



BACKGROUND PAPER 9 (PHASE II)

# Torrents and Trickles: Irrigation Spending Needs in Africa

CROSS-COUNTRY ANNEX

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## About AICD



This study is a product of the Africa Infrastructure Country Diagnostic (AICD), a project designed to expand the world's knowledge of physical infrastructure in Africa. AICD will provide a baseline against which future improvements in infrastructure services can be measured, making it possible to monitor the results achieved from donor support. It should also provide a better empirical foundation for prioritizing investments and designing policy reforms in Africa's infrastructure sectors.



AICD is based on an unprecedented effort to collect detailed economic and technical data on African infrastructure. The project has produced a series of reports (such as this one) on public expenditure, spending needs, and sector performance in each of the main infrastructure sectors—energy, information and communication technologies, irrigation, transport, and water and sanitation. *Africa's Infrastructure—A Time for Transformation*, published by the World Bank in November 2009, synthesizes the most significant findings of those reports.



AICD was commissioned by the Infrastructure Consortium for Africa after the 2005 G-8 summit at Gleneagles, which recognized the importance of scaling up donor finance for infrastructure in support of Africa's development.



The first phase of AICD focused on 24 countries that together account for 85 percent of the gross domestic product, population, and infrastructure aid flows of Sub-Saharan Africa. The countries are: Benin, Burkina Faso, Cape Verde, Cameroon, Chad, Côte d'Ivoire, the Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, South Africa, Sudan, Tanzania, Uganda, and Zambia. Under a second phase of the project, coverage is expanding to include as many other African countries as possible.



Consistent with the genesis of the project, the main focus is on the 48 countries south of the Sahara that face the most severe infrastructure challenges. Some components of the study also cover North African countries so as to provide a broader point of reference. Unless otherwise stated,



therefore, the term “Africa” will be used throughout this report as a shorthand for “Sub-Saharan Africa.”



The World Bank is implementing AICD with the guidance of a steering committee that represents the African Union, the New Partnership for Africa’s Development (NEPAD), Africa’s regional economic communities, the African Development Bank, the Development Bank of Southern Africa, and major infrastructure donors.



Financing for AICD is provided by a multidonor trust fund to which the main contributors are the U.K.’s Department for International Development, the Public Private Infrastructure Advisory Facility, Agence Française de Développement, the European Commission, and Germany’s KfW Entwicklungsbank. The Sub-Saharan Africa Transport Policy Program and the Water and Sanitation Program provided technical support on data collection and analysis pertaining to their respective sectors. A group of distinguished peer reviewers from policy-making and academic circles in Africa and beyond reviewed all of the major outputs of the study to ensure the technical quality of the work.



The data underlying AICD’s reports, as well as the reports themselves, are available to the public through an interactive Web site, [www.infrastructureafrica.org](http://www.infrastructureafrica.org), that allows users to download customized data reports and perform various simulations. Inquiries concerning the availability of data sets should be directed to the editors at the World Bank in Washington, DC.



Table 1 Description of dams (large-scale analysis)

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Central	ANGOLA	Cambambe	REH	180.0	20	-9.8	14.5
Central	ANGOLA	Capanda	REH	520.0	60	-11.4	17.6
Central	ANGOLA	Chicapa	OPR	4.0	1	-8.8	20.5
Central	ANGOLA	Colui	OPR	0.0	11	-14.7	16.0
Central	ANGOLA	Cunje II	OPR	0.0	87	-11.8	17.5
Central	ANGOLA	Dungo	OPR	0.0	57	-13.0	14.2
Central	ANGOLA	Gove	PLN	60.0	2,574	-13.5	15.9
Central	ANGOLA	Lomaum	REH	35.0	1	-12.7	14.5
Central	ANGOLA	Luachimo	REH	10.0	1	-9.7	20.6
Central	ANGOLA	Mabubas	REH	18.0	62	-8.5	13.7
Central	ANGOLA	Malonga	OPR	0.0	12	-15.3	15.9
Central	ANGOLA	Matala	REH	40.8	78	-14.7	15.0
Central	ANGOLA	Medio Kwanza	PLN	6,700.0	2,000	-9.8	15.5
Central	CAMEROON	Bamendjin	OPR	0.0	2,000	5.7	10.5
Central	CAMEROON	Bini a Warak	PLN	75.0	1,000	7.5	13.9
Central	CAMEROON	EDEA	OPR	154.2	30	3.8	10.1
Central	CAMEROON	Kader	PLN	12.0	2	4.9	14.6
Central	CAMEROON	Kikot	PLN	500.0	60	4.2	11.0
Central	CAMEROON	LAGDO	OPR	80.0	7,700	9.1	13.7
Central	CAMEROON	Lom Pangar	PLN	56.0	7,500	5.4	13.5
Central	CAMEROON	Mape	OPR	0.0	3,300	6.0	11.3
Central	CAMEROON	Mbakaou	OPR	0.0	2,600	6.3	12.8
Central	CAMEROON	Memve Ele	PLN	202.0	50	2.3	10.3
Central	CAMEROON	Njock-Poume	PLN	150.0	10	3.4	11.4
Central	CAMEROON	SONG LOULOU	OPR	396.0	10	4.1	10.5
Central	CAMEROON	Song Ndong	PLN	280.0	15	3.1	10.2
Central	DRC	Bia	OPR	0.0	5	-11.2	27.2
Central	DRC	BUDANA	OPR	13.5	5	1.6	30.2
Central	DRC	Busanga	PLN	260.0	2	-10.2	25.4
Central	DRC	Grand Inga	PLN	6,000.0	100	-5.5	13.6
Central	DRC	Inga I I	OPR	890.0	100	-4.5	13.6
Central	DRC	Katobo	OPR	0.0	5	-5.7	13.6
Central	DRC	Koni	OPR	42.1	28	-10.8	27.2
Central	DRC	Mobay	OPR	11.5	5	4.4	18.8
Central	DRC	Mwadingusha	OPR	68.0	2	-9.0	26.0
Central	DRC	Nseki	OPR	186.3	1	-10.3	25.4
Central	DRC	Nzilo	OPR	200.0	2	-10.5	25.5
Central	DRC	PIANA MWANGA	OPR	29.5	2	-7.7	28.2
Central	DRC	Ruzizi I (** Rwanda & Burun	OPR	229.5	1	-2.5	28.9
Central	DRC	Solen II	OPR	13.8	5	1.6	30.2

IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Central	DRC	Tshopo	REH	19.5	5	0.5	25.2
Central	DRC	Zongo Songa	REH	225.0	1	-5.3	15.2
Central	GABON	Kinguélé	REH	58.0	8	0.5	10.3
Central	GABON	Tchimbele	OPR	0.0	220	0.4	10.3
Eastern	BURUNDI	Jiji 03	PLN	16.0	10	-3.9	29.8
Eastern	BURUNDI	Kaganuzi Complex	PLN	39.0	35	-3.0	29.6
Eastern	BURUNDI	Mpanda	PLN	10.0	10	-3.2	29.4
Eastern	BURUNDI	Mule	PLN	17.0	10	4.0	29.7
Eastern	BURUNDI	Rusumo Falls (Burundi, Rwan	PLN	20.7	17,000	-2.4	30.8
Eastern	BURUNDI	Rwegura	REH	18.0	2	-2.9	29.5
Eastern	ETHIOPIA	ALELTU EAST & WEST	PLN	454.0	998	9.8	38.8
Eastern	ETHIOPIA	Alwero	OPR	0.0	75	7.9	34.5
Eastern	ETHIOPIA	Baro 1	PLN	166.0	480	8.2	35.2
Eastern	ETHIOPIA	Baro 2 + Genji	PLN	470.0	300	8.2	35.0
Eastern	ETHIOPIA	Beles	PLN	460.0	300	11.3	36.4
Eastern	ETHIOPIA	Border	PLN	1,200.0	900	11.2	35.1
Eastern	ETHIOPIA	Finchaa (I-IV)	OPR	133.2	790	9.6	37.4
Eastern	ETHIOPIA	Geba (1 & 2)	PLN	115.0	1,392	8.3	36.1
Eastern	ETHIOPIA	Genale III	PLN	258.0	1,000	4.3	42.0
Eastern	ETHIOPIA	Gilbet Gibe II	OPR	192.0	657	7.9	37.4
Eastern	ETHIOPIA	GOJEB	PLN	153.0	757	7.2	36.9
Eastern	ETHIOPIA	HAELIE & WERABESSA	PLN	96.0	2,900	8.6	37.2
Eastern	ETHIOPIA	Karadobi	PLN	1,600.0	17,300	10.3	37.0
Eastern	ETHIOPIA	Legadadi (Main)	OPR	0.0	38	9.1	39.0
Eastern	ETHIOPIA	Mandaya	PLN	2,000.0	1,000	10.0	35.6
Eastern	ETHIOPIA	Neshe	PLN	97.0	363	9.6	37.1
Eastern	ETHIOPIA	TEKEZE	PLN	300.0	5,300	13.3	38.7
Eastern	ETHIOPIA	Tis Abay I	OPR	85.0	10	11.5	37.6
Eastern	KENYA	Ewaso Ngiro	PLN	180.0	50	0.6	36.9
Eastern	KENYA	GITARU	OPR	228.7	20	-0.6	37.7
Eastern	KENYA	KAMBURU	OPR	94.2	150	-0.9	37.6
Eastern	KENYA	KIAMBERE	OPR	144.0	585	-0.8	37.9
Eastern	KENYA	KINDARUMA	OPR	44.0	16	-0.8	37.8
Eastern	KENYA	Low Grand Falls	PLN	140.0	80	-0.4	37.9
Eastern	KENYA	Magwagwa	PLN	120.0	10	-0.5	35.0
Eastern	KENYA	MASINGA	OPR	40.0	1,560	-0.9	37.5
Eastern	KENYA	MUNYU	REH	40.0	20	-0.8	36.5
Eastern	KENYA	Mutonga	PLN	60.0	20	-0.4	37.9
Eastern	KENYA	Sasumua	OPR	0.0	13	-0.8	36.7
Eastern	KENYA	Sondu Miru	PLN	60.0	35	0.0	34.9
Eastern	KENYA	TANA	OPR	14.4	10	-0.8	37.3
Eastern	KENYA	Thika	OPR	0.0	70	-0.8	37.0
Eastern	KENYA	TURKWEL	OPR	107.4	1,645	1.9	35.3
Eastern	RWANDA	Mukungwa	OPR	12.4	5	-1.6	29.6
Eastern	RWANDA	Ntaruka	REH	11.5	5	-2.0	29.4

## IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Eastern	RWANDA	Panzi (**DCR)	PLN	19.0	5	-7.1	18.0
Eastern	TANZANIA	KAGERA RIVER	REH	54.0	5	-1.2	31.1
Eastern	TANZANIA	Kidatu	OPR	200.0	125	-7.6	36.9
Eastern	TANZANIA	Lower Kihansi	OPR	180.0	1	-8.8	35.8
Eastern	TANZANIA	Mandera	PLN	21.0	5	-5.5	38.2
Eastern	TANZANIA	Masigira	PLN	118.0	100	-9.8	35.2
Eastern	TANZANIA	Mpanga	PLN	144.0	90	-7.8	38.0
Eastern	TANZANIA	Mtera	OPR	80.0	3,200	-7.1	35.9
Eastern	TANZANIA	Nyumba Ya Mungu	OPR	0.0	870	-3.6	37.5
Eastern	TANZANIA	Pangani	OPR	68.0	875	-5.4	38.7
Eastern	TANZANIA	Ruhudji	PLN	358.0	200	-9.5	35.2
Eastern	TANZANIA	Stiegler Gorge (I+II+III)	PLN	1,244.0	600	-7.8	37.9
Eastern	TANZANIA	Upper Kihansi	PLN	120.0	60	-8.4	36.4
Eastern	UGANDA	Ayago North	PLN	304.0	60	1.8	32.5
Eastern	UGANDA	BUGOYE	PLN	11.0	5	0.3	30.1
Eastern	UGANDA	Bujagali # 5	PLN	250.0	1	0.5	33.1
Eastern	UGANDA	Bygoe	PLN	13.0	2	0.3	30.1
Eastern	UGANDA	ISHASHA RIVER	PLN	10.0	5	-0.9	29.7
Eastern	UGANDA	KALAGALA	REH	450.0	200	0.6	33.1
Eastern	UGANDA	Karuma	REH	200.0	100	2.3	32.3
Eastern	UGANDA	Kiira	OPR	205.0	100	0.4	33.2
Eastern	UGANDA	Masindi I	PLN	360.0	150	1.7	31.7
Eastern	UGANDA	MUBUKU-3	OPR	10.5	5	0.2	30.1
Eastern	UGANDA	Murchison Base 2	PLN	222.0	100	2.3	31.6
Eastern	UGANDA	MUZIZI	PLN	10.0	5	1.0	30.5
Eastern	UGANDA	NARUBALE	OPR	180.0	10	0.4	33.2
Gulf of Guinea	BENIN	Adjaralla 50 % (*Togo **)	PLN	49.0	10	6.8	1.6
Gulf of Guinea	BENIN	Assante	PLN	36.0	980	8.2	2.3
Gulf of Guinea	BENIN	Batchanga	PLN	15.0	350	11.2	1.8
Gulf of Guinea	BENIN	Ilauko	OPR	0.0	24	8.1	2.4
Gulf of Guinea	BENIN	Ketou	PLN	72.0	1,550	7.4	2.6
Gulf of Guinea	BENIN	Olougbe	PLN	42.0	1,250	8.8	2.3
Gulf of Guinea	GHANA	Asouso (Asuaso?)	PLN	51.0	30	5.3	-1.9
Gulf of Guinea	GHANA	Awisam	PLN	88.0	50	6.5	-1.0
Gulf of Guinea	GHANA	Barekese	OPR	0.0	34	6.8	-1.7
Gulf of Guinea	GHANA	Bontanga	OPR	0.0	25	9.6	-1.0
Gulf of Guinea	GHANA	Bui dam	PLN	399.0	6,000	8.2	-2.2
Gulf of Guinea	GHANA	Hemang	PLN	75.0	20	5.2	-1.6
Gulf of Guinea	GHANA	Juale	PLN	100.0	100	8.7	0.1
Gulf of Guinea	GHANA	Kanyanbia	OPR	0.0	5	10.8	-1.7
Gulf of Guinea	GHANA	Kojokrom	PLN	36.0	15	6.2	-2.6
Gulf of Guinea	GHANA	Kpong dam / Dikes	OPR	182.8	100	6.1	0.1
Gulf of Guinea	GHANA	Kulpawn	OPR	0.0	6	10.1	-1.6
Gulf of Guinea	GHANA	PWALUGU	PLN	48.0	5	10.6	-0.9
Gulf of Guinea	GHANA	Sedukrom	PLN	26.0	8	6.0	-2.6

IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Gulf of Guinea	GHANA	Sissili	OPR	0.0	10	10.8	-1.5
Gulf of Guinea	GHANA	Tanoso	PLN	30.0	12	5.4	-2.7
Gulf of Guinea	GHANA	Tono	OPR	0.0	77	10.9	-1.3
Gulf of Guinea	GHANA	Veá	OPR	0.0	17	10.9	-0.9
Gulf of Guinea	GUINEA	Amaria I	PLN	300.0	100	9.5	-10.3
Gulf of Guinea	GUINEA	Banieya	OPR	0.0	223	10.0	-13.0
Gulf of Guinea	GUINEA	Bouréa	PLN	161.0	200	11.7	-10.7
Gulf of Guinea	GUINEA	Donkea	REH	14.0	5	10.2	-13.8
Gulf of Guinea	GUINEA	Fello Sounga	PLN	82.0	100	11.6	-13.3
Gulf of Guinea	GUINEA	Fomi	PLN	90.0	110	10.5	-9.7
Gulf of Guinea	GUINEA	Garafir	OPR	75.0	90	10.5	-12.7
Gulf of Guinea	GUINEA	Gozoguezia	PLN	48.0	50	7.8	-9.3
Gulf of Guinea	GUINEA	Grandes Chutes	REH	14.0	15	9.9	-13.1
Gulf of Guinea	GUINEA	Kale	OPR	0.0	14	9.9	-13.1
Gulf of Guinea	GUINEA	Kassa	PLN	118.0	90	10.0	-12.0
Gulf of Guinea	GUINEA	Koukoutamba	PLN	281.0	200	11.1	-11.3
Gulf of Guinea	GUINEA	Morisanako	PLN	100.0	80	10.2	-8.7
Gulf of Guinea	GUINEA	Souapiti II	PLN	750.0	400	10.4	-13.2
Gulf of Guinea	GUINEA	Téné	PLN	76.0	65	11.1	-11.6
Gulf of Guinea	GUINEA	Tiopo	PLN	120.0	100	11.3	-13.8
Gulf of Guinea	IVORYCOAST	Ayame	OPR	50.8	900	5.6	-3.2
Gulf of Guinea	IVORYCOAST	Bandama	OPR	0.0	5	9.6	-5.3
Gulf of Guinea	IVORYCOAST	Boloubre (Bouloubre)	PLN	156.0	80	5.5	-6.5
Gulf of Guinea	IVORYCOAST	BUYO	OPR	137.5	8,300	6.2	-7.0
Gulf of Guinea	IVORYCOAST	Gbemou	OPR	0.0	18	9.6	-6.5
Gulf of Guinea	IVORYCOAST	Gibo-Popoli (Gribo-Popoli)	PLN	112.0	100	5.7	-6.6
Gulf of Guinea	IVORYCOAST	Kokumbo	PLN	78.0	70	7.7	-5.2
Gulf of Guinea	IVORYCOAST	Kossou	OPR	161.1	27,675	7.0	-5.5
Gulf of Guinea	IVORYCOAST	Koua	OPR	0.0	17	7.9	-2.9
Gulf of Guinea	IVORYCOAST	Loka	OPR	0.0	22	7.9	-4.8
Gulf of Guinea	IVORYCOAST	Malamasso	PLN	90.0	150	5.8	-3.4
Gulf of Guinea	IVORYCOAST	Missouli	PLN	21.0	30	7.7	-6.2
Gulf of Guinea	IVORYCOAST	Nabyon	OPR	0.0	14	7.7	-5.2
Gulf of Guinea	IVORYCOAST	Nafoun	OPR	0.0	60	9.6	-6.4
Gulf of Guinea	IVORYCOAST	Ndieliesso	PLN	90.0	50	5.9	-3.4
Gulf of Guinea	IVORYCOAST	San Pedro	OPR	0.0	25	6.0	-6.7
Gulf of Guinea	IVORYCOAST	Singrobo	PLN	80.0	40	6.1	-4.9
Gulf of Guinea	IVORYCOAST	Solo Mougou	OPR	0.0	14	9.6	-5.6
Gulf of Guinea	IVORYCOAST	SOUBRE	PLN	328.0	5,000	5.8	-6.6
Gulf of Guinea	IVORYCOAST	Taabo	OPR	241.8	69	6.2	-5.1
Gulf of Guinea	IVORYCOAST	Tayaboui	PLN	100.0	80	7.1	-7.1
Gulf of Guinea	LIBERIA	Mano 2	PLN	74.0	30	6.9	-10.6
Gulf of Guinea	LIBERIA	Mount Cofee	REH	64.0	30	6.5	-10.7
Gulf of Guinea	LIBERIA	SP-B1	PLN	120.0	60	7.0	-10.3
Gulf of Guinea	LIBERIA	Via Storage	PLN	142.0	75	7.2	-9.8

IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Gulf of Guinea	NIGERIA	Ankwil	OPR	0.0	31	9.8	9.0
Gulf of Guinea	NIGERIA	Asa	OPR	0.0	43	8.4	4.6
Gulf of Guinea	NIGERIA	Asejire	OPR	0.0	33	7.4	4.1
Gulf of Guinea	NIGERIA	Bakolori	OPR	0.0	450	12.5	6.2
Gulf of Guinea	NIGERIA	Balanga	OPR	0.0	73	9.9	11.6
Gulf of Guinea	NIGERIA	Biu	OPR	0.0	12	10.6	12.1
Gulf of Guinea	NIGERIA	Bosso	OPR	0.0	5	9.1	6.1
Gulf of Guinea	NIