
	(High)	321	456	680	905	1,329	1,754
	(Low)	321	378	437	496	556	615
< Industrial Water >							
Water Demand (m3/day)	(Base)	156	193	231	268	260	251
	(High)	156	239	321	404	391	378
	(Low)	156	176	195	215	208	200
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	477	574	680	786	857	927
	(High)	477	695	1,002	1,309	1,720	2,132
	(Low)	477	553	632	711	763	815
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	549	660	782	903	985	1,066
	(High)	549	799	1,152	1,505	1,978	2,451
	(Low)	549	636	727	818	878	938
< Water Supply Program >							
- Existing Capacity (m3/day)		1,125	1,125	1,125	1,125	1,125	1,125
(1) Boreholes (3wells)					126	126	126
(2) Boreholes (3wells)						126	126
- Total Water Supply (m3/day)		1,125	1,125	1,125	1,251	1,377	1,377



(7) Water Demand and Supply Plan (Mpongwe)

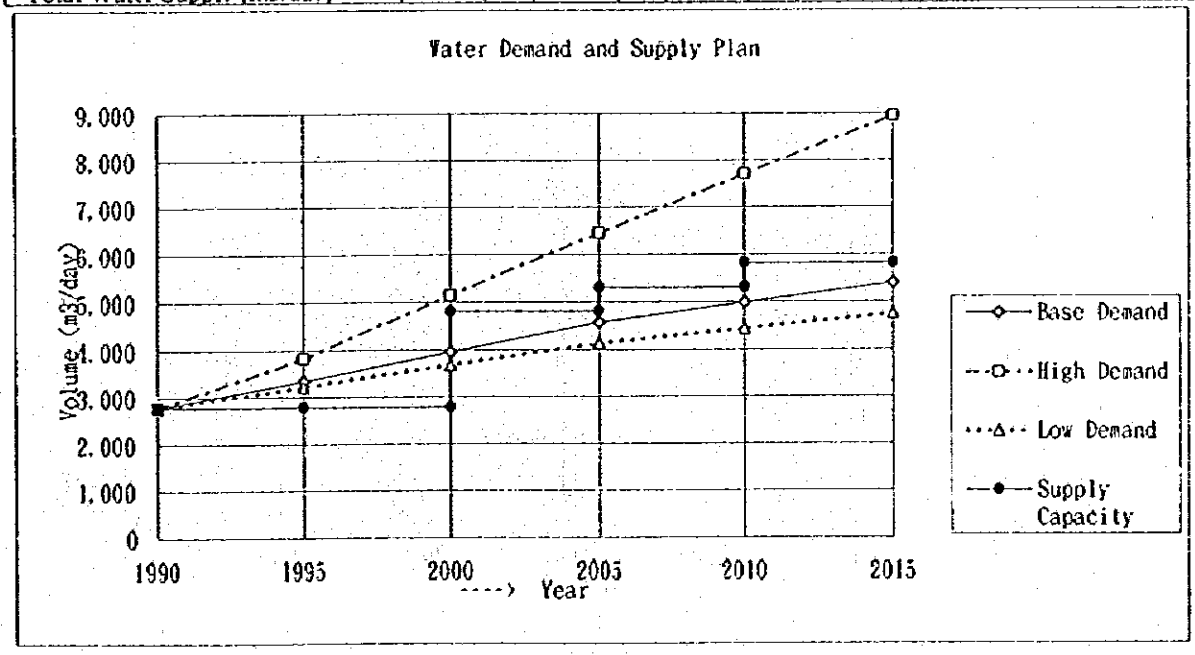
TOWNSHIP		DISTRICT		PROVINCE	
222	Mpongwe	22	Ndola-Rural	20	Copperbelt

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	10,837	(1) Base Projection	12,846	17,473	22,832
- Household	2,717	(2) High Projection	14,136	23,733	39,139
- Family Size	4.0	(3) Low Projection	12,748	16,745	20,773

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Total		
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Muchindushi River, Kafue River
Groundwater Potential	Dolomite, argillites (Upper Roan Dolomites) Safe Yield=506m3/day, radius of influence=2070m, Borehole:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	1,626	1,927	2,274	2,621	3,023	3,425
	(High)	1,626	2,120	2,840	3,560	4,715	5,871
	(Low)	1,626	1,912	2,212	2,512	2,814	3,116
< Industrial Water >							
Water Demand (m3/day)	(Base)	789	979	1,169	1,359	1,315	1,271
	(High)	789	1,209	1,630	2,050	1,982	1,914
	(Low)	789	889	988	1,088	1,051	1,013
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	2,415	2,906	3,443	3,980	4,338	4,696
	(High)	2,415	3,330	4,470	5,610	6,697	7,785
	(Low)	2,415	2,801	3,200	3,600	3,864	4,129
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	2,777	3,342	3,959	4,577	4,989	5,400
	(High)	2,777	3,829	5,140	6,451	7,702	8,953
	(Low)	2,777	3,221	3,680	4,140	4,444	4,748
< Water Supply Program >							
- Existing Capacity (m3/day)		2,777	2,777	2,777	2,777	2,777	2,777
(1) Boreholes (4 wells)				2,024	2,024	2,024	2,024
(2) Borehole (1 well)					506	506	506
(3) Borehole (1 well)						506	506
- Total Water Supply (m3/day)		2,777	2,777	4,801	5,307	5,813	5,813



(8) Water Demand and Supply Plan (Konkola)

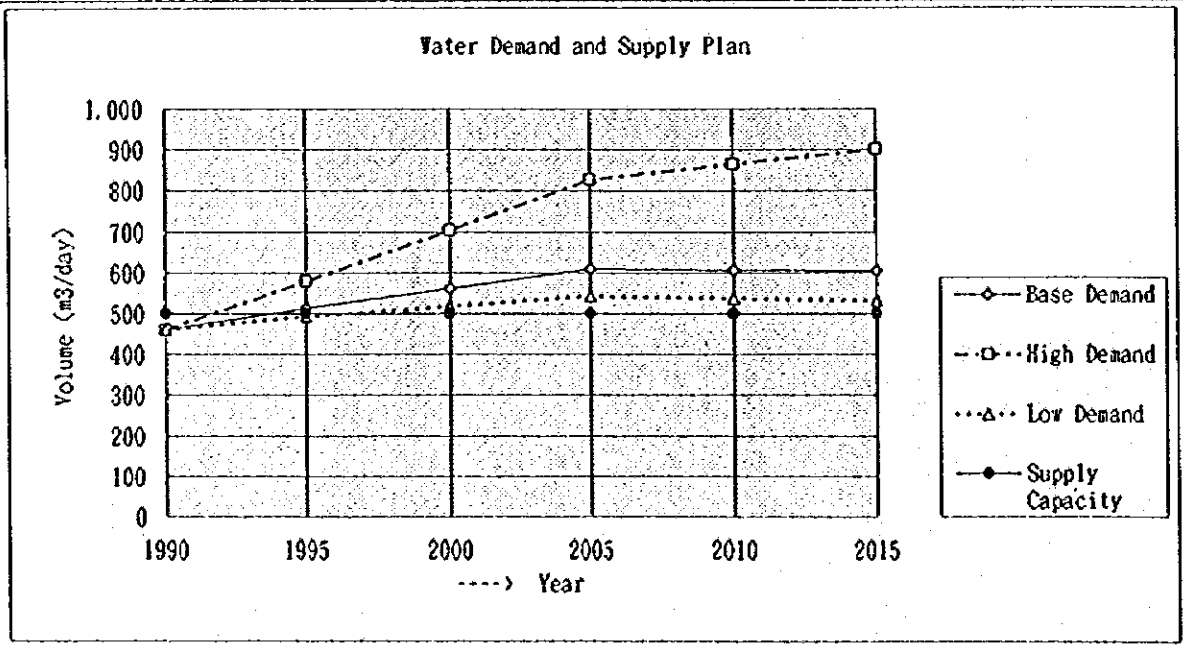
TOWNSHIP		DISTRICT		PROVINCE	
232	Konkola	23	Chililabombwe	20	Copperbelt

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	1,795	(1) Base Projection	1,892	2,035	2,101
- Household	560	(2) High Projection	2,029	2,542	3,108
- Family Size	3.2	(3) Low Projection	1,877	1,950	1,966

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Konkola Township Water Supply	-ZCCM	(10000)
Total		
Surface Water Source : Mingomba Stream		(10000)
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kafue River
Groundwater Potential	Carbonate rocks with some shales (Kundelungu Limestone) Safe Yield=506m3/day, radius of influence=2070m, Borehole:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	269	284	295	305	310	315
	(High)	269	304	343	381	424	466
	(Low)	269	282	287	293	294	295
< Industrial Water >							
Water Demand (m3/day)	(Base)	131	162	194	225	218	211
	(High)	131	200	270	339	329	318
	(Low)	131	147	164	180	174	168
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	400	446	488	530	528	526
	(High)	400	505	612	720	752	784
	(Low)	400	429	451	473	468	463
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	460	513	561	610	607	605
	(High)	460	580	704	828	865	902
	(Low)	460	493	518	543	538	532
< Water Supply Program >							
- Existing Capacity (m3/day)		500	500	500	500	500	500
- Total Water Supply (m3/day)		500	500	500	500	500	500



(9) Water Demand and Supply Plan (Chambishi)

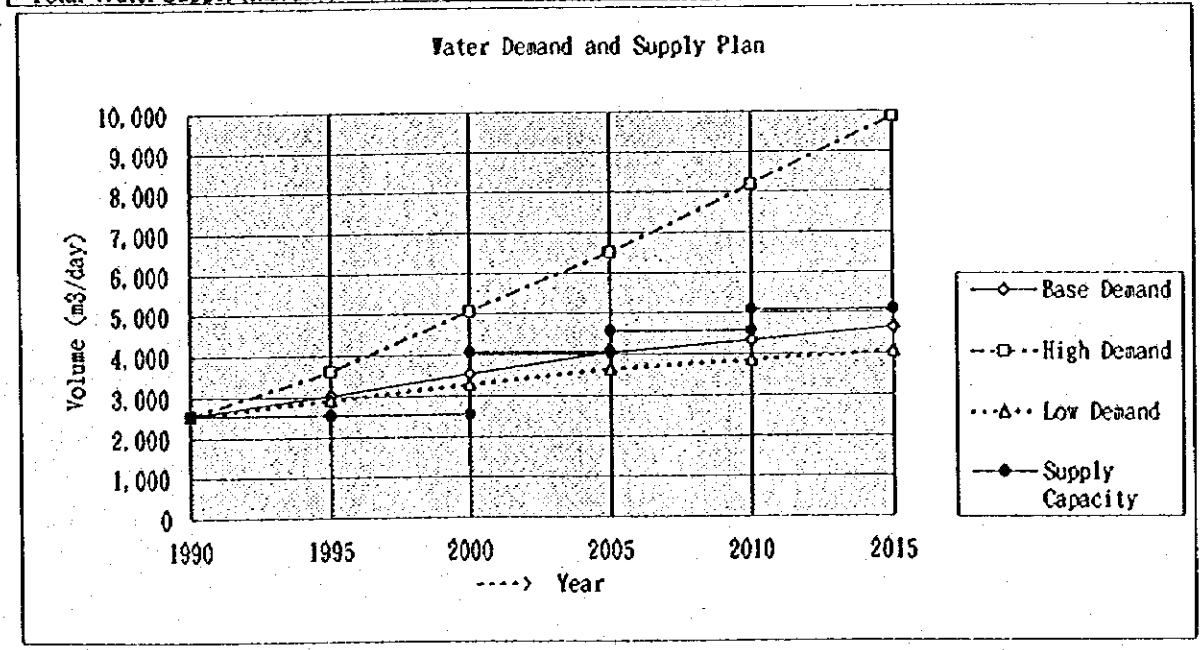
TOWNSHIP		DISTRICT		PROVINCE	
262	Chambishi	26	Kalulushi	20	Copperbelt

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	9,945	(1) Base Projection	11,574	15,173	19,103
- Household	1,744	(2) High Projection	13,639	25,196	45,419
- Family Size	5.7	(3) Low Projection	11,479	14,537	17,376

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Total		
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Mwambashi River, Kafue River
Groundwater Potential	Carbonate rocks with some shales (Kundelungu Limestone) Safe Yield=506m, radius of influence=2070m, Borehole:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	1,492	1,736	2,006	2,276	2,571	2,865
	(High)	1,492	2,046	2,913	3,779	5,296	6,813
	(Low)	1,492	1,722	1,951	2,181	2,393	2,606
< Industrial Water >							
Water Demand (m3/day)	(Base)	724	898	1,073	1,247	1,207	1,167
	(High)	724	1,110	1,495	1,881	1,820	1,758
	(Low)	724	815	907	998	964	930
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	2,216	2,634	3,079	3,523	3,778	4,032
	(High)	2,216	3,156	4,408	5,660	7,116	8,571
	(Low)	2,216	2,537	2,858	3,179	3,357	3,536
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	2,548	3,030	3,540	4,051	4,344	4,637
	(High)	2,548	3,629	5,069	6,509	8,183	9,856
	(Low)	2,548	2,918	3,287	3,655	3,861	4,067
< Water Supply Program >							
- Existing Capacity (m3/s)		2,548	2,548	2,548	2,548	2,548	2,548
(1) Boreholes (3 wells)				1,518	1,518	1,518	1,518
(2) Borehole (1 well)					506	506	506
(2) Borehole (1 well)						506	506
- Total Water Supply (m3/day)		2,548	2,548	4,066	4,572	5,078	5,078



(10) Water Demand and Supply Plan (Chibombo)

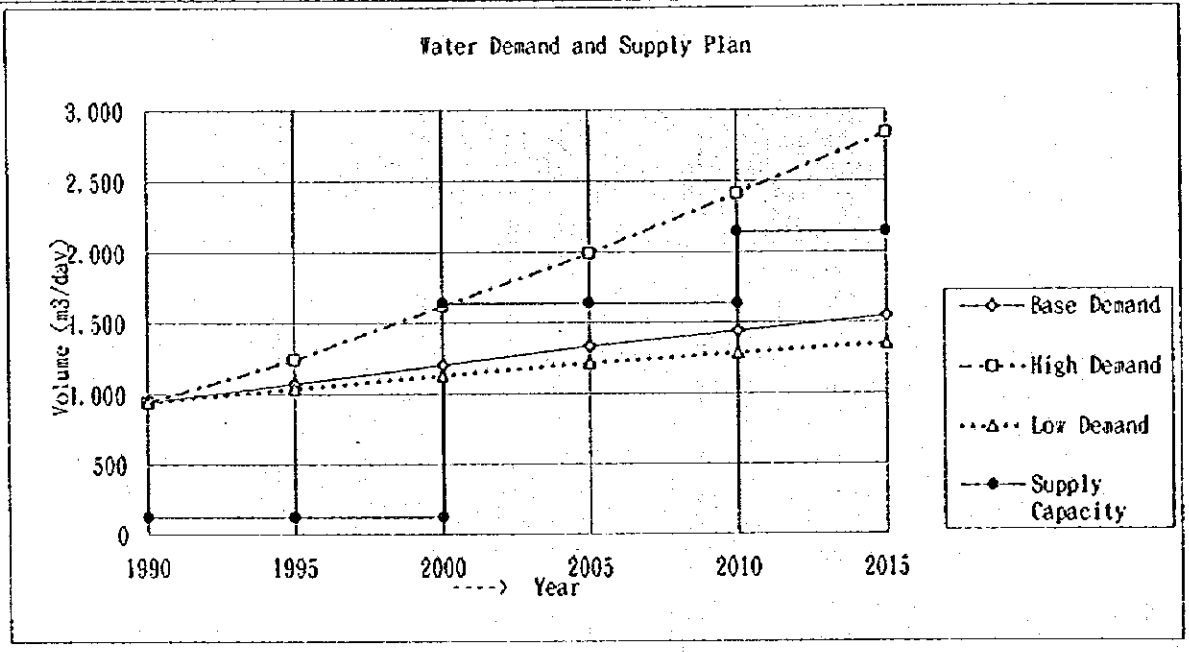
TOWNSHIP		DISTRICT		PROVINCE	
321	Chibombo	32	Kabwe-Rural	30	Central

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	4,058	(1) Base Projection	4,540	5,496	6,391
- Household	744	(2) High Projection	5,150	8,151	12,586
- Family Size	5.5	(3) Low Projection	4,502	5,267	5,818

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Chibombo new & old, Boma and Chisamba's areas Water Supply	-Council	120
Total		
Surface Water Source :		0
Groundwater Source : Boreholes		120

WATER RESOURCES POTENTIAL	
Surface Water Potential	
Groundwater Potential	Carbonate rocks with some shales (Kundelungu Limestone) Safe Yield=506m3/day, radius of influence=2070m, Boreholes:L=60m,ø=30cm

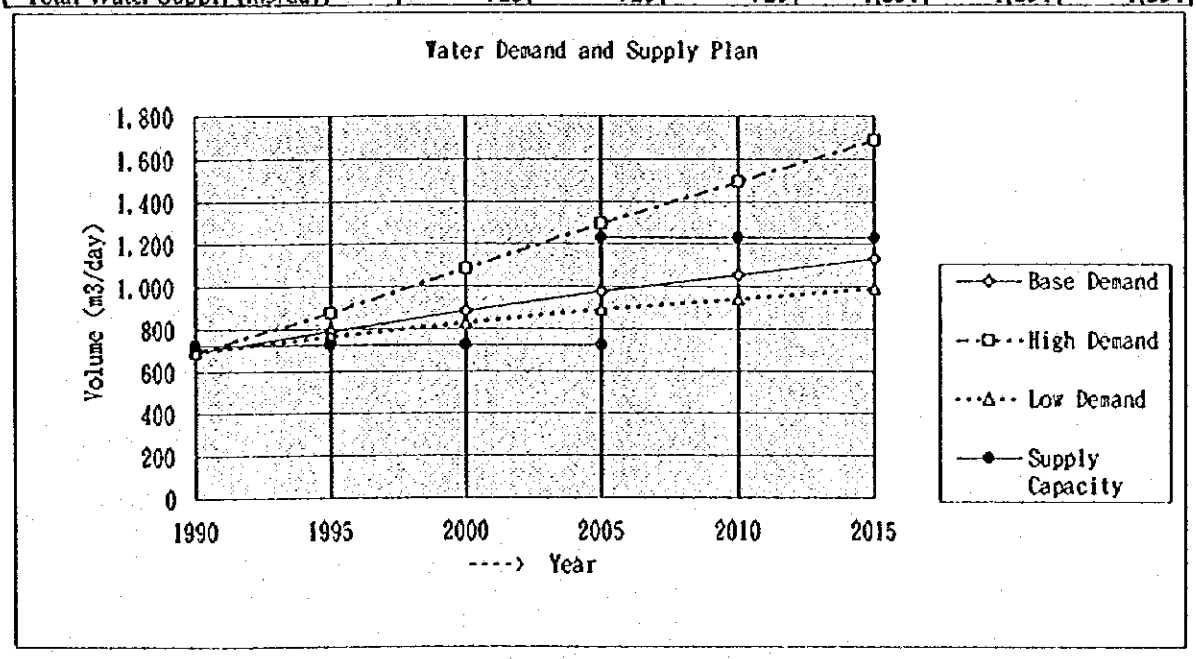
WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	609	681	753	824	892	959
	(High)	609	773	998	1,223	1,555	1,888
	(Low)	609	675	733	790	831	873
< Industrial Water >							
Water Demand (m3/day)	(Base)	212	254	295	337	361	384
	(High)	212	311	409	508	543	578
	(Low)	212	231	251	270	288	306
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	821	935	1,048	1,161	1,252	1,343
	(High)	821	1,083	1,407	1,731	2,098	2,466
	(Low)	821	907	983	1,060	1,119	1,179
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	944	1,075	1,205	1,336	1,440	1,544
	(High)	944	1,246	1,618	1,990	2,413	2,836
	(Low)	944	1,043	1,131	1,219	1,287	1,356
< Water Supply Program >							
- Existing Capacity (m3/day)		120	120	120	120	120	120
(1) Borehples (3wells)				1,518	1,518	1,518	1,518
(2) Borehple (1 well)						506	506
- Total Water Supply (m3/day)		120	120	1,638	1,638	2,144	2,144



(11) Water Demand and Supply Plan (Chisamba)

TOWNSHIP		DISTRICT		PROVINCE		
322	Chisamba	32	Kabwe-Rural	30	Central	
1990 CENSUS POPULATION AND FUTURE PROJECTION						
1990 Census Data		Projection Scenarios		1995	2005	2015
- Population	2,972	(1) Base Projection		3,325	4,025	4,681
- Household	720	(2) High Projection		3,557	5,030	6,979
- Family Size	4.1	(3) Low Projection		3,297	3,857	4,261
CURRENT DOMESTIC WATER SUPPLY PROJECT						
Name of Water Supply Project		Type of Managing Body		Water Supply Volume (m3/day)		
-Chisamba Water Supply		-DWA		(3416)		
Total						
Surface Water Source :				0		
Groundwater Source : Borehole (1 production well)				(3416)		
WATER RESOURCES POTENTIAL						
Surface Water Potential	Chongwe river, Mwomboshi River					
Groundwater Potential	Carbonate rocks with some shales (Kundelungu Limestone) Safe Yield =506m3/day, radius of influence=2070m, Borehole:L=60m,ø=30cm					

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	446	499	551	604	653	702
	(High)	446	534	644	755	901	1,047
	(Low)	446	495	537	579	609	639
< Industrial Water >							
Water Demand (m3/day)	(Base)	155	186	216	247	264	281
	(High)	155	228	300	373	398	423
	(Low)	155	169	184	198	211	224
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	601	684	768	851	917	983
	(High)	601	761	944	1,128	1,299	1,470
	(Low)	601	664	720	777	820	863
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	691	787	883	978	1,054	1,131
	(High)	691	875	1,086	1,297	1,493	1,690
	(Low)	691	763	828	893	943	993
< Water Supply Program >							
- Existing Capacity (m3/day)		725	725	725	725	725	725
(1) Borehole (1 well)					506	506	506
- Total Water Supply (m3/day)		725	725	725	1,231	1,231	1,231



(12) Water Demand and Supply Plan (Kapiri Mposhi)

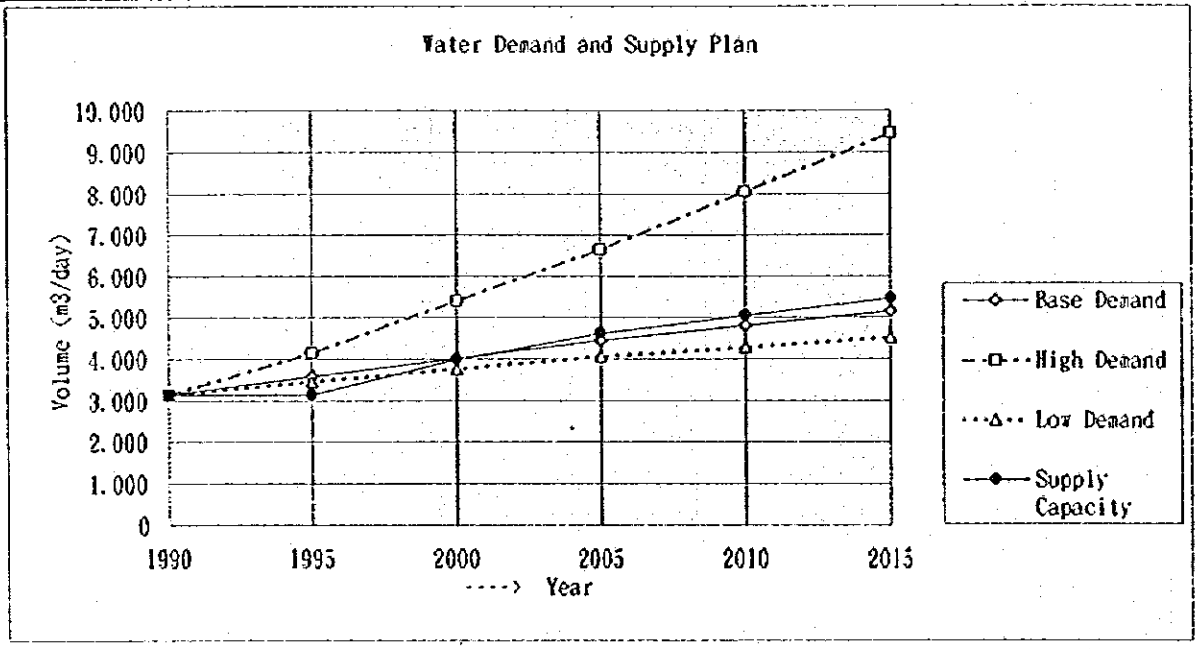
TOWNSHIP		DISTRICT		PROVINCE	
323	Kapiri Mposhi	32	Kabwe-Rural	30	Central

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	13,540	(1) Base Projection	15,148	18,339	21,325
- Household	2,810	(2) High Projection	17,183	27,199	41,997
- Family Size	4.8	(3) Low Projection	15,022	17,572	19,410

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Kapiri Mposhi Town Watear Supply	-Council	unknown
Total		
Surface Water Source :		unknown
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Lunchu River, Lukanga River, Mulungushi River
Groundwater Potential	Granitic gneiss, migmatites, shists (Basement Gneiss) Safe Yield=42m3/day, radius of influence=810m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	2,031	2,272	2,512	2,751	2,975	3,199
	(High)	2,031	2,577	3,329	4,080	5,190	6,300
	(Low)	2,031	2,253	2,445	2,636	2,774	2,912
< Industrial Water >							
Water Demand (m3/day)	(Base)	707	846	986	1,125	1,204	1,282
	(High)	707	1,037	1,367	1,697	1,814	1,931
	(Low)	707	771	836	900	961	1,022
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	2,738	3,119	3,497	3,876	4,178	4,481
	(High)	2,738	3,614	4,696	5,777	7,004	8,231
	(Low)	2,738	3,025	3,280	3,536	3,735	3,934
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	3,149	3,586	4,022	4,457	4,805	5,153
	(High)	3,149	4,157	5,400	6,643	8,054	9,465
	(Low)	3,149	3,478	3,772	4,066	4,295	4,524
< Water Supply Program >							
- Existing Capacity (m3/day)		3,149	3,149	3,149	3,149	3,149	3,149
(1) Boreholes (20 wells)				840	840	840	840
(2) Boreholes (15 wells)					630	630	630
(3) Boreholes (10 wells)						420	420
(4) Boreholes (10 wells)							420
- Total Water Supply (m3/day)		3,149	3,149	3,989	4,619	5,039	5,459



(13) Water Demand and Supply Plan (Mumbwa)

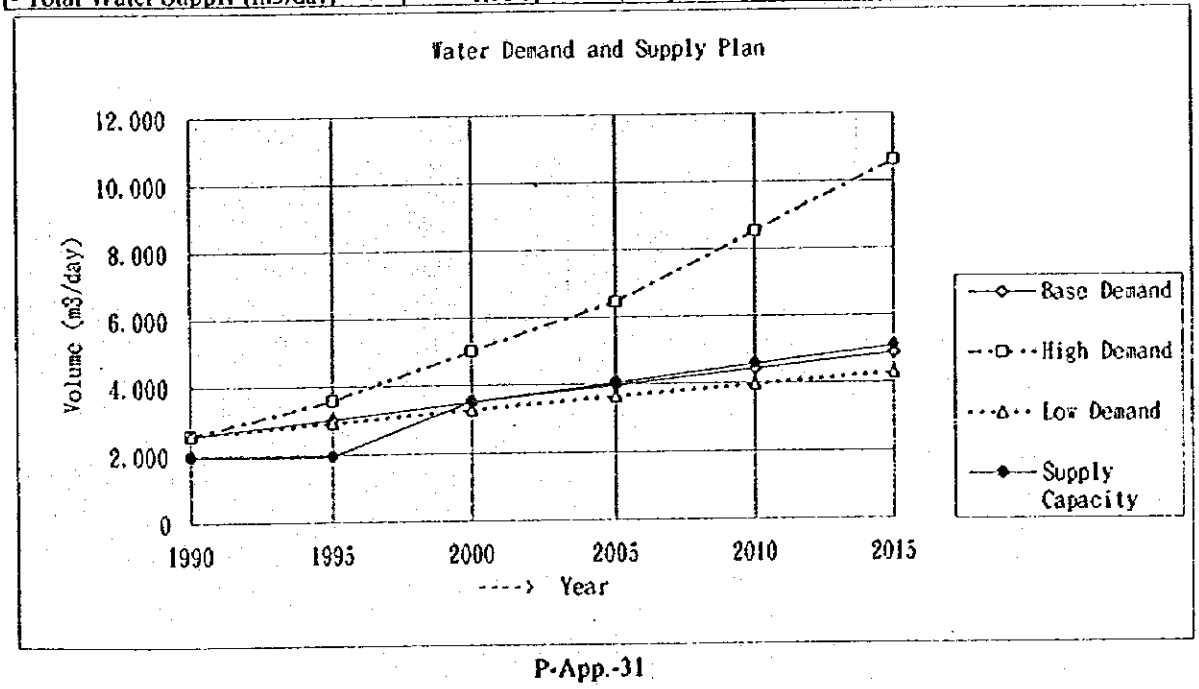
TOWNSHIP		DISTRICT		PROVINCE	
331	Mumbwa	33	Mumbwa	30	Central

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	11,015	(1) Base Projection	12,838	16,872	21,304
- Household	2,341	(2) High Projection	15,148	28,143	51,021
- Family Size	4.7	(3) Low Projection	12,733	16,164	19,377

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Mumbwa Water Supply	-DWA	1,934
Surface Water Source : Chibila Tributary, (Kafue River)		1,704
Groundwater Source : Boreholes (5 production wells)		230

WATER RESOURCES POTENTIAL	
Surface Water Potential	
Groundwater Potential	Shales, siltstones, sandstones (Undifferentiated Kundelungu) Safe Yield=35m3/day, radius of influence=750m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	1,652	1,926	2,228	2,531	2,863	3,196
	(High)	1,652	2,272	3,247	4,221	5,937	7,653
	(Low)	1,652	1,910	2,167	2,425	2,666	2,907
< Industrial Water >							
Water Demand (m3/day)	(Base)	575	688	802	915	979	1,043
	(High)	575	843	1,112	1,380	1,476	1,571
	(Low)	575	627	680	732	782	831
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	2,227	2,614	3,030	3,446	3,842	4,239
	(High)	2,227	3,116	4,358	5,601	7,413	9,224
	(Low)	2,227	2,537	2,847	3,157	3,447	3,738
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	2,561	3,006	3,484	3,963	4,419	4,874
	(High)	2,561	3,583	5,012	6,442	8,525	10,608
	(Low)	2,561	2,918	3,274	3,630	3,964	4,298
< Water Supply Program >							
- Existing Capacity (m3/day)		1,934	1,934	1,934	1,934	1,934	1,934
(1) Boreholes (45 wells)				1,575	1,575	1,575	1,575
(2) Boreholes (15 wells)					525	525	525
(3) Boreholes (15 wells)						525	525
(4) Boreholes (15 wells)							525
- Total Water Supply (m3/day)		1,934	1,934	3,509	4,034	4,559	5,084



(14) Water Demand and Supply Plan (Nampundwe)

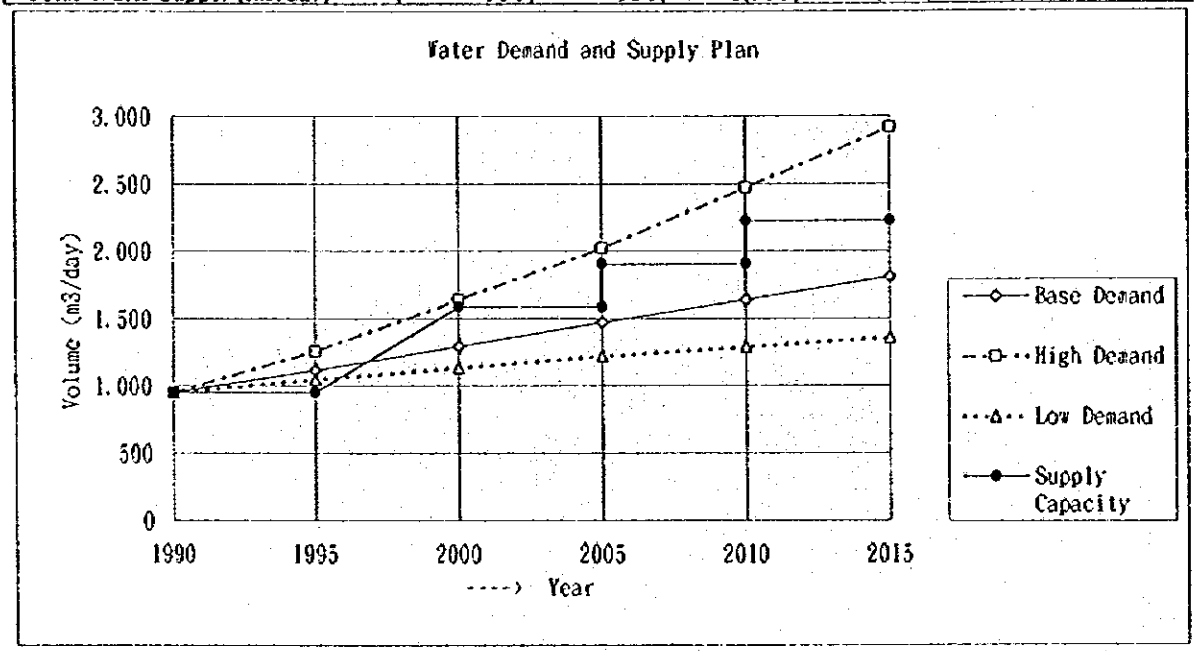
TOWNSHIP		DISTRICT		PROVINCE	
332	Nampundwe	33	Mumbwa	30	Central

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	4,088	(1) Base Projection	4,765	6,261	7,907
- Household	756	(2) High Projection	5,201	8,307	13,021
- Family Size	5.4	(3) Low Projection	4,502	5,267	5,818

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Kampundwe Water Supply	-ZCCM	unknown
Surface Water Source :		0
Groundwater Source : ZCCM's Mining Groundwater		unknown

WATER RESOURCES POTENTIAL	
Surface Water Potential	
Groundwater Potential	Granite Safe Yield=106m3/day, radius of influence=1010m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	613	715	827	939	1,063	1,186
	(High)	613	780	1,013	1,246	1,600	1,953
	(Low)	613	675	733	790	831	873
< Industrial Water >							
Water Demand (m3/day)	(Base)	213	255	298	340	364	387
	(High)	213	313	413	513	548	583
	(Low)	213	233	252	272	290	308
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	826	970	1,125	1,279	1,426	1,573
	(High)	826	1,093	1,426	1,759	2,148	2,536
	(Low)	826	908	985	1,062	1,121	1,181
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	950	1,116	1,293	1,471	1,640	1,809
	(High)	950	1,257	1,640	2,023	2,470	2,917
	(Low)	950	1,044	1,133	1,221	1,290	1,358
< Water Supply Program >							
- Existing Capacity (m3/day)		950	950	950	950	950	950
(1) Boreholes (6 wells)				636	636	636	636
(2) Boreholes (3 wells)					318	318	318
(3) Boreholes (3 wells)						318	318
- Total Water Supply (m3/day)		950	950	1,586	1,904	2,222	2,222



(15) Water Demand and Supply Plan (Mkushi)

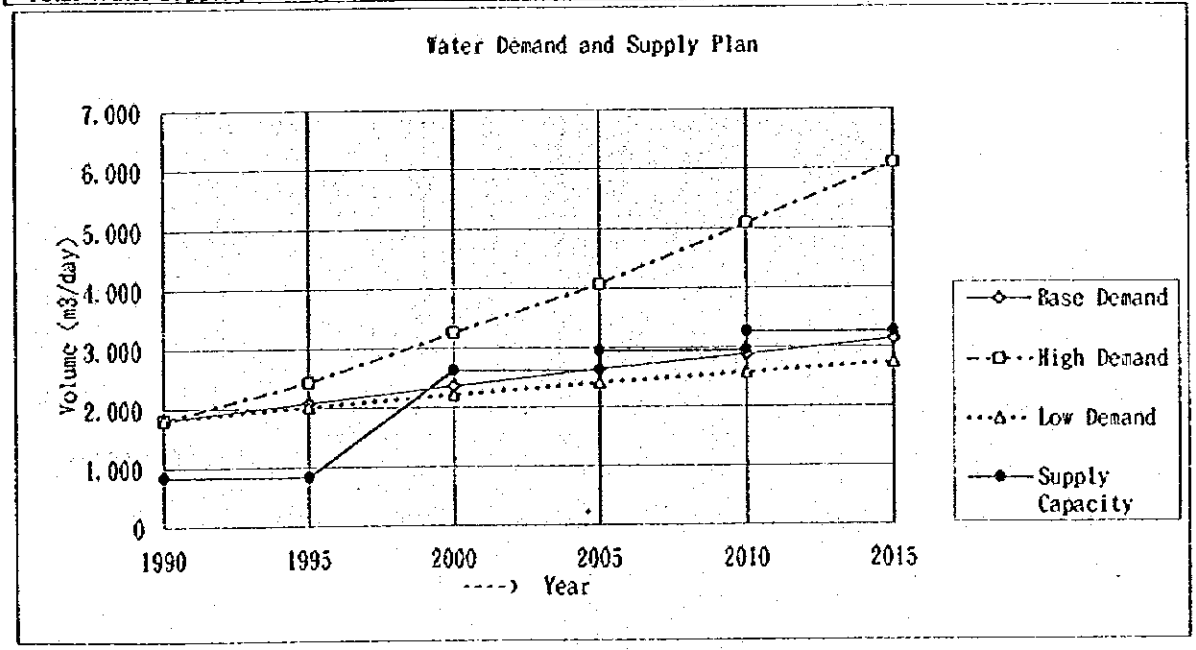
TOWNSHIP		DISTRICT		PROVINCE	
341	Mkushi	34	Mkushi	30	Central

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	7,804	(1) Base Projection	8,860	11,046	13,229
- Household	1,662	(2) High Projection	10,190	17,079	27,925
- Family Size	4.7	(3) Low Projection	8,787	10,580	12,027

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Mukushi Water Supply	-DWA	828
Surface Water Source : Chibwefe Tributary		828
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Lunsemfwa River
Groundwater Potential	Shales, mudstones and quartzites (Muva Sediments) Safe Yield=106m3/day, radius of influence=1230m, Borehole:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	1,171	1,329	1,493	1,657	1,821	1,984
	(High)	1,171	1,529	2,045	2,562	3,375	4,189
	(Low)	1,171	1,318	1,453	1,587	1,696	1,804
< Industrial Water >							
Water Demand (m3/day)	(Base)	407	488	568	649	694	739
	(High)	407	598	788	979	1,046	1,113
	(Low)	407	444	482	519	554	589
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	1,578	1,817	2,061	2,306	2,515	2,723
	(High)	1,578	2,126	2,834	3,541	4,421	5,302
	(Low)	1,578	1,762	1,934	2,106	2,250	2,393
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	1,814	2,089	2,370	2,652	2,892	3,132
	(High)	1,814	2,445	3,259	4,072	5,084	6,097
	(Low)	1,814	2,027	2,224	2,422	2,587	2,752
< Water Supply Program >							
- Existing Capacity (m3/day)		828	828	828	828	828	828
(1) Boreholes (17 wells)				1,802	1,802	1,802	1,802
(2) Boreholes (3 wells)					318	318	318
(3) Boreholes (3 wells)						318	318
- Total Water Supply (m3/day)		828	828	2,630	2,948	3,266	3,266



(16) Water Demand and Supply Plan (Serenje)

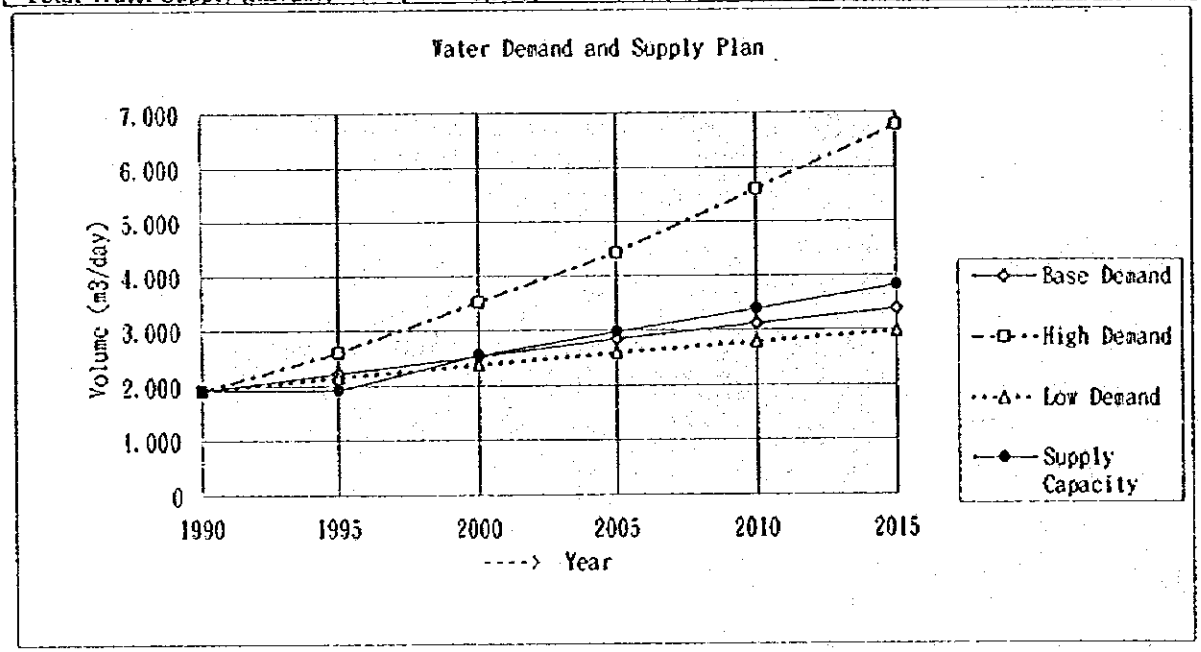
TOWNSHIP		DISTRICT		PROVINCE	
351	Serenje	35	Serenje	30	Central

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	8,265	(1) Base Projection	9,438	11,917	14,443
- Household	1,751	(2) High Projection	10,926	18,751	31,427
- Family Size	4.7	(3) Low Projection	9,365	11,416	13,143

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Serenje Water Supply	-DWA	unknown
Surface Water Source :		unknown
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Lukusashi River, Munte River
Groundwater Potential	Granitic gneiss, migmatites, schists (Basement Gneiss) Safe Yield=42m3/day, radius of influence=810m, Borehole:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	1,240	1,416	1,602	1,788	1,977	2,166
	(High)	1,240	1,639	2,226	2,813	3,763	4,714
	(Low)	1,240	1,405	1,559	1,712	1,842	1,971
< Industrial Water >							
Water Demand (m3/day)	(Base)	431	516	602	687	735	783
	(High)	431	633	834	1,036	1,108	1,179
	(Low)	431	471	510	550	587	624
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	1,671	1,932	2,203	2,475	2,712	2,949
	(High)	1,671	2,272	3,060	3,849	4,871	5,893
	(Low)	1,671	1,875	2,069	2,262	2,429	2,595
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	1,921	2,222	2,534	2,846	3,119	3,392
	(High)	1,921	2,612	3,519	4,426	5,601	6,777
	(Low)	1,921	2,157	2,379	2,602	2,793	2,985
< Water Supply Program >							
- Existing Capacity (m3/day)		1,921	1,921	1,921	1,921	1,921	1,921
(1) Boreholes (15 wells)				630	630	630	630
(2) Boreholes (10 wells)					420	420	420
(3) Boreholes (10 wells)						420	420
(4) Boreholes (10 wells)							420
- Total Water Supply (m3/day)		1,921	1,921	2,551	2,971	3,391	3,811



(17) Water Demand and Supply Plan (Solwezi)

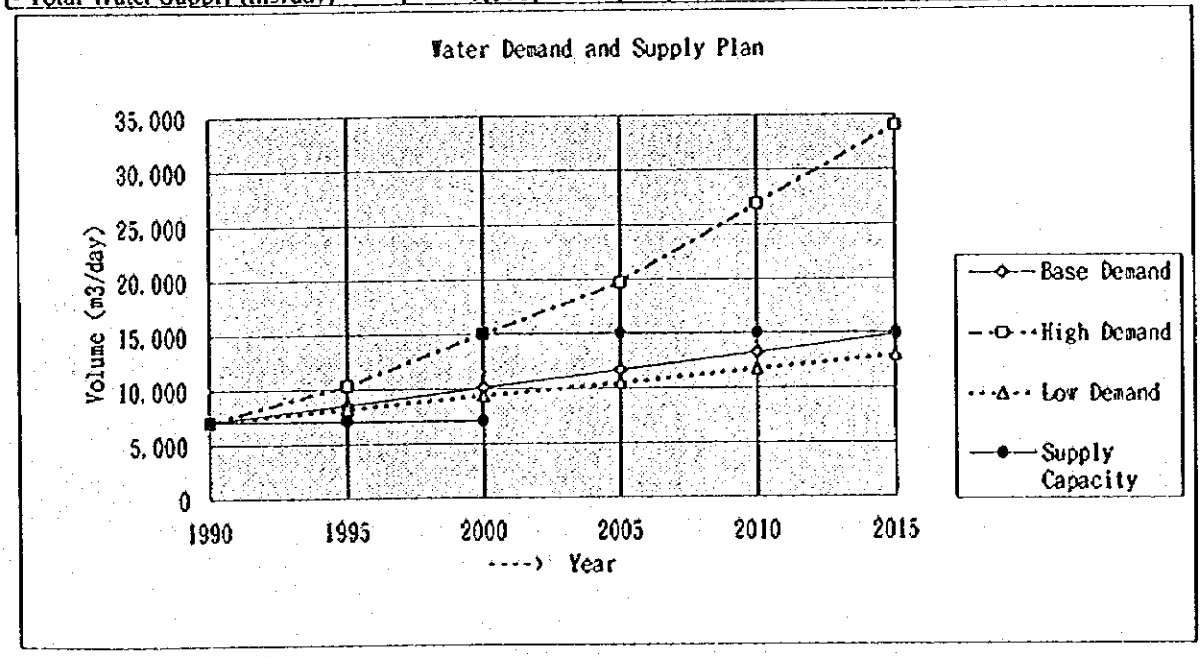
TOWNSHIP		DISTRICT		PROVINCE	
411	Solwezi	41	Solwezi	40	Northwestern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	26,223	(1) Base Projection	31,310	43,195	57,209
- Household	5,579	(2) High Projection	37,787	77,015	153,207
- Family Size	4.7	(3) Low Projection	31,053	41,372	52,034

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Solwezi Water Supply	-Council	
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Lunga River, Mutanda River
Groundwater Potential	Carbonate rocks with some shales (Kundelungu Limestone) Safe Yield=506m3/day, radius of influence=2070m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	3,933	4,697	5,588	6,479	7,530	8,581
	(High)	3,933	5,668	8,610	11,552	17,267	22,981
	(Low)	3,933	4,658	5,432	6,206	7,005	7,805
< Industrial Water >							
Water Demand (m3/day)	(Base)	2,221	2,720	3,218	3,717	4,055	4,393
	(High)	2,221	3,350	4,478	5,607	6,112	6,616
	(Low)	2,221	2,472	2,724	2,975	3,238	3,501
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	6,154	7,416	8,806	10,196	11,585	12,974
	(High)	6,154	9,018	13,088	17,159	23,378	29,597
	(Low)	6,154	7,130	8,156	9,181	10,243	11,306
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	7,078	8,529	10,127	11,726	13,323	14,921
	(High)	7,078	10,370	15,052	19,733	26,885	34,037
	(Low)	7,078	8,200	9,379	10,558	11,780	13,002
< Water Supply Program >							
- Existing Capacity (m3/day)		7,078	7,078	7,078	7,078	7,078	7,078
(1) Water Supply Extension				8,000	8,000	8,000	8,000
- Total Water Supply (m3/day)		7,078	7,078	15,078	15,078	15,078	15,078



(18) Water Demand and Supply Plan (Mwinilunga)

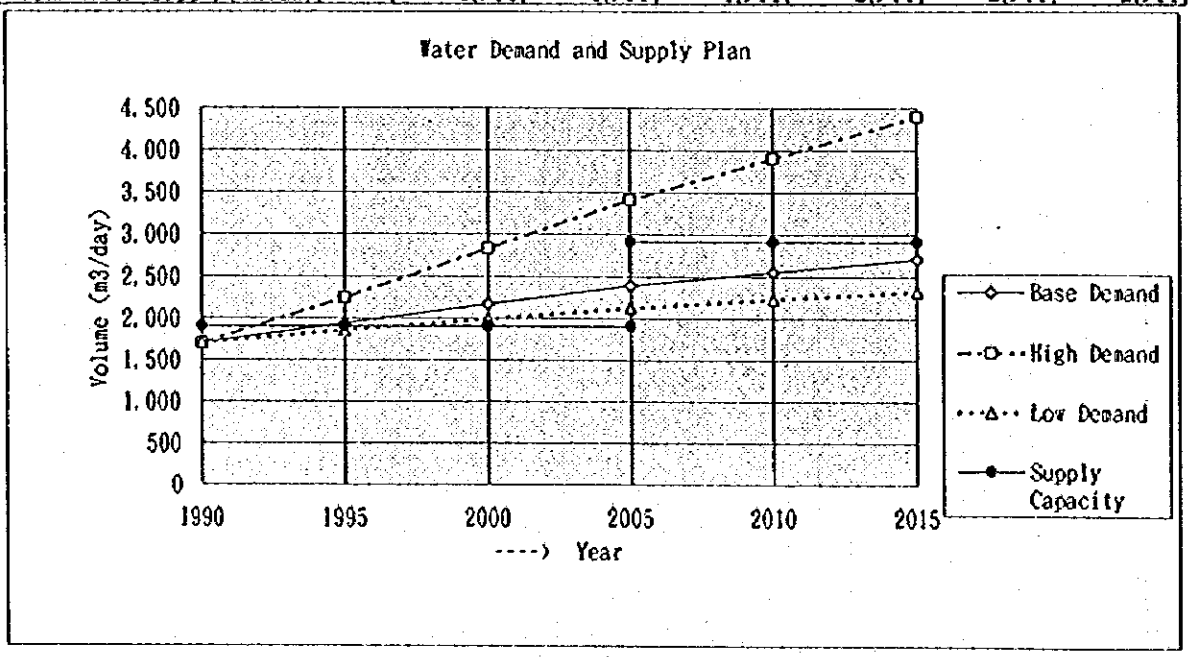
TOWNSHIP		DISTRICT		PROVINCE	
421	Mwinilunga	42	Mwinilunga	40	Northwestern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	6,342	(1) Base Projection	6,893	7,877	8,647
- Household	1,404	(2) High Projection	7,605	10,748	14,829
- Family Size	4.5	(3) Low Projection	6,836	7,548	7,870

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Muinilunga Water Supply	-DWA	1,911
Surface Water Source : West Lunga River		1,911
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	West Lunga River
Groundwater Potential	Shales, siltstones, sandstones (Undifferentiated Kundelungu) Safe Yield=35m3/day, radius of influence=750m, Borehole:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	951	1,034	1,108	1,182	1,239	1,297
	(High)	951	1,141	1,376	1,612	1,918	2,224
	(Low)	951	1,025	1,079	1,132	1,156	1,181
< Industrial Water >							
Water Demand (m3/day)	(Base)	537	658	778	899	981	1,062
	(High)	537	810	1,083	1,356	1,478	1,599
	(Low)	537	598	659	720	783	846
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	1,488	1,692	1,886	2,081	2,220	2,359
	(High)	1,488	1,951	2,459	2,968	3,396	3,823
	(Low)	1,488	1,623	1,738	1,852	1,939	2,027
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	1,712	1,945	2,169	2,393	2,553	2,713
	(High)	1,712	2,243	2,828	3,413	3,905	4,397
	(Low)	1,712	1,867	1,998	2,130	2,230	2,330
< Water Supply Program >							
- Existing Capacity (m3/day)		1,911	1,911	1,911	1,911	1,911	1,911
(1) Water Supply Extension					1,000	1,000	1,000
- Total Water Supply (m3/day)		1,911	1,911	1,911	2,911	2,911	2,911



(19) Water Demand and Supply Plan (Zambezi)

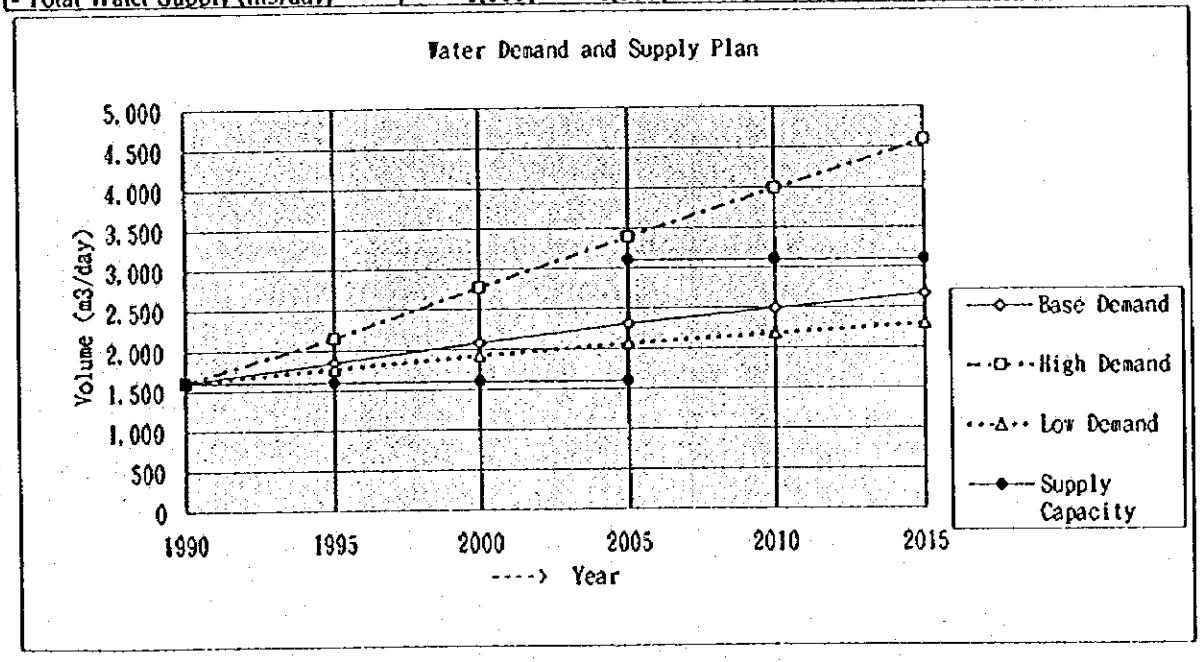
TOWNSHIP		DISTRICT		PROVINCE	
431	Zambezi	43	Zambezi	40	Northwestern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	5,941	(1) Base Projection	6,575	7,798	8,877
- Household	1,267	(2) High Projection	7,389	11,225	16,648
- Family Size	4.7	(3) Low Projection	6,524	7,471	8,083

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Zambezi Water Supply	-DWA	1,600
Surface Water Source : Zambezi River		1,600
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Zambezi River
Groundwater Potential	Fine sands, sandstones with some clays (Kalahari Group) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	891	986	1,078	1,170	1,251	1,332
	(High)	891	1,108	1,396	1,684	2,090	2,497
	(Low)	891	979	1,050	1,121	1,167	1,212
< Industrial Water >							
Water Demand (m3/day)	(Base)	503	616	729	842	919	995
	(High)	503	759	1,014	1,270	1,385	1,499
	(Low)	503	560	617	674	734	793
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	1,394	1,602	1,807	2,012	2,169	2,327
	(High)	1,394	1,867	2,410	2,954	3,475	3,996
	(Low)	1,394	1,539	1,667	1,795	1,900	2,005
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	1,603	1,843	2,078	2,313	2,494	2,676
	(High)	1,603	2,147	2,772	3,397	3,996	4,596
	(Low)	1,603	1,769	1,917	2,064	2,185	2,306
< Water Supply Program >							
- Existing Capacity (m3/day)		1,600	1,600	1,600	1,600	1,600	1,600
(1) Water Supply Extension					1,500	1,500	1,500
- Total Water Supply (m3/day)		1,600	1,600	1,600	3,100	3,100	3,100



(20) Water Demand and Supply Plan (Chavuma)

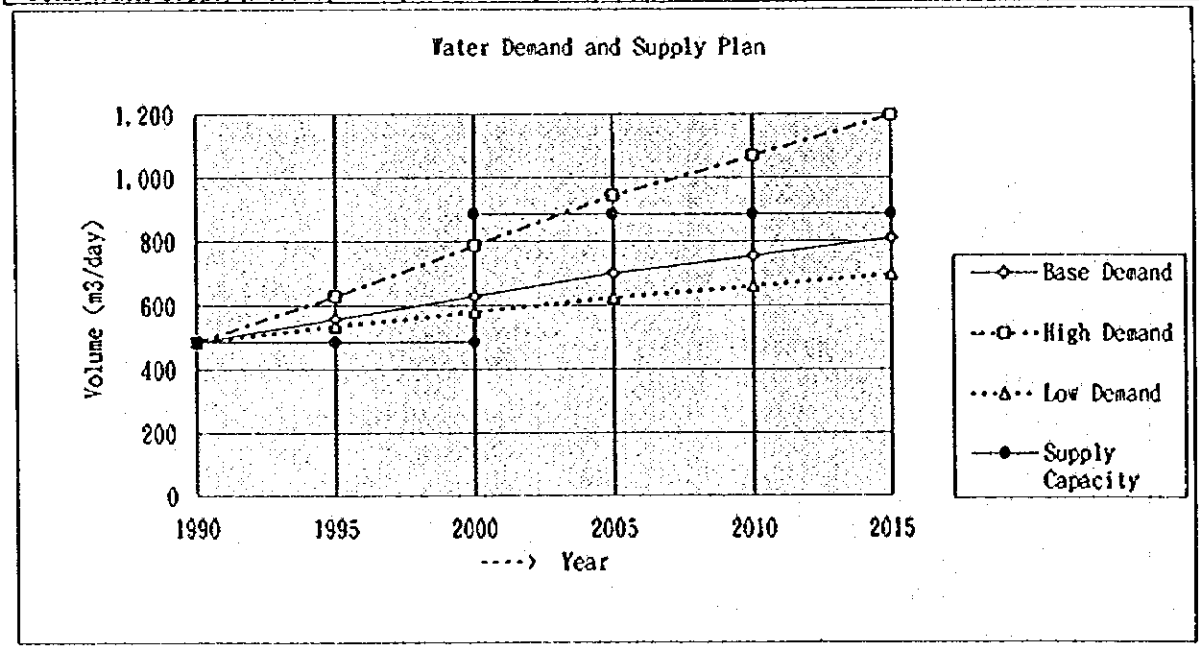
TOWNSHIP		DISTRICT		PROVINCE	
432	Chavuma	43	Zambezi	40	Northwestern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	1,798	(1) Base Projection	1,990	2,360	2,687
- Household	283	(2) High Projection	2,120	2,905	3,910
- Family Size	6.4	(3) Low Projection	1,974	2,261	2,446

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Chavuma Water Supply	-DWA	
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Zambezi River
Groundwater Potential	Fine sands, sandstones with some clays (Kalahari Group) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	270	299	326	354	379	403
	(High)	270	318	377	436	511	587
	(Low)	270	296	318	339	353	367
< Industrial Water >							
Water Demand (m3/day)	(Base)	152	186	221	255	278	301
	(High)	152	230	307	385	419	453
	(Low)	152	169	187	204	222	240
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	422	485	547	609	657	704
	(High)	422	548	684	821	930	1,040
	(Low)	422	465	504	543	575	607
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	485	558	629	700	755	810
	(High)	485	630	787	944	1,070	1,195
	(Low)	485	535	580	625	661	698
< Water Supply Program >							
- Existing Capacity (m3/day)		485	485	485	485	485	485
(1) Water Supply Extension				400	400	400	400
- Total Water Supply (m3/day)		485	485	885	885	885	885



(21) Water Demand and Supply Plan (Kabompo)

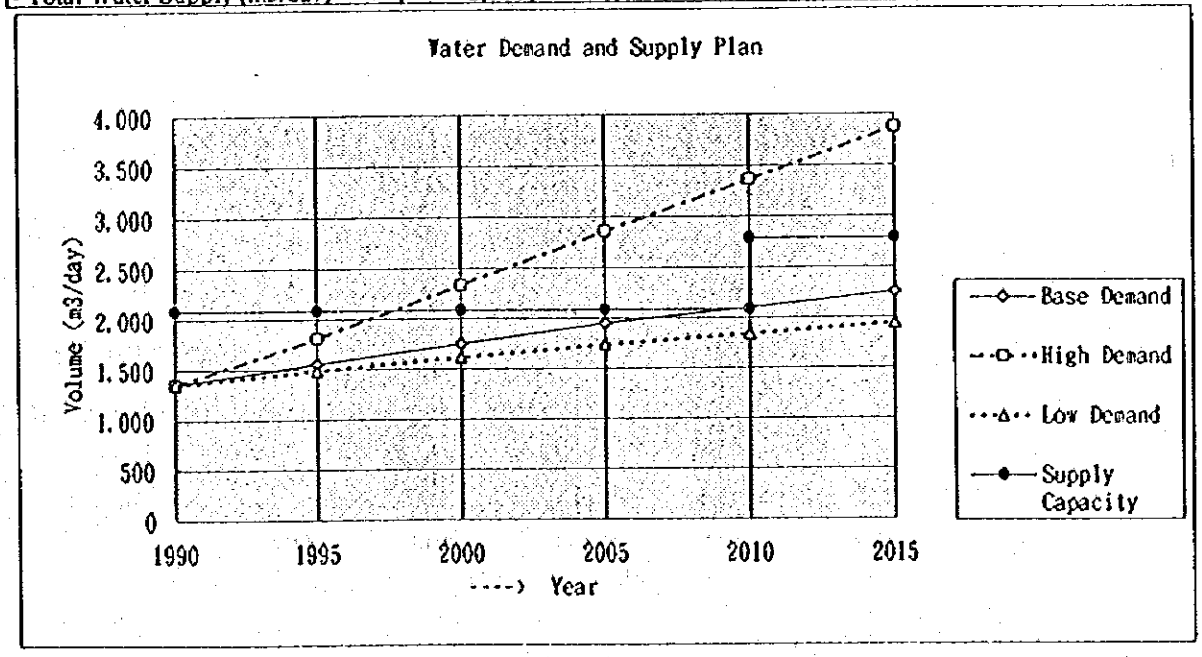
TOWNSHIP		DISTRICT		PROVINCE	
441	Kabompo	44	Kabompo	40	Northwestern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	5,005	(1) Base Projection	5,540	6,570	7,479
- Household	971	(2) High Projection	6,225	9,457	14,025
- Family Size	5.2	(3) Low Projection	5,496	6,294	6,810

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Kabompo Water Supply	-DWA	2,088
Surface Water Source : Kabompo River		2,088
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kabompo River
Groundwater Potential	Shales, siltstones, sandstones (Undifferenciated Kundelungu) Safe Yield=35m3/day, radius of influence=750m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	751	831	908	986	1,054	1,122
	(High)	751	934	1,176	1,419	1,761	2,104
	(Low)	751	824	884	944	983	1,022
< Industrial Water >							
Water Demand (m3/day)	(Base)	424	519	614	709	774	838
	(High)	424	639	854	1,069	1,166	1,262
	(Low)	424	472	519	567	618	668
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	1,175	1,350	1,522	1,695	1,827	1,960
	(High)	1,175	1,573	2,030	2,488	2,927	3,366
	(Low)	1,175	1,296	1,404	1,511	1,600	1,690
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	1,351	1,553	1,751	1,949	2,101	2,254
	(High)	1,351	1,809	2,335	2,861	3,366	3,871
	(Low)	1,351	1,490	1,614	1,738	1,840	1,943
< Water Supply Program >							
- Existing Capacity (m3/day)		2,088	2,088	2,088	2,088	2,088	2,088
(1) Water Supply Extension						700	700
- Total Water Supply (m3/day)		2,088	2,088	2,088	2,088	2,788	2,788



(22) Water Demand and Supply Plan (Mufumbwe)

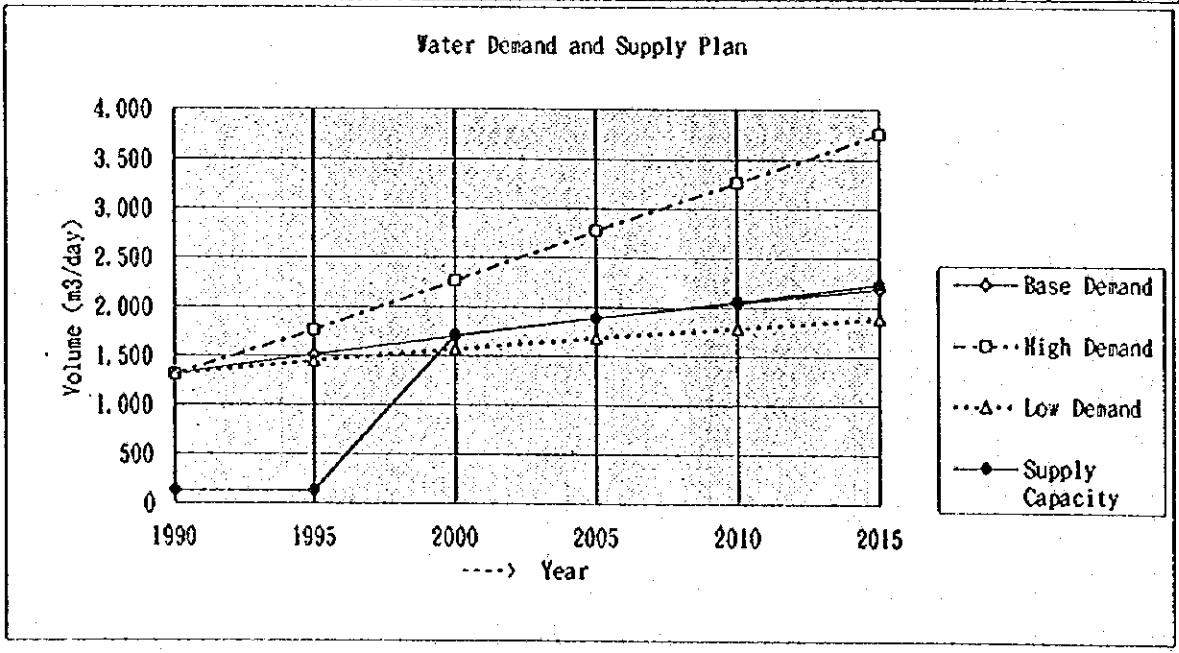
TOWNSHIP		DISTRICT		PROVINCE	
451	Mufumbwe	45	Mufumbwe	40	Northwestern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	4,860	(1) Base Projection	5,379	6,379	7,262
- Household	1,116	(2) High Projection	6,045	9,183	13,619
- Family Size	4.4	(3) Low Projection	5,337	6,112	6,612

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Mufumbwe Water Supply	-DWA	134
Surface Water Source :		0
Groundwater Source : Boreholes (2 production wells)		134

WATER RESOURCES POTENTIAL	
Surface Water Potential	Mufumbwe River, Musondweji River
Groundwater Potential	Shales, siltstones, sandstones (Undifferentiated Kundelungu) Safe Yield=35m3/day, radius of influence=750m, Borehole:L=60m, ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	729	807	882	957	1,023	1,089
	(High)	729	907	1,142	1,377	1,710	2,043
	(Low)	729	801	859	917	954	992
< Industrial Water >							
Water Demand (m3/day)	(Base)	412	504	597	689	752	814
	(High)	412	621	830	1,039	1,133	1,226
	(Low)	412	458	505	551	600	649
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	1,141	1,311	1,479	1,646	1,775	1,903
	(High)	1,141	1,528	1,972	2,416	2,843	3,269
	(Low)	1,141	1,259	1,363	1,468	1,554	1,641
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	1,312	1,508	1,700	1,893	2,041	2,189
	(High)	1,312	1,757	2,268	2,779	3,269	3,759
	(Low)	1,312	1,448	1,568	1,688	1,787	1,887
< Water Supply Program >							
- Existing Capacity (m3/day)		134	134	134	134	134	134
(1) Boreholes (45 wells)				1,575	1,575	1,575	1,575
(2) Boreholes (5 wells)					175	175	175
(3) Boreholes (5 wells)						175	175
(4) Boreholes (5 wells)							175
- Total Water Supply (m3/day)		134	134	1,709	1,884	2,059	2,234



(23) Water Demand and Supply Plan (Kasempa)

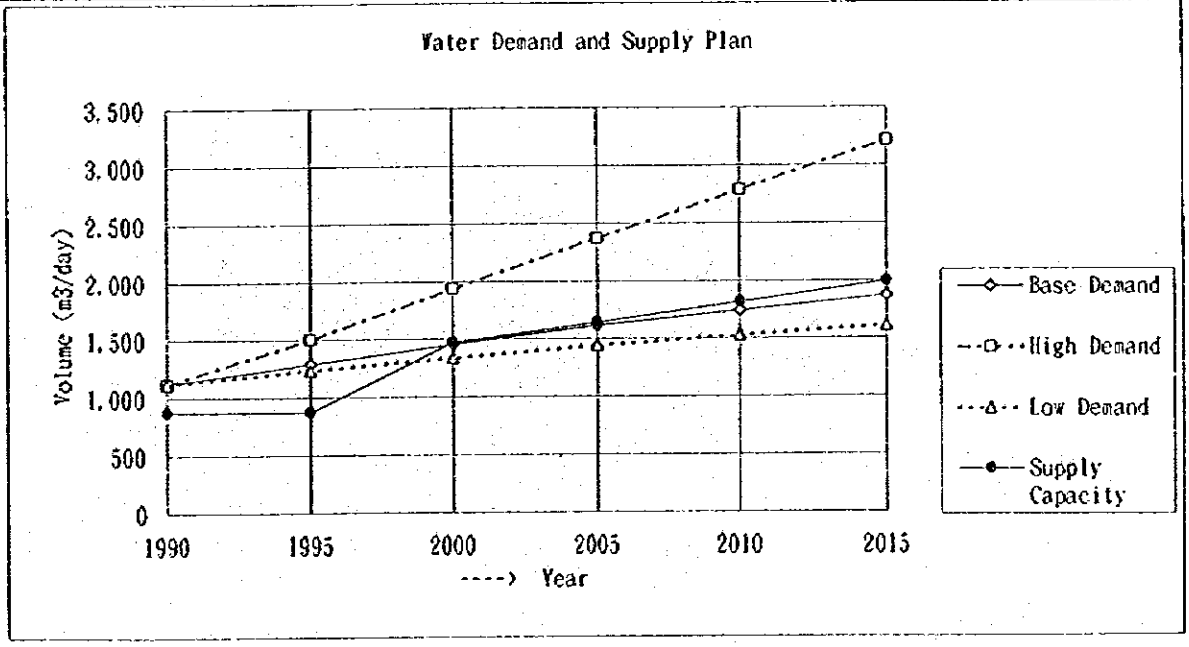
TOWNSHIP		DISTRICT		PROVINCE	
461	Kasempa	46	Kasempa	40	Northwestern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	4,151	(1) Base Projection	4,594	5,449	6,203
- Household	932	(2) High Projection	5,163	7,843	11,632
- Family Size	4.5	(3) Low Projection	4,558	5,220	5,647

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Kasempa Water Supply	-DWA	873
Surface Water Source : Lufupa River		873
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Lufupa River
Groundwater Potential	Shales, siltstones, sandstones (Undifferentiated Kundelungu) Safe Yield=35m3/day, radius of influence=750m, Boreholes:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	623	689	753	817	874	930
	(High)	623	774	975	1,176	1,461	1,745
	(Low)	623	684	733	783	815	847
< Industrial Water >							
Water Demand (m3/day)	(Base)	352	431	509	588	642	695
	(High)	352	530	709	887	967	1,047
	(Low)	352	392	431	471	513	554
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	975	1,120	1,263	1,405	1,515	1,625
	(High)	975	1,305	1,684	2,063	2,428	2,792
	(Low)	975	1,075	1,165	1,254	1,328	1,401
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	1,121	1,288	1,452	1,616	1,743	1,869
	(High)	1,121	1,501	1,937	2,373	2,792	3,211
	(Low)	1,121	1,237	1,339	1,442	1,527	1,611
< Water Supply Program >							
- Existing Capacity (m3/day)		873	873	873	873	873	873
(1) Boreholes (17 wells)				595	595	595	595
(2) Boreholes (5 wells)					175	175	175
(3) Boreholes (5 wells)						175	175
(4) Boreholes (5 wells)							175
- Total Water Supply (m3/day)		873	873	1,468	1,643	1,818	1,993



(24) Water Demand and Supply Plan (Mongu)

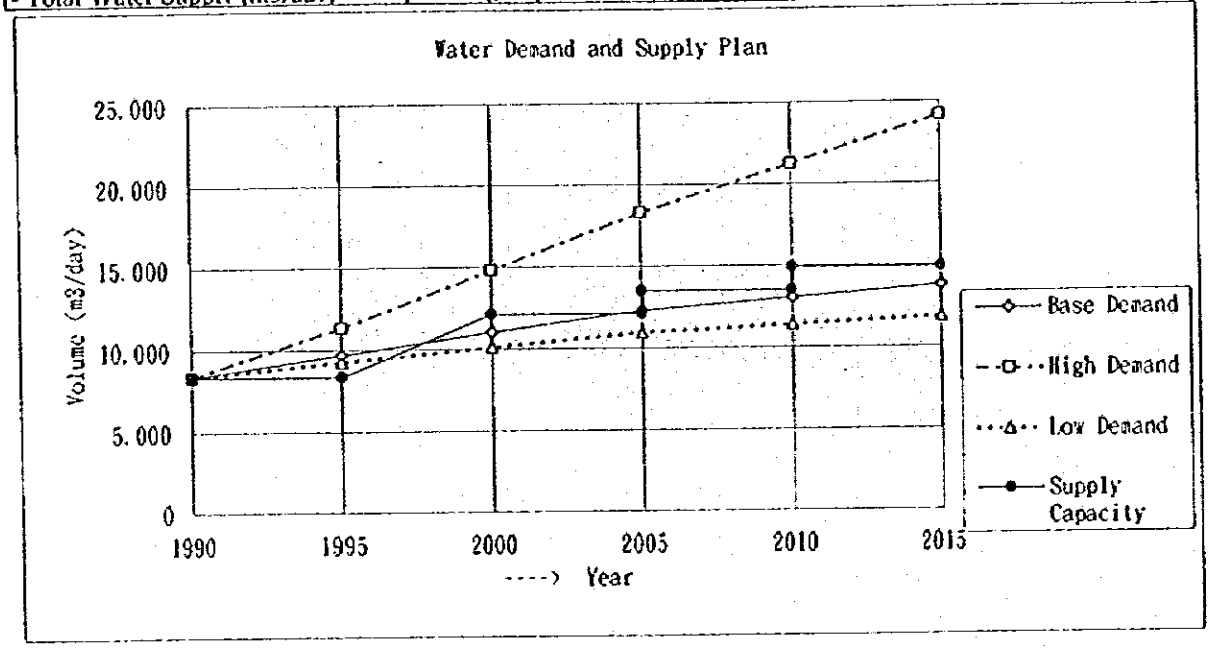
TOWNSHIP		DISTRICT		PROVINCE	
511	Mongu	51	Mongu	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	29,302	(1) Base Projection	32,685	39,357	45,498
- Household	5,679	(2) High Projection	37,006	57,912	88,485
- Family Size	5.2	(3) Low Projection	32,416	37,694	41,388

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Mongu Water Supply	-Council	
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Zambezi River, Luena River
Groundwater Potential	Alluvial sands and gravels (Alluvium) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	4,395	4,903	5,403	5,904	6,364	6,825
	(High)	4,395	5,551	7,119	8,687	10,980	13,273
	(Low)	4,395	4,862	5,258	5,654	5,931	6,208
< Industrial Water >							
Water Demand (m3/day)	(Base)	2,863	3,508	4,152	4,797	4,971	5,145
	(High)	2,863	4,321	5,778	7,236	7,493	7,749
	(Low)	2,863	3,188	3,514	3,839	3,970	4,101
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	7,258	8,410	9,555	10,701	11,335	11,970
	(High)	7,258	9,872	12,897	15,923	18,472	21,022
	(Low)	7,258	8,051	8,772	9,493	9,901	10,309
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	8,347	9,672	10,989	12,306	13,035	13,765
	(High)	8,347	11,352	14,832	18,311	21,243	24,175
	(Low)	8,347	9,258	10,088	10,917	11,386	11,856
< Water Supply Program >							
- Existing Capacity (m3/day)		8,350	8,350	8,350	8,350	8,350	8,350
(1) Boreholes (8 wells)				3,744	3,744	3,744	3,744
(2) Boreholes (3 wells)					1,404	1,404	1,404
(3) Boreholes (3 wells)						1,404	1,404
- Total Water Supply (m3/day)		8,350	8,350	12,094	13,498	14,902	14,902



(25) Water Demand and Supply Plan (Limulunga)

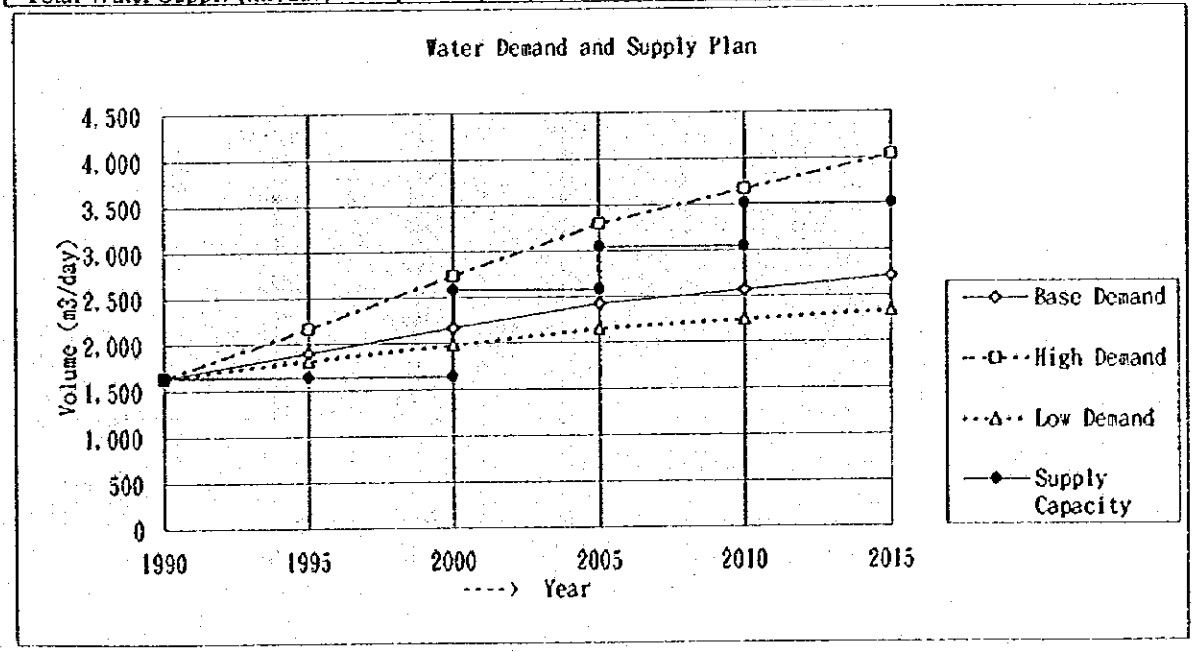
TOWNSHIP		DISTRICT		PROVINCE	
512	Limulunga	51	Mongu	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	5,764	(1) Base Projection	6,430	7,742	8,950
- Household	1,367	(2) High Projection	6,874	9,635	13,264
- Family Size	4.2	(3) Low Projection	6,376	7,415	8,141

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Zambezi River
Groundwater Potential	Alluvial sands and gravels (Alluvium) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,φ=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	865	965	1,063	1,161	1,252	1,343
	(High)	865	1,031	1,238	1,445	1,717	1,990
	(Low)	865	956	1,034	1,112	1,167	1,221
< Industrial Water >							
Water Demand (m3/day)	(Base)	563	690	817	944	978	1,012
	(High)	563	850	1,137	1,424	1,474	1,524
	(Low)	563	627	692	756	782	807
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	1,428	1,655	1,880	2,105	2,230	2,355
	(High)	1,428	1,881	2,375	2,869	3,191	3,514
	(Low)	1,428	1,584	1,726	1,868	1,948	2,028
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	1,642	1,903	2,162	2,421	2,564	2,708
	(High)	1,642	2,163	2,731	3,300	3,670	4,041
	(Low)	1,642	1,821	1,985	2,148	2,240	2,332
< Water Supply Program >							
- Existing Capacity (m3/day)		1,642	1,642	1,642	1,642	1,642	1,642
(1) Boreholes (2 wells)				936	936	936	936
(2) Borehole (1 well)					468	468	468
(3) Borehole (1 well)						468	468
- Total Water Supply (m3/day)		1,642	1,642	2,578	3,046	3,514	3,514



(26) Water Demand and Supply Plan (Namushakande)

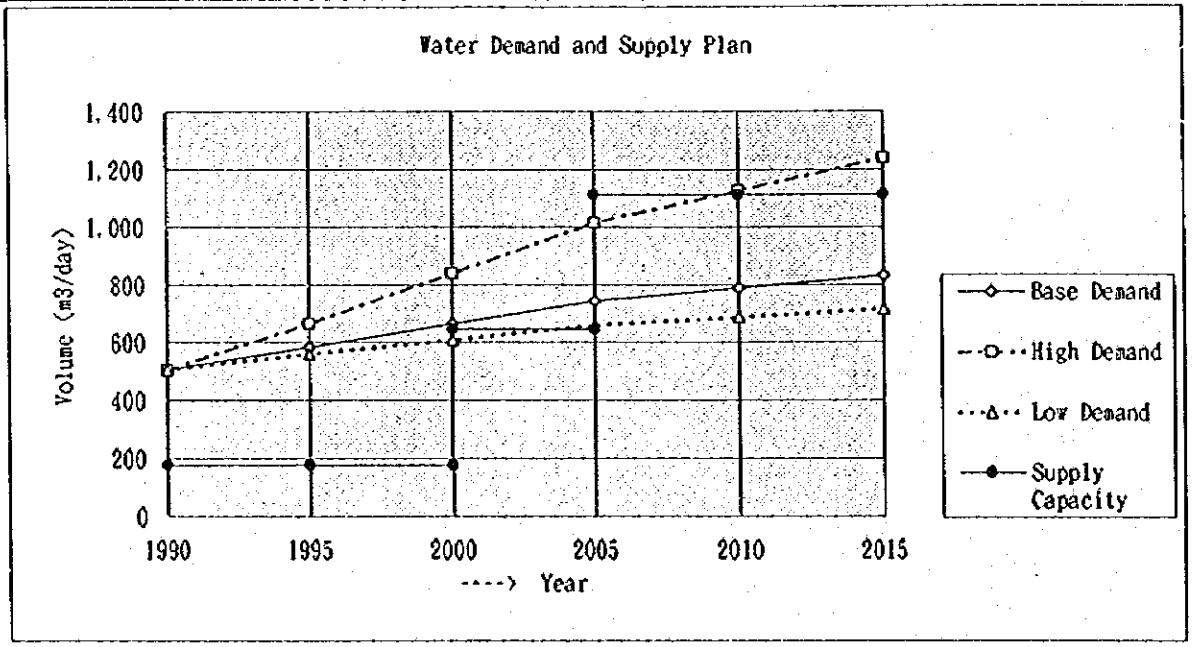
TOWNSHIP		DISTRICT		PROVINCE	
513	Namushakande	51	Mongu	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	1,771	(1) Base Projection	1,976	2,379	2,750
- Household	421	(2) High Projection	2,112	2,961	4,075
- Family Size	4.2	(3) Low Projection	1,959	2,278	2,502

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Namushakande Water Supply	-DWA	177
Surface Water Source :		0
Groundwater Source : Boreholes (2 production wells)		177

WATER RESOURCES POTENTIAL	
Surface Water Potential	Zambezi River
Groundwater Potential	Fine sands, sandstones with some clays (Kalahari Group) Safe Yield=468m3/day, radius of influence=1680m, Boreholes:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	266	296	327	357	385	413
	(High)	266	317	380	444	528	611
	(Low)	266	294	318	342	359	375
< Industrial Water >							
Water Demand (m3/day)	(Base)	173	212	251	290	301	311
	(High)	173	261	349	437	453	468
	(Low)	173	193	212	232	240	248
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	439	508	578	647	685	724
	(High)	439	578	729	881	980	1,079
	(Low)	439	487	530	574	599	623
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	504	585	664	744	788	832
	(High)	504	664	839	1,013	1,127	1,241
	(Low)	504	559	610	660	688	717
< Water Supply Program >							
- Existing Capacity (m3/day)		177	177	177	177	177	177
(1) Borehole (1 well)				468	468	468	468
(2) Borehole (1 well)					468	468	468
- Total Water Supply (m3/day)		177	177	645	1,113	1,113	1,113



(27) Water Demand and Supply Plan (Lukulu)

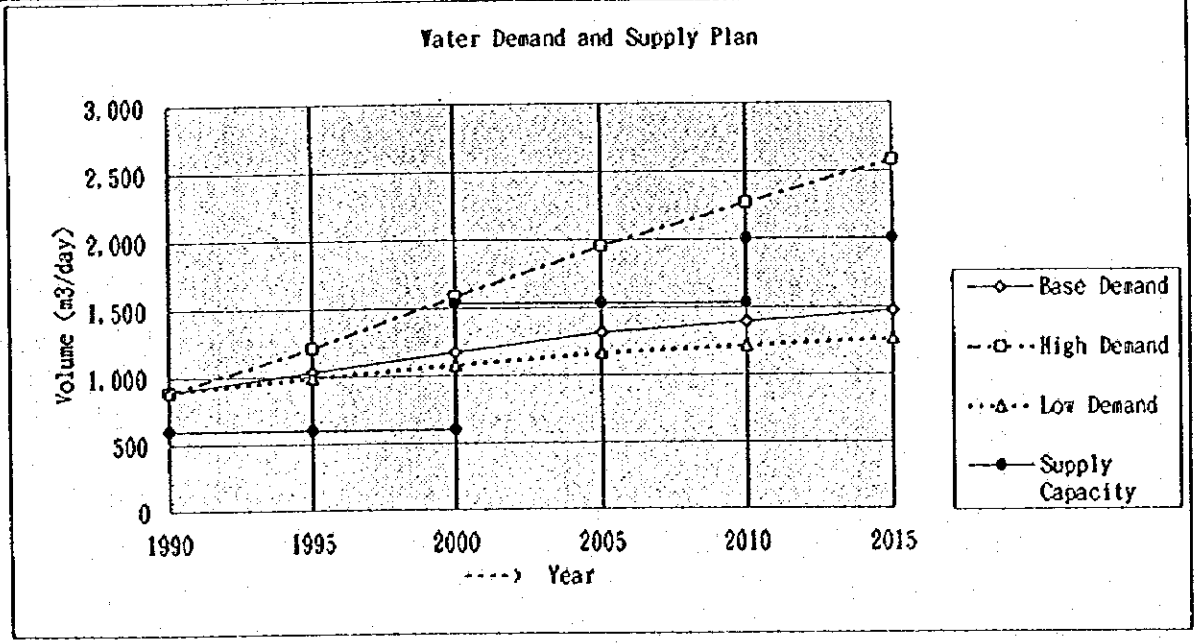
TOWNSHIP		DISTRICT		PROVINCE	
521	Lukulu	52	Lukulu	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	3,129	(1) Base Projection	3,491	4,203	4,859
- Household	706	(2) High Projection	3,952	6,184	9,449
- Family Size	4.4	(3) Low Projection	3,461	4,025	4,419

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Lukulu Water Supply	-DWA	600
Surface Water Source :		0
Groundwater Source : Boreholes (2 production wells)		600

WATER RESOURCES POTENTIAL	
Surface Water Potential	Zambezi River
Groundwater Potential	Alluval sands and gravels (Alluvium) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap /day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	469	524	577	630	680	729
	(High)	469	593	760	928	1,172	1,417
	(Low)	469	519	561	604	633	663
< Industrial Water >							
Water Demand (m3/day)	(Base)	306	375	443	512	531	549
	(High)	306	461	617	772	800	827
	(Low)	306	341	375	410	424	438
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	775	898	1,020	1,142	1,210	1,278
	(High)	775	1,054	1,377	1,700	1,972	2,244
	(Low)	775	860	937	1,014	1,057	1,101
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	892	1,033	1,173	1,314	1,392	1,470
	(High)	892	1,212	1,583	1,955	2,268	2,581
	(Low)	892	989	1,077	1,166	1,216	1,266
< Water Supply Program >							
- Existing Capacity (m3/day)		600	600	600	600	600	600
(1) Boreholes (2 wells)				936	936	936	936
(2) Borehole (1 well)						468	468
- Total Water Supply (m3/day)		600	600	1,536	1,536	2,004	2,004



(28) Water Demand and Supply Plan (Kalabo)

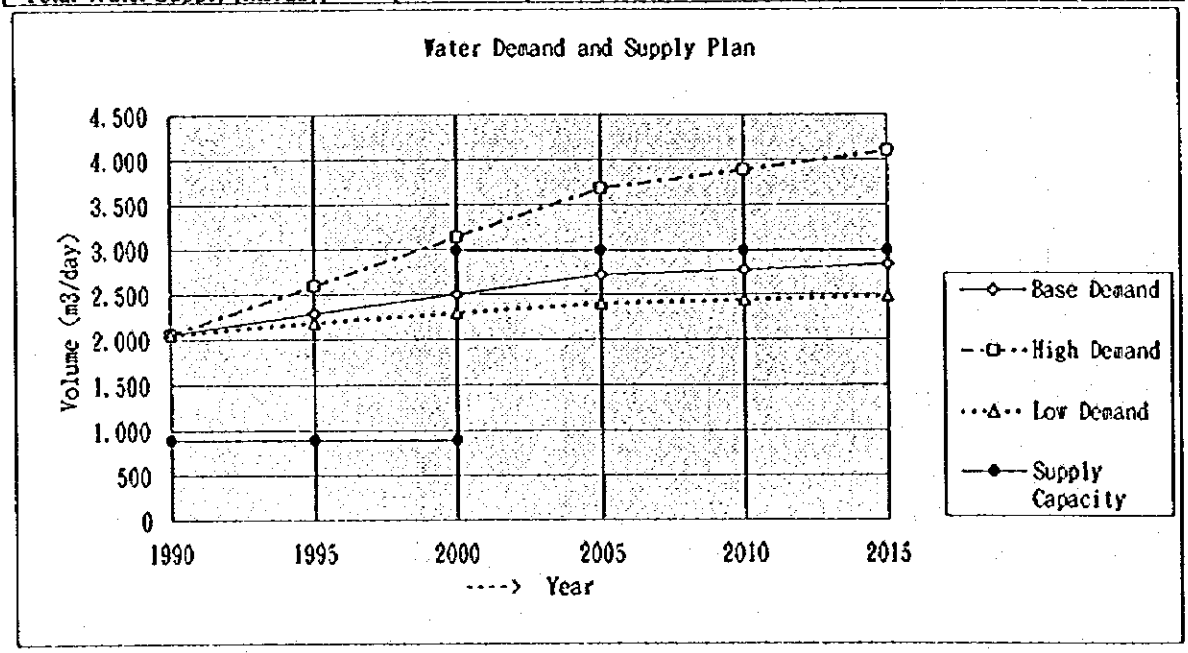
TOWNSHIP		DISTRICT		PROVINCE	
531	Kalabo	53	Kalabo	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	7,209	(1) Base Projection	7,505	7,877	7,981
- Household	1,680	(2) High Projection	7,952	9,487	11,052
- Family Size	4.3	(3) Low Projection	7,447	7,612	7,654

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Kalabo Water Supply	-DWA	888
Surface Water Source : Luanginga River		888
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Luanginga River, Northern Lueti River
Groundwater Potential	Alluvial sands and gravels (Alluvium) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	1,081	1,126	1,154	1,182	1,189	1,197
	(High)	1,081	1,193	1,308	1,423	1,540	1,658
	(Low)	1,081	1,117	1,129	1,142	1,145	1,148
< Industrial Water >							
Water Demand (m3/day)	(Base)	704	863	1,021	1,180	1,223	1,266
	(High)	704	1,063	1,421	1,780	1,844	1,907
	(Low)	704	784	864	944	977	1,009
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	1,785	1,988	2,175	2,362	2,412	2,463
	(High)	1,785	2,255	2,729	3,203	3,384	3,565
	(Low)	1,785	1,901	1,993	2,086	2,121	2,157
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	2,053	2,287	2,501	2,716	2,774	2,833
	(High)	2,053	2,594	3,139	3,684	3,892	4,100
	(Low)	2,053	2,186	2,292	2,399	2,440	2,481
< Water Supply Program >							
- Existing Capacity (m3/day)		888	888	888	888	888	888
(1) Water Supply Extension				2,100	2,100	2,100	2,100
- Total Water Supply (m3/day)		888	888	2,988	2,988	2,988	2,988



(29) Water Demand and Supply Plan (Sikongo)

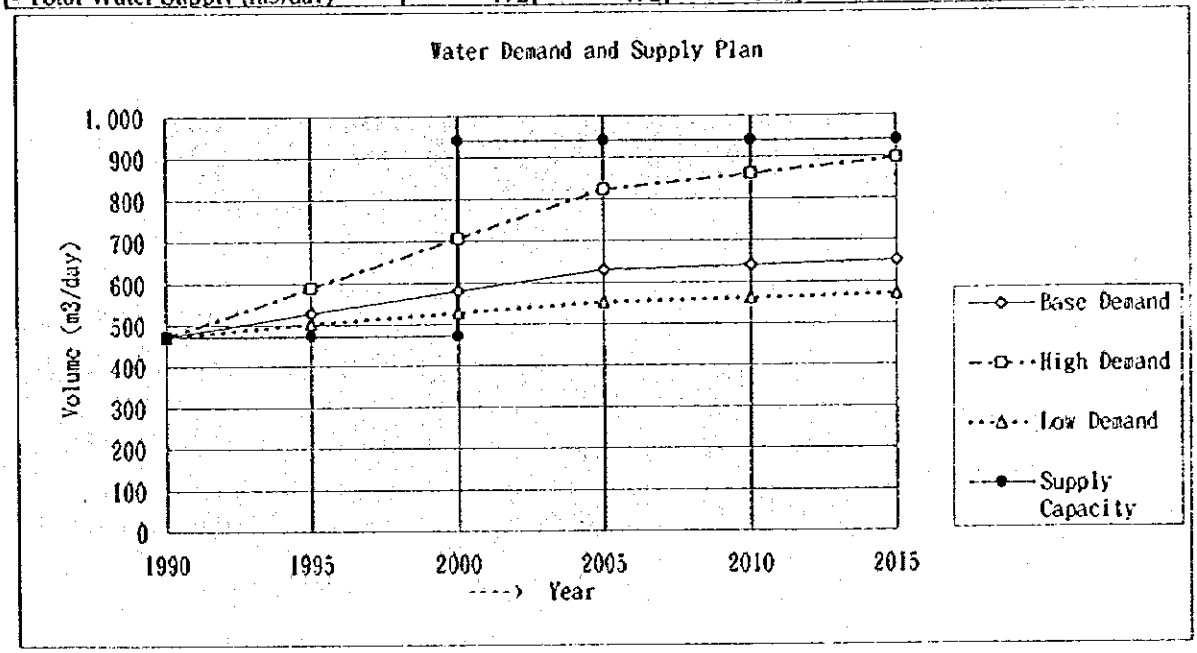
TOWNSHIP		DISTRICT		PROVINCE	
532	Sikongo	53	Kalabo	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	1,659	(1) Base Projection	1,727	1,813	1,837
- Household	425	(2) High Projection	1,786	2,039	2,287
- Family Size	3.9	(3) Low Projection	1,714	1,752	1,761

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Northen Lueti River
Groundwater Potential	Fine sands, sandstones with some clays (Kalahari Group) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	249	259	266	272	274	276
	(High)	249	268	287	306	324	343
	(Low)	249	257	260	263	263	264
< Industrial Water >							
Water Demand (m3/day)	(Base)	162	200	239	277	284	291
	(High)	162	245	327	410	424	438
	(Low)	162	181	199	218	225	232
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	411	459	504	549	558	567
	(High)	411	513	614	716	748	781
	(Low)	411	438	459	481	488	496
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	472	528	580	631	641	652
	(High)	472	589	706	823	861	898
	(Low)	472	503	528	553	562	571
< Water Supply Program >							
- Existing Capacity (m3/day)		472	472	472	472	472	472
(1) Borehole (1 well)				468	468	468	468
- Total Water Supply (m3/day)		472	472	940	940	940	940



(30) Water Demand and Supply Plan (Kaoma)

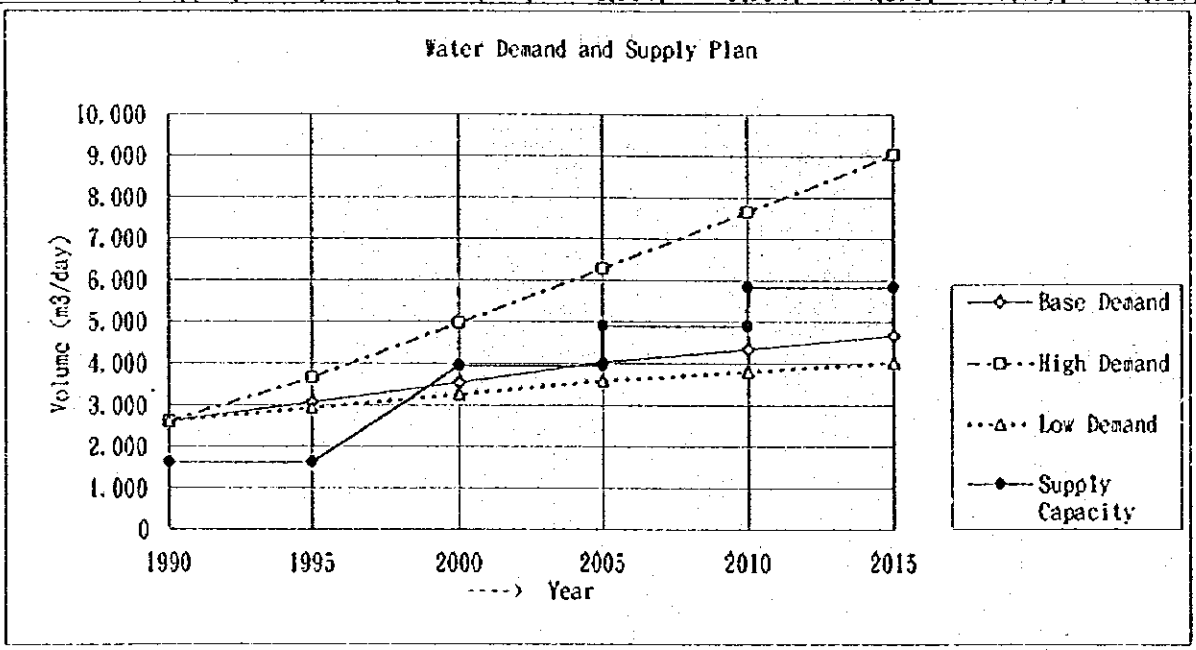
TOWNSHIP		DISTRICT		PROVINCE	
541	Kaoma	54	Kaoma	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	9,165	(1) Base Projection	10,507	13,370	16,330
- Household	2,092	(2) High Projection	12,207	21,270	36,195
- Family Size	4.4	(3) Low Projection	10,424	12,808	14,864

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Kaoma Water Supply	-DWA	1,614
Surface Water Source :		0
Groundwater Source : Boreholes (7 production wells)		1,614

WATER RESOURCES POTENTIAL	
Surface Water Potential	Luena River
Groundwater Potential	Fine sands, sandstones with some clays (Kalahari Group) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ø=30cm

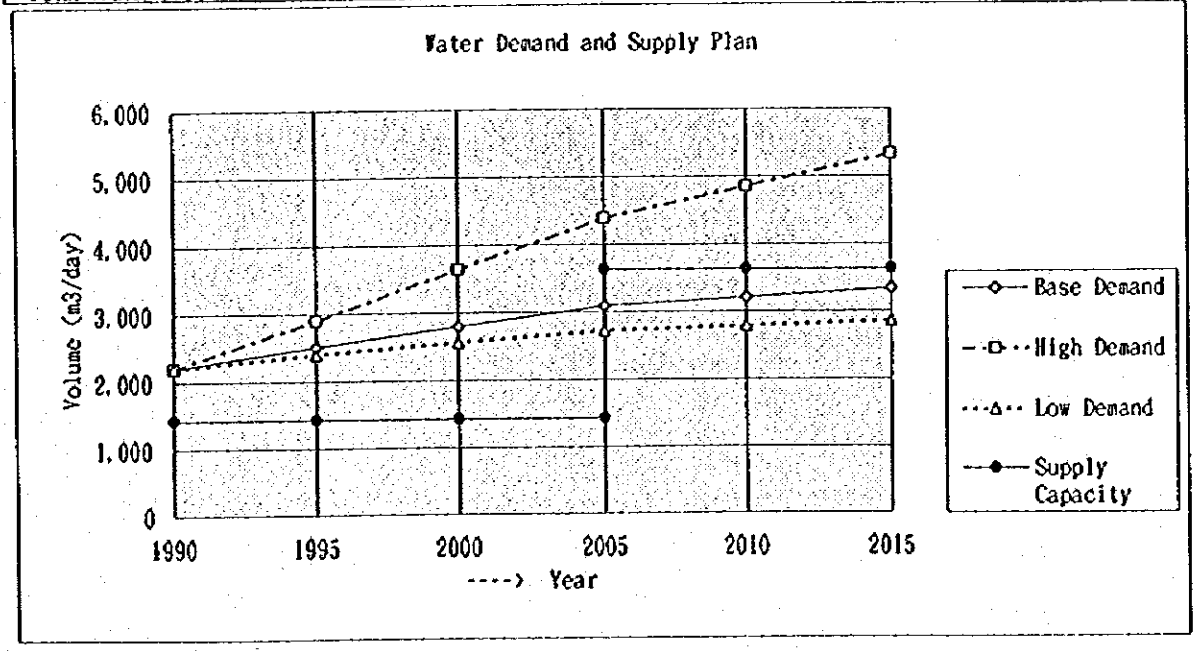
WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	1,375	1,576	1,791	2,006	2,228	2,450
	(High)	1,375	1,831	2,511	3,191	4,310	5,429
	(Low)	1,375	1,564	1,742	1,921	2,075	2,230
< Industrial Water >							
Water Demand (m3/day)	(Base)	895	1,097	1,298	1,500	1,555	1,609
	(High)	895	1,351	1,807	2,263	2,343	2,423
	(Low)	895	997	1,099	1,201	1,242	1,282
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	2,270	2,673	3,089	3,506	3,782	4,059
	(High)	2,270	3,182	4,318	5,454	6,653	7,852
	(Low)	2,270	2,561	2,841	3,122	3,317	3,512
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	2,610	3,074	3,552	4,031	4,349	4,667
	(High)	2,610	3,659	4,965	6,272	7,651	9,030
	(Low)	2,610	2,945	3,268	3,591	3,814	4,038
< Water Supply Program >							
- Existing Capacity (m3/day)		1,614	1,614	1,614	1,614	1,614	1,614
(1) Boreholes (5 wells)				2,340	2,340	2,340	2,340
(2) Boreholes (2 wells)					936	936	936
(3) Boreholes (2 wells)						936	936
- Total Water Supply (m3/day)		1,614	1,614	3,954	4,890	5,826	5,826



(31) Water Demand and Supply Plan (Senanga)

TOWNSHIP		DISTRICT		PROVINCE		
551	Senanga	55	Senanga	50	Western	
1990 CENSUS POPULATION AND FUTURE PROJECTION						
1990 Census Data		Projection Scenarios		1995	2005	2015
- Population	7,727	(1) Base Projection		8,361	9,471	10,298
- Household	1,651	(2) High Projection		9,186	12,747	17,264
- Family Size	4.7	(3) Low Projection		8,291	9,069	9,363
CURRENT DOMESTIC WATER SUPPLY PROJECT						
Name of Water Supply Project		Type of Managing Body		Water Supply Volume (m3/day)		
-Senanga Water Supply		-DWA		1,429		
Surface Water Source : Zambezi River				1,429		
Groundwater Source :				0		
WATER RESOURCES POTENTIAL						
Surface Water Potential	Zambezi River					
Groundwater Potential	Alluvial sands and gravels (Alluvium) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ø=30cm					

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	1,159	1,254	1,337	1,421	1,483	1,545
	(High)	1,159	1,378	1,645	1,912	2,251	2,590
	(Low)	1,159	1,244	1,302	1,360	1,382	1,404
< Industrial Water >							
Water Demand (m3/day)	(Base)	755	925	1,095	1,265	1,311	1,357
	(High)	755	1,139	1,524	1,908	1,976	2,044
	(Low)	755	841	926	1,012	1,047	1,082
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	1,914	2,179	2,432	2,686	2,794	2,902
	(High)	1,914	2,517	3,169	3,820	4,227	4,634
	(Low)	1,914	2,084	2,228	2,372	2,429	2,486
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	2,201	2,506	2,797	3,088	3,213	3,337
	(High)	2,201	2,895	3,644	4,393	4,861	5,329
	(Low)	2,201	2,397	2,563	2,728	2,794	2,859
< Water Supply Program >							
- Existing Capacity (m3/day)		1,429	1,429	1,429	1,429	1,429	1,429
(1) Water Supply Extension					2,200	2,200	2,200
- Total Water Supply (m3/day)		1,429	1,429	1,429	3,629	3,629	3,629



(32) Water Demand and Supply Plan (Shangombo)

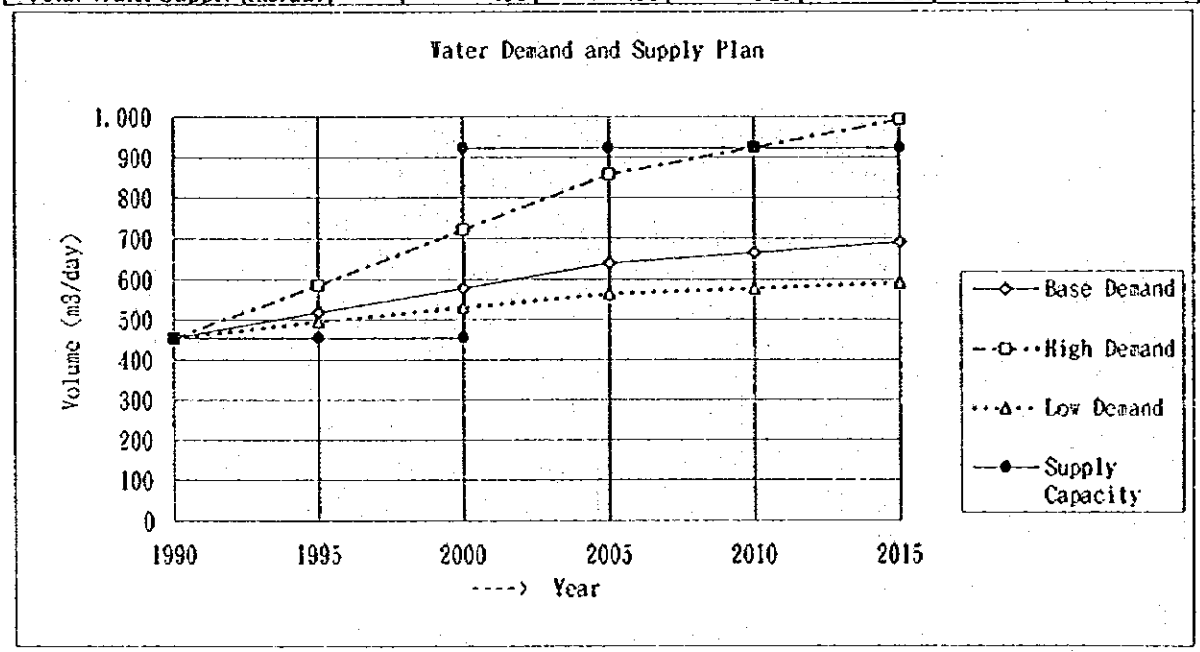
TOWNSHIP		DISTRICT		PROVINCE	
552	Shangombo	55	Senanga	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	1,599	(1) Base Projection	1,730	1,960	2,131
- Household	279	(2) High Projection	1,822	2,331	2,929
- Family Size	5.7	(3) Low Projection	1,716	1,877	1,938

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kuwando River
Groundwater Potential	Fine sands, sandstones with some clays (Kalahari Group) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,φ=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	240	260	277	294	307	320
	(High)	240	273	311	350	395	439
	(Low)	240	257	269	282	286	291
< Industrial Water >							
Water Demand (m3/day)	(Base)	156	191	227	262	272	281
	(High)	156	236	315	395	409	423
	(Low)	156	174	192	210	217	224
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	396	451	503	556	578	601
	(High)	396	509	627	745	804	862
	(Low)	396	431	461	492	503	515
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	455	518	579	639	665	691
	(High)	455	585	721	856	924	992
	(Low)	455	496	531	565	579	592
< Water Supply Program >							
- Existing Capacity (m3/day)		455	455	455	455	455	455
(1) Borehole (1 well)				468	468	468	468
- Total Water Supply (m3/day)		455	455	923	923	923	923



(33) Water Demand and Supply Plan (Sesheke)

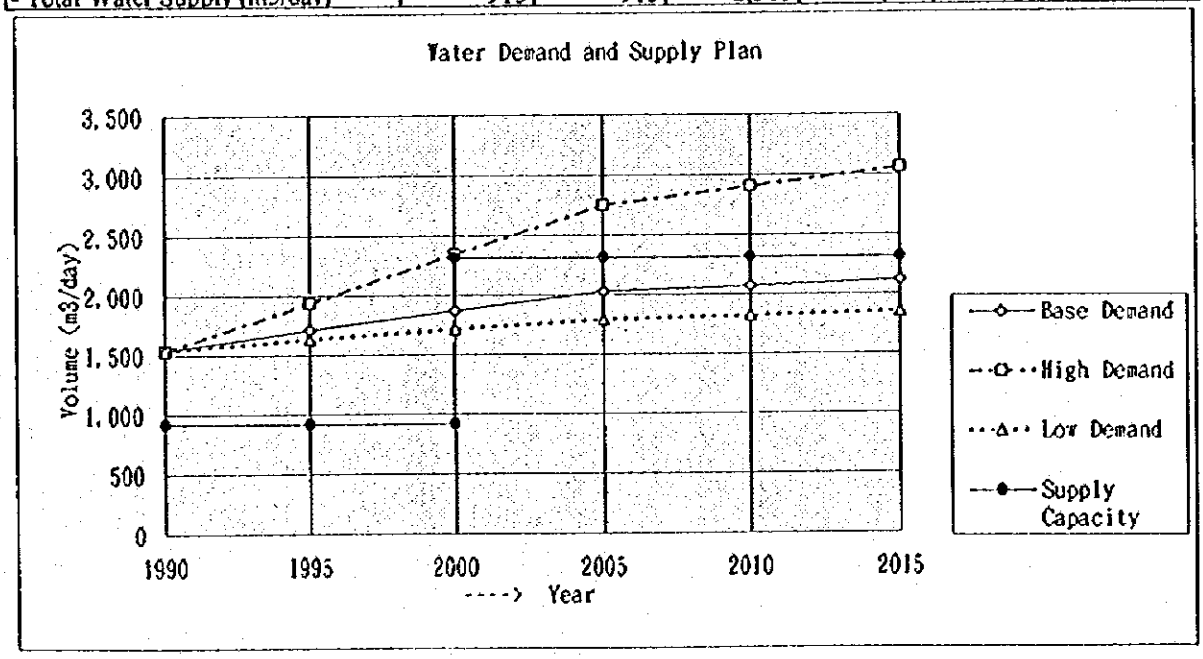
TOWNSHIP		DISTRICT		PROVINCE	
561	Sesheke	56	Sesheke	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	5,390	(1) Base Projection	5,612	5,890	5,967
- Household	1,060	(2) High Projection	5,945	7,093	8,263
- Family Size	5.1	(3) Low Projection	5,568	5,691	5,722

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Sesheke Water Supply	-DWA	915
Surface Water Source : Zambezi River		915
Groundwater Source :		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Zambezi River
Groundwater Potential	Fine sands, sandstones with some clays (Kalahari Group) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	809	842	863	884	889	895
	(High)	809	892	978	1,064	1,152	1,239
	(Low)	809	835	844	854	856	858
< Industrial Water >							
Water Demand (m3/day)	(Base)	527	645	764	882	914	946
	(High)	527	795	1,062	1,330	1,378	1,425
	(Low)	527	587	646	706	730	754
< Domestic & Industrial Water >							
Township Gross Water Demand (m3/day)	(Base)	1,336	1,487	1,626	1,766	1,803	1,841
	(High)	1,336	1,686	2,040	2,394	2,529	2,664
	(Low)	1,336	1,422	1,491	1,560	1,586	1,612
- Water Loss Rate (%)		15	15	15	15	15	15
Township Net Water Demand (m3/day)	(Base)	1,536	1,710	1,870	2,030	2,074	2,117
	(High)	1,536	1,939	2,346	2,753	2,909	3,064
	(Low)	1,536	1,635	1,714	1,794	1,824	1,854
< Water Supply Program >							
- Existing Capacity (m3/day)		915	915	915	915	915	915
(1) Water Supply Extension				1,400	1,400	1,400	1,400
- Total Water Supply (m3/day)		915	915	2,315	2,315	2,315	2,315



(34) Water Demand and Supply Plan (Mulobezi)

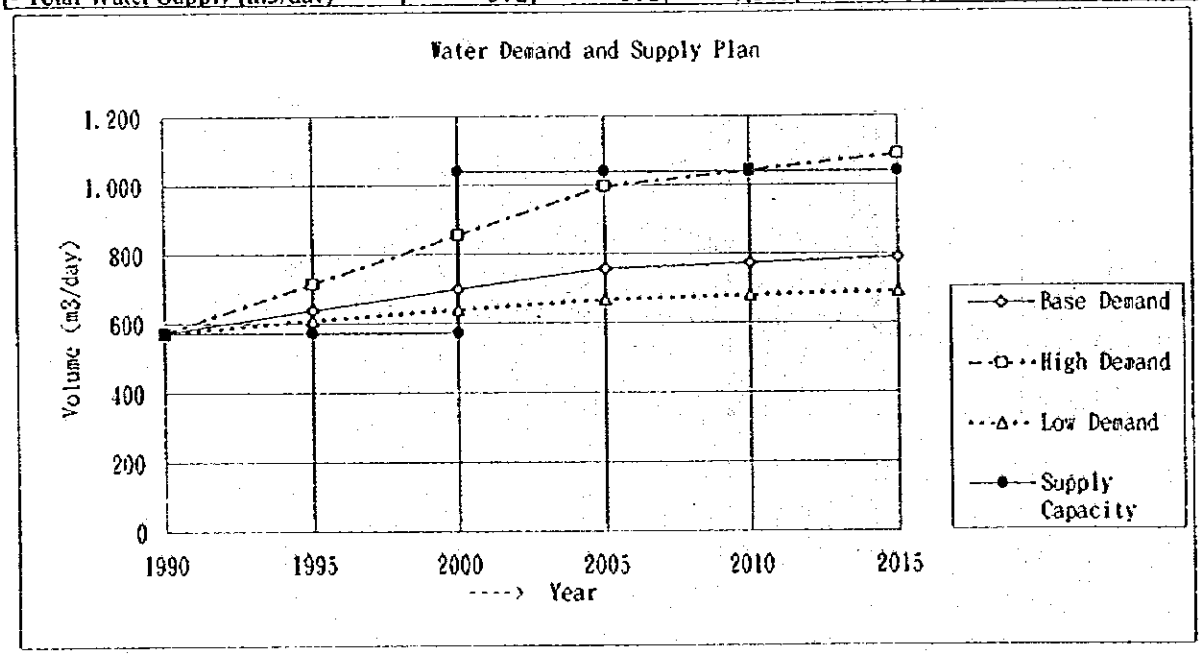
TOWNSHIP		DISTRICT		PROVINCE	
562	Mulobezi	56	Sesheke	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	2,009	(1) Base Projection	2,092	2,195	2,224
- Household	470	(2) High Projection	2,163	2,469	2,770
- Family Size	4.3	(3) Low Projection	2,075	2,121	2,133

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Mulobezi River, Machile River
Groundwater Potential	Fine sands , sandstones with some clays (Kalahari Group) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	301	314	322	329	331	334
	(High)	301	324	347	370	393	416
	(Low)	301	311	315	318	319	320
< Industrial Water >							
Water Demand (m3/day)	(Base)	196	240	285	329	341	353
	(High)	196	296	396	496	514	532
	(Low)	196	218	241	263	272	281
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	497	554	606	658	672	687
	(High)	497	620	743	866	907	948
	(Low)	497	530	555	581	591	601
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	572	637	697	757	773	790
	(High)	572	714	855	996	1,043	1,090
	(Low)	572	609	639	668	680	691
< Water Supply Program >							
- Existing Capacity (m3/day)		572	572	572	572	572	572
(1) Borehole (1 well)				468	468	468	468
- Total Water Supply (m3/day)		572	572	1,040	1,040	1,040	1,040



(35) Water Demand and Supply Plan (Katima-Mulilo)

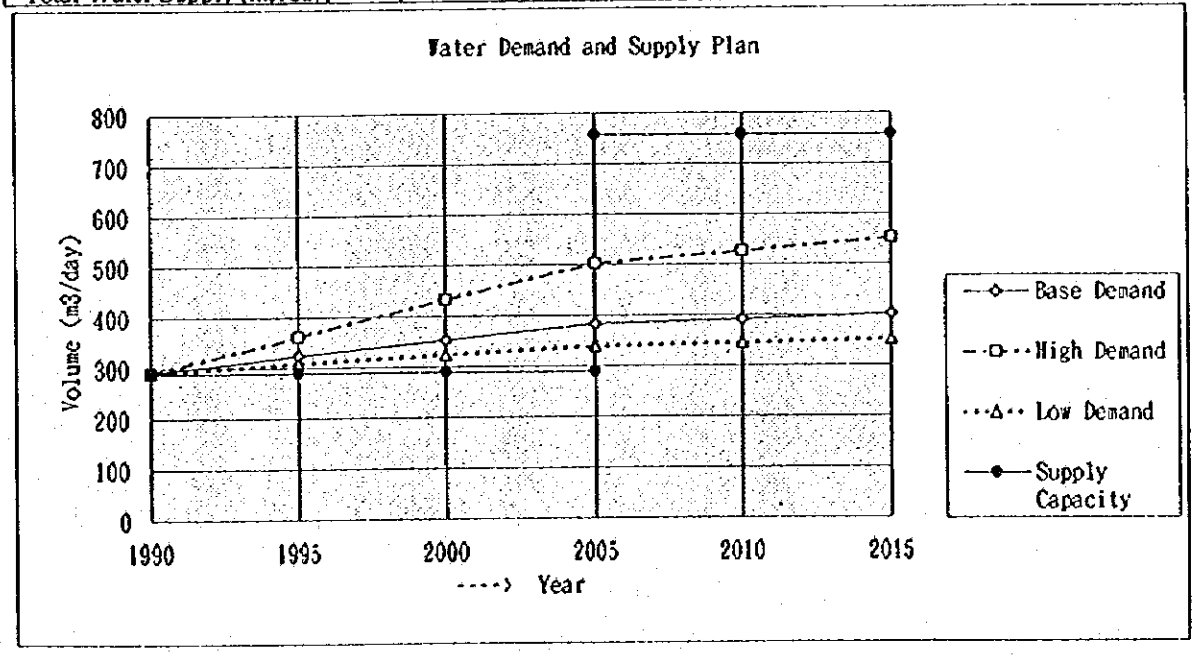
TOWNSHIP		DISTRICT		PROVINCE	
563	Katima-Mulilo	56	Sesheke	50	Western

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	1,017	(1) Base Projection	1,059	1,111	1,126
- Household	245	(2) High Projection	1,095	1,250	1,402
- Family Size	4.2	(3) Low Projection	1,050	1,074	1,080

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Zambezi River
Groundwater Potential	Fine sands, sandstones with some clays (Kalahari Group) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	153	159	163	167	168	169
	(High)	153	164	176	188	199	210
	(Low)	153	158	159	161	162	162
< Industrial Water >							
Water Demand (m3/day)	(Base)	99	121	144	166	173	179
	(High)	99	149	200	250	260	270
	(Low)	99	110	122	133	138	143
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	252	280	306	333	340	348
	(High)	252	314	376	438	459	480
	(Low)	252	268	281	294	300	305
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	289	322	352	383	391	400
	(High)	289	361	432	503	528	552
	(Low)	289	308	323	338	344	351
< Water Supply Program >							
- Existing Capacity (m3/day)		289	289	289	289	289	289
(1) Borehole (1 well)					468	468	468
- Total Water Supply (m3/day)		289	289	289	757	757	757



(36) Water Demand and Supply Plan (Namwala)

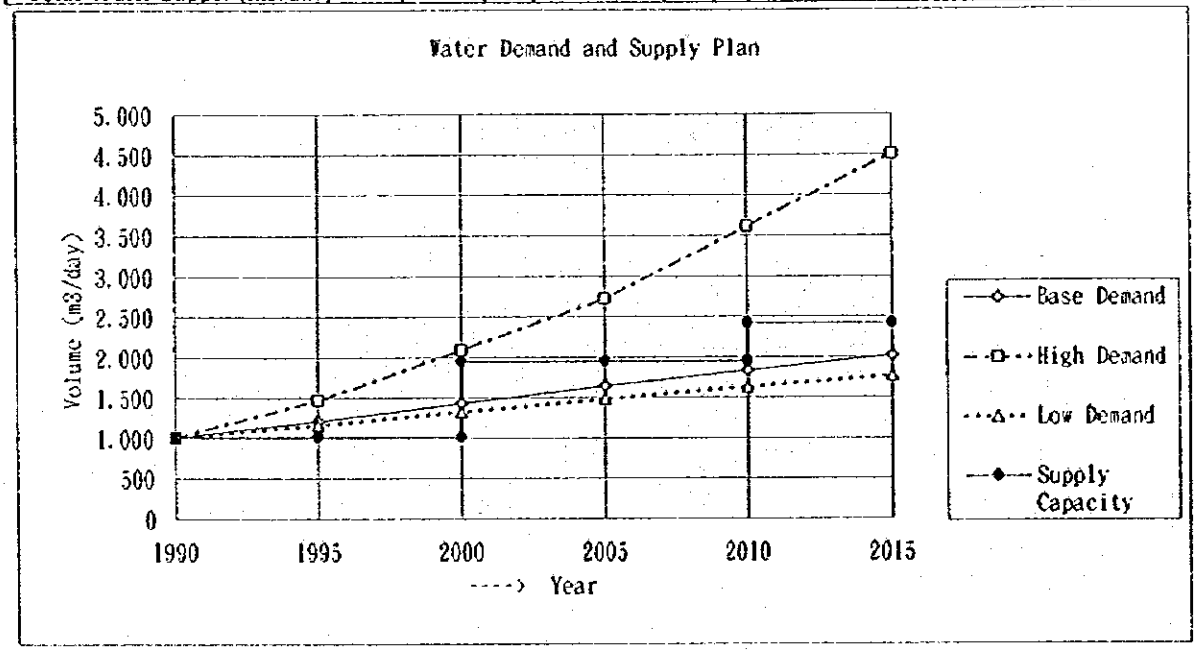
TOWNSHIP		DISTRICT		PROVINCE	
621	Namwala	62	Namwala	60	Southern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	3,772	(1) Base Projection	4,465	6,053	7,882
- Household	757	(2) High Projection	5,345	10,544	20,300
- Family Size	5.0	(3) Low Projection	4,428	5,800	7,175

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Namwala Water Supply	-DWA	unknown
Surface Water Source : Lukonde Tributary (Kafue River)		unknown
Groundwate		0

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kafue River, Lukomezi River
Groundwater Potential	Fine sands, sandstones with some clays (Kalahari Group) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	566	670	789	908	1,045	1,182
	(High)	566	802	1,192	1,582	2,313	3,045
	(Low)	566	664	767	870	973	1,076
< Industrial Water >							
Water Demand (m3/day)	(Base)	315	384	453	522	552	581
	(High)	315	472	630	787	831	875
	(Low)	315	349	384	418	441	463
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	881	1,054	1,242	1,430	1,597	1,763
	(High)	881	1,274	1,821	2,369	3,144	3,920
	(Low)	881	1,014	1,151	1,288	1,414	1,539
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	1,013	1,212	1,428	1,644	1,836	2,028
	(High)	1,013	1,465	2,095	2,724	3,616	4,508
	(Low)	1,013	1,166	1,323	1,481	1,626	1,770
< Water Supply Program >							
- Existing Capacity (m3/day)		1,013	1,013	1,013	1,013	1,013	1,013
(1) Boreholes (2 wells)				936	936	936	936
(2) Borehole (1 well)						468	468
- Total Water Supply (m3/day)		1,013	1,013	1,949	1,949	2,417	2,417



(37) Water Demand and Supply Plan (Itezhi-Tezhi)

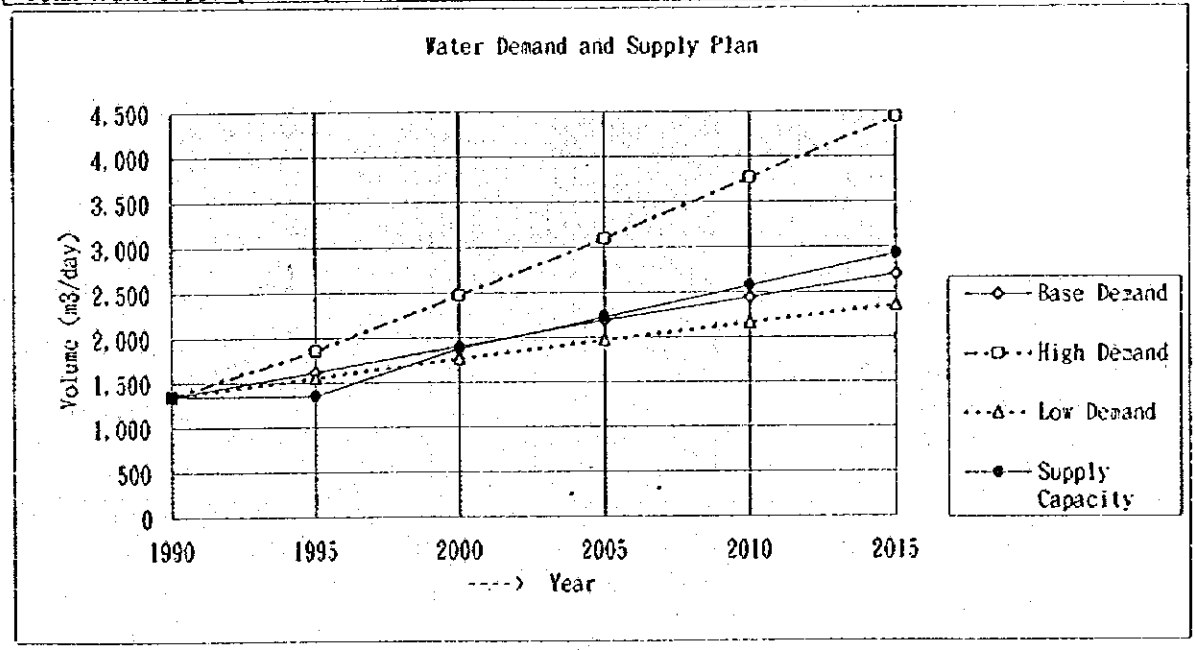
TOWNSHIP		DISTRICT		PROVINCE	
622	Itezhi-Tezhi	62	Namwala	60	Southern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	5,027	(1) Base Projection	5,950	8,067	10,504
- Household	1,086	(2) High Projection	6,544	10,939	17,950
- Family Size	4.6	(3) Low Projection	5,902	7,729	9,562

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
	-ZESCO	
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kafue River (Itezhi-Tezhi Dam)
Groundwater Potential	Shales, siltstones, sandstones (Undifferentiated Kundelungu) Safe Yield=35m3/day, radius of influence=750m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	754	893	1,051	1,210	1,393	1,576
	(High)	754	982	1,311	1,641	2,167	2,693
	(Low)	754	885	1,022	1,159	1,297	1,434
< Industrial Water >							
Water Demand (m3/day)	(Base)	420	512	604	696	735	774
	(High)	420	630	840	1,050	1,108	1,166
	(Low)	420	466	511	557	587	617
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	1,174	1,405	1,655	1,906	2,128	2,350
	(High)	1,174	1,612	2,151	2,691	3,275	3,859
	(Low)	1,174	1,351	1,534	1,716	1,884	2,051
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	1,350	1,615	1,904	2,192	2,447	2,702
	(High)	1,350	1,853	2,474	3,094	3,766	4,437
	(Low)	1,350	1,554	1,764	1,974	2,166	2,359
< Water Supply Program >							
- Existing Capacity (m3/day)		1,350	1,350	1,350	1,350	1,350	1,350
(1) Boreholes (15 wells)				525	525	525	525
(2) Boreholes (10 wells)					350	350	350
(3) Boreholes (10 wells)						350	350
(4) Boreholes (10 wells)							350
- Total Water Supply (m3/day)		1,350	1,350	1,875	2,225	2,375	2,925



(38) Water Demand and Supply Plan (Mazabuka)

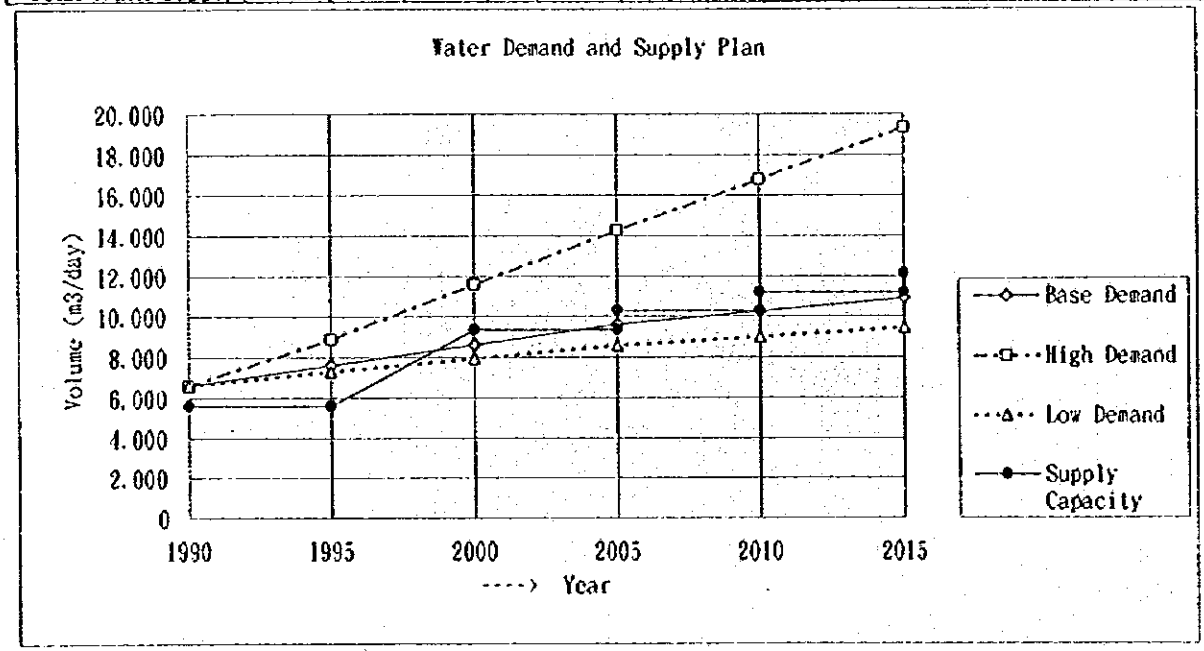
TOWNSHIP		DISTRICT		PROVINCE	
631	Mazabuka	63	Mazabuka	60	Southern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	24,596	(1) Base Projection	27,423	33,005	38,134
- Household	4,848	(2) High Projection	31,036	48,519	74,059
- Family Size	5.1	(3) Low Projection	27,207	31,624	34,691

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
-Mazabuka Tonship Water Supply	-Council	5,600
Surface Water Source ; Kafue River		2,100
Groundwater Source : Boreholes (3 production wells)		3,500

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kafue River, Kaleya River
Groundwater Potential	Alluvial sands and gravels (Alluvium) Safe Yield=468m3/day, radius of infuluence=1680m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	3,689	4,113	4,532	4,951	5,335	5,720
	(High)	3,689	4,655	5,967	7,278	9,193	11,109
	(Low)	3,689	4,081	4,412	4,744	4,974	5,204
< Industrial Water >							
Water Demand (m3/day)	(Base)	2,057	2,506	2,955	3,404	3,596	3,787
	(High)	2,057	3,083	4,108	5,134	5,419	5,704
	(Low)	2,057	2,280	2,502	2,725	2,872	3,018
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	5,746	6,619	7,487	8,355	8,931	9,507
	(High)	5,746	7,738	10,075	12,412	14,612	16,813
	(Low)	5,746	6,361	6,915	7,469	7,845	8,222
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	6,608	7,612	8,610	9,608	10,271	10,933
	(High)	6,608	8,899	11,586	14,274	16,804	19,335
	(Low)	6,608	7,315	7,952	8,589	9,022	9,455
< Water Supply Program >							
- Existing Capacity (m3/day)		5,600	5,600	5,600	5,600	5,600	5,600
(1) Boreholes (8 wells)				3,744	3,744	3,744	3,744
(2) Boreholes (2 wells)					936	936	936
(3) Boreholes (2 wells)						936	936
(4) Boreholes (2 wells)							936
- Total Water Supply (m3/day)		5,600	5,600	9,344	10,280	11,216	12,152



(39) Water Demand and Supply Plan (Magoye)

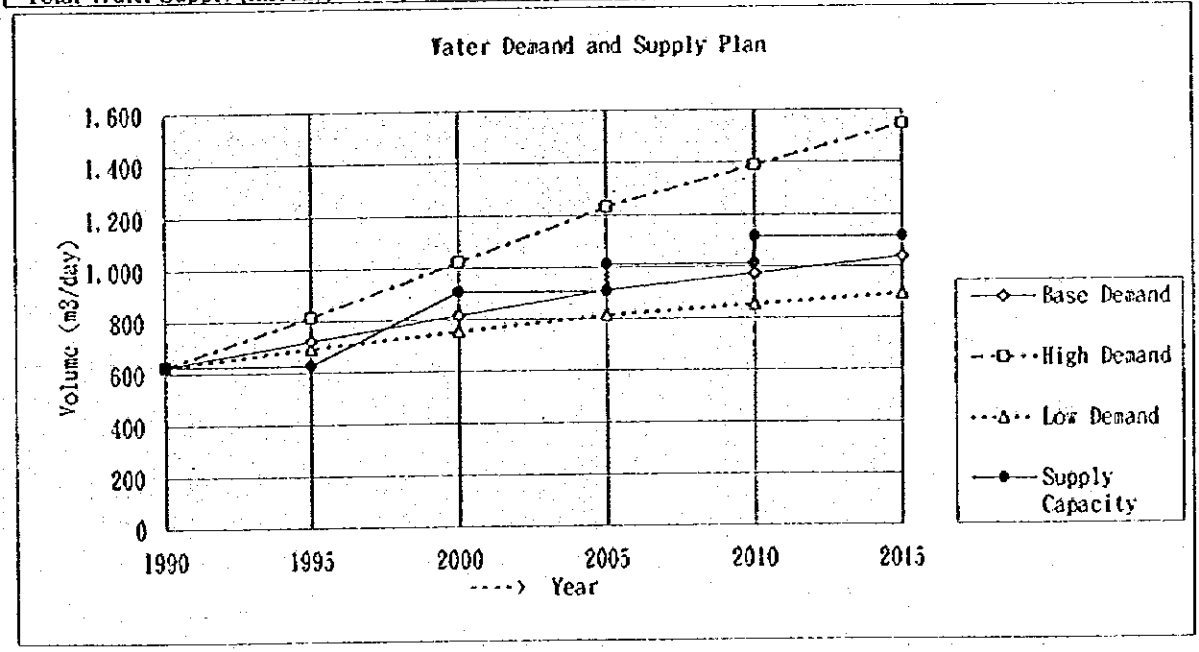
TOWNSHIP		DISTRICT		PROVINCE	
632	Magoye	63	Mazabuka	60	Southern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	2,331	(1) Base Projection	2,599	3,128	3,614
- Household	498	(2) High Projection	2,778	3,891	5,352
- Family Size	4.7	(3) Low Projection	2,579	2,997	3,288

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Magoye River, Ngwezi River, Kaleya River
Groundwater Potential	Metasediments and metavolcanics (Metamorphic Rocks) Safe Yield=35m3/day, radius of infuluence=750m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	350	390	430	469	506	542
	(High)	350	417	500	584	693	803
	(Low)	350	387	418	450	471	493
< Industrial Water >							
Water Demand (m3/day)	(Base)	195	238	280	323	341	359
	(High)	195	292	390	487	514	541
	(Low)	195	216	238	259	273	286
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	545	628	710	792	847	901
	(High)	545	709	890	1,071	1,207	1,344
	(Low)	545	603	656	709	744	779
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	626	722	816	911	974	1,036
	(High)	626	815	1,023	1,231	1,388	1,545
	(Low)	626	694	754	815	855	896
< Water Supply Program >							
- Existing Capacity (m3/ day)		626	626	626	626	626	626
(1) Boreholes (8 wells)				280	280	280	280
(2) Boreholes (3 wells)					105	105	105
(3) Boreholes (3 wells)						105	105
- Total Water Supply (m3/day)		626	626	906	1,011	1,116	1,116



(40) Water Demand and Supply Plan (Nakambala)

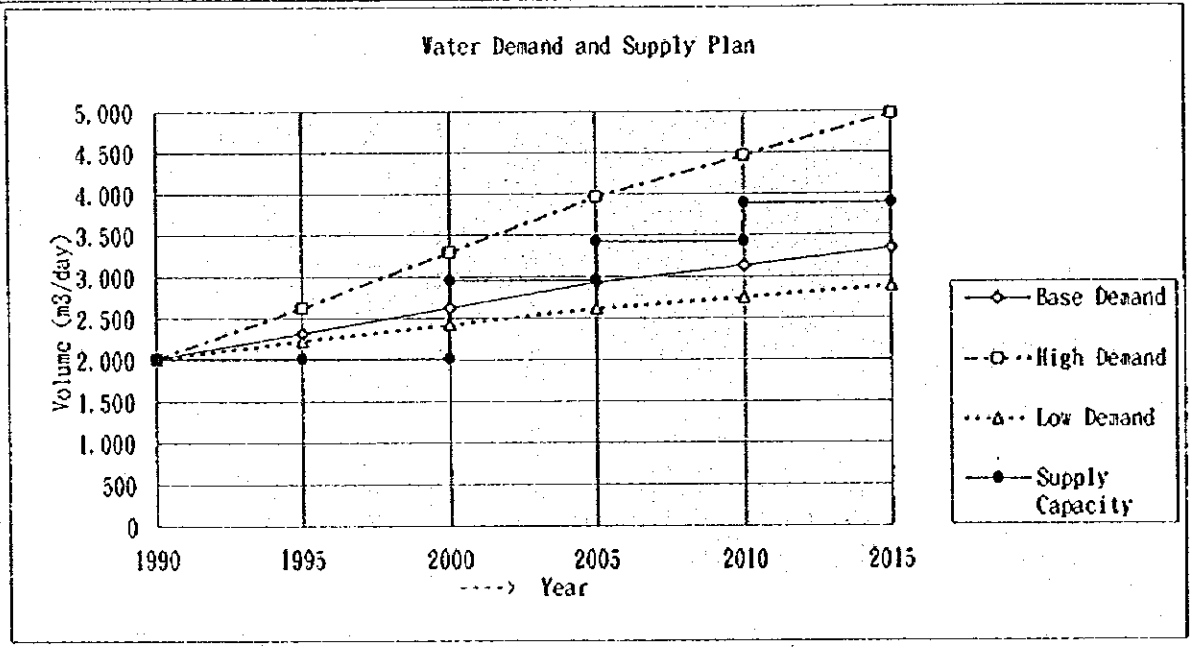
TOWNSHIP		DISTRICT		PROVINCE	
633	Nakambala	63	Mazabuka	60	Southern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	7,503	(1) Base Projection	8,365	10,068	11,633
- Household	1,390	(2) High Projection	8,942	12,524	17,228
- Family Size	5.4	(3) Low Projection	8,300	9,647	10,583

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Surface Water Source : Kafue River		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kafue River
Groundwater Potential	Alluvial sands and gravels (Alluvium) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m,ϕ=30cm

WATER DEMAND AND SUPPLY							
Items		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	1,125	1,255	1,382	1,510	1,628	1,745
	(High)	1,125	1,341	1,610	1,879	2,231	2,584
	(Low)	1,125	1,245	1,346	1,447	1,517	1,587
< Industrial Water >							
Water Demand (m3/day)	(Base)	628	765	901	1,038	1,097	1,155
	(High)	628	941	1,253	1,566	1,653	1,740
	(Low)	628	696	763	831	876	921
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	1,753	2,019	2,284	2,548	2,724	2,900
	(High)	1,753	2,282	2,863	3,445	3,884	4,324
	(Low)	1,753	1,941	2,109	2,278	2,393	2,508
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	2,016	2,322	2,626	2,930	3,133	3,335
	(High)	2,016	2,624	3,293	3,961	4,467	4,973
	(Low)	2,016	2,232	2,426	2,620	2,752	2,885
< Water Supply Program >							
- Existing Capacity (m3/day)		2,016	2,016	2,016	2,016	2,016	2,016
(1) Boreholes (2 wells)				936	936	936	936
(2) Borehole (1 well)					468	468	468
(3) Borehole (1 well)						468	468
- Total Water Supply (m3/day)		2,016	2,016	2,952	3,420	3,888	3,888



(41) Water Demand and Supply Plan (Nega-Nega)

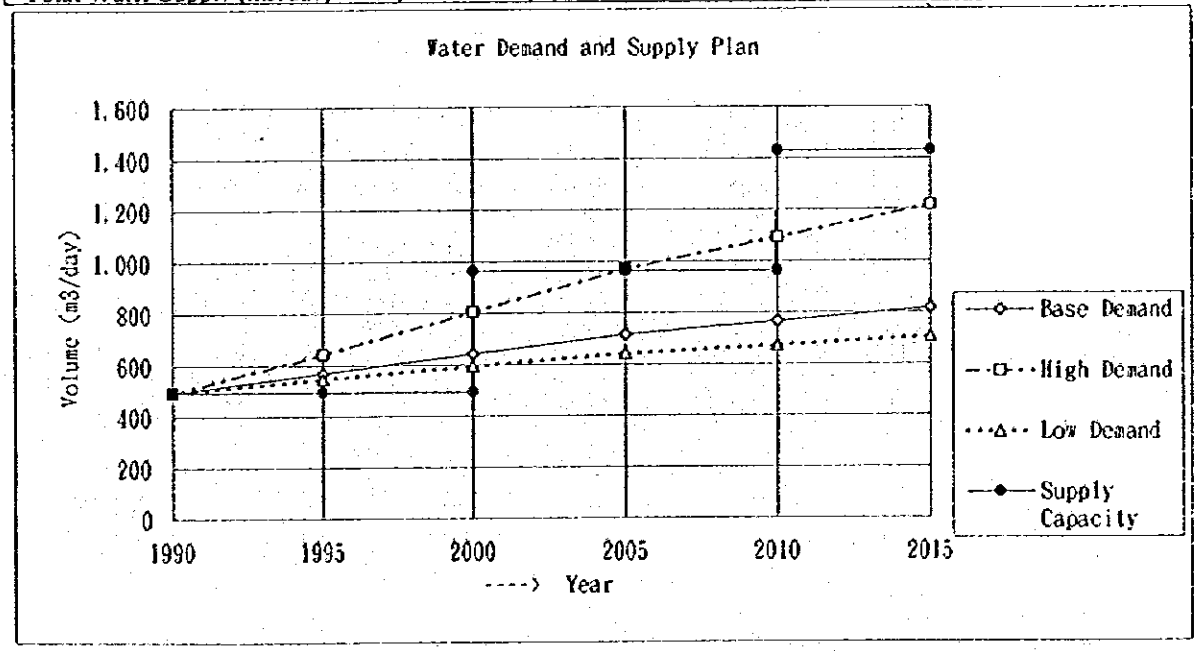
TOWNSHIP		DISTRICT		PROVINCE	
634	Nega-nega	63	Mazabuka	60	Southern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	1,836	(1) Base Projection	2,047	2,464	2,847
- Household	445	(2) High Projection	2,188	3,065	4,216
- Family Size	4.1	(3) Low Projection	2,031	2,361	2,590

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kafue River
Groundwater Potential	Alluvial sands and gravels (Alluvium) Safe Yield=468m3/day, radius of influence=1680m, Borehole:L=60m β=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	275	307	338	370	398	427
	(High)	275	328	394	460	546	632
	(Low)	275	305	329	354	371	389
< Industrial Water >							
Water Demand (m3/day)	(Base)	154	187	221	254	269	283
	(High)	154	230	307	383	405	426
	(Low)	154	170	187	203	215	226
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	429	494	559	624	667	710
	(High)	429	559	701	843	951	1,058
	(Low)	429	475	516	557	586	615
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	494	569	643	717	767	817
	(High)	494	642	806	969	1,093	1,217
	(Low)	494	546	593	641	674	707
< Water Supply Program >							
- Existing Capacity (m3/day)		494	494	494	494	494	494
(1) Borehole (1 well)				468	468	468	468
(2) Borehole (1 well)						468	468
- Total Water Supply (m3/day)		494	494	962	962	1,430	1,430



(42) Water Demand and Supply Plan (Kafue-Gorge)

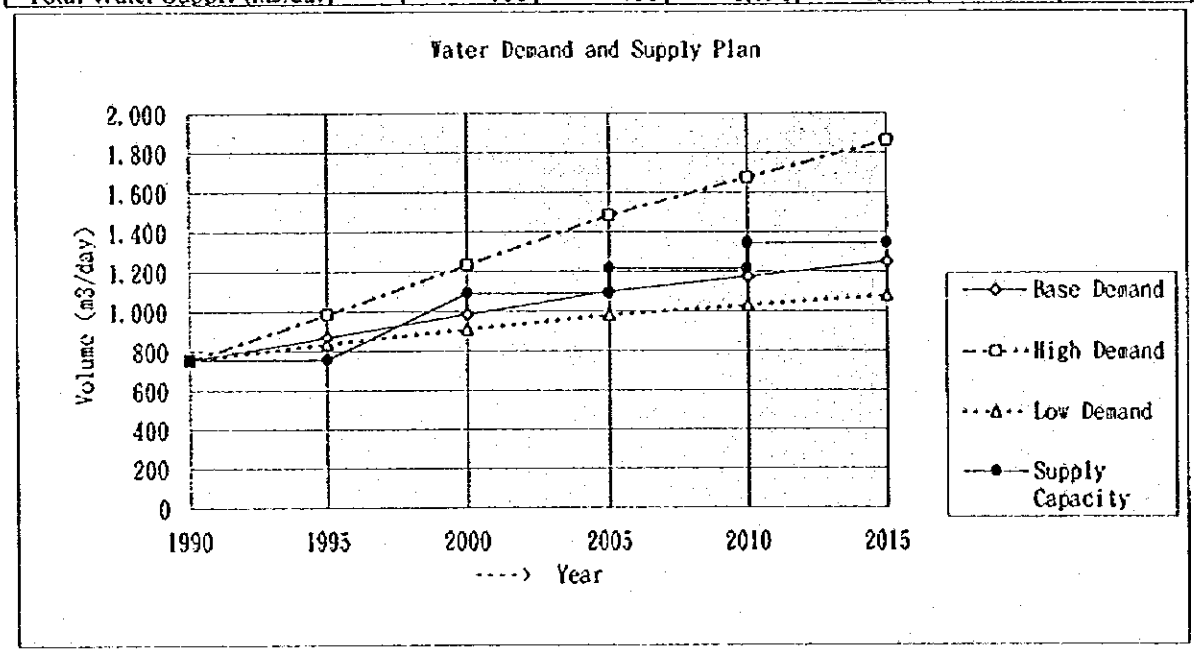
TOWNSHIP		DISTRICT		PROVINCE	
635	Kafue-gorge	63	Mazabuka	60	Southern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	2,813	(1) Base Projection	3,136	3,775	4,361
- Household	713	(2) High Projection	3,352	4,696	6,459
- Family Size	3.9	(3) Low Projection	3,112	3,617	3,968

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Kafue River
Groundwater Potential	Granitic gneiss, migmatites, schists (Basement Gneiss) Safe Yield=42m3/day, radius of influence=810m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	422	470	518	566	610	654
	(High)	422	503	604	704	837	969
	(Low)	422	467	505	543	569	595
< Industrial Water >							
Water Demand (m3/day)	(Base)	235	286	338	389	411	433
	(High)	235	352	470	587	620	652
	(Low)	235	260	286	311	328	345
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	657	757	856	955	1,021	1,087
	(High)	657	855	1,073	1,291	1,456	1,621
	(Low)	657	727	790	854	897	940
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	755	870	984	1,099	1,174	1,250
	(High)	755	983	1,234	1,485	1,675	1,864
	(Low)	755	836	909	982	1,031	1,081
< Water Supply Program >							
- Existing Capacity (m3/day)		755	755	755	755	755	755
(1) Boreholes (8 wells)				336	336	336	336
(2) Boreholes (2 wells)					126	126	126
(3) Boreholes (2 wells)						126	126
- Total Water Supply (m3/day)		755	755	1,091	1,217	1,343	1,343



(43) Water Demand and Supply Plan (Chikankata)

TOWNSHIP		DISTRICT		PROVINCE	
636	Chikankata	63	Mazabuka	60	Southern

1990 CENSUS POPULATION AND FUTURE PROJECTION					
1990 Census Data		Projection Scenarios	1995	2005	2015
- Population	3,912	(1) Base Projection	4,362	5,249	6,065
- Household	662	(2) High Projection	4,662	6,530	8,983
- Family Size	5.9	(3) Low Projection	4,328	5,030	5,518

CURRENT DOMESTIC WATER SUPPLY PROJECT		
Name of Water Supply Project	Type of Managing Body	Water Supply Volume (m3/day)
Surface Water Source :		
Groundwater Source :		

WATER RESOURCES POTENTIAL	
Surface Water Potential	Lusitu River
Groundwater Potential	Metasediments and metavolcanics (Metamorphic rocks) Safe Yield=35m3/day, radius of influence=750m, Borehole:L=60m,ø=30cm

WATER DEMAND AND SUPPLY							
I t e m s		1990	1995	2000	2005	2010	2015
< Domestic Water >							
Consumption Rate (lit/cap./day)		150	150	150	150	150	150
Water Demand (m3/day)	(Base)	587	654	721	787	849	910
	(High)	587	699	839	980	1,163	1,347
	(Low)	587	649	702	755	791	828
< Industrial Water >							
Water Demand (m3/day)	(Base)	327	398	470	541	572	602
	(High)	327	490	653	816	862	907
	(Low)	327	362	398	433	457	480
< Domestic & Industrial Water >							
Cities & Municipalities Gross Water Demand (m3/day)	(Base)	914	1,053	1,190	1,328	1,420	1,512
	(High)	914	1,189	1,492	1,796	2,025	2,254
	(Low)	914	1,012	1,100	1,188	1,248	1,308
- Water Loss Rate (%)		15	15	15	15	15	15
Cities & Municipalities Net Water Demand (m3/day)	(Base)	1,051	1,211	1,369	1,528	1,633	1,739
	(High)	1,051	1,368	1,716	2,065	2,329	2,593
	(Low)	1,051	1,163	1,264	1,366	1,435	1,504
< Water Supply Program >							
- Existing Capacity (m3/day)		1,051	1,051	1,051	1,051	1,051	1,051
(1) Boreholes (10 wells)				350	350	350	350
(2) Boreholes (5 wells)					175	175	175
(3) Boreholes (5 wells)						175	175
(4) Boreholes (5 wells)							175
- Total Water Supply (m3/day)		1,051	1,051	1,401	1,576	1,751	1,926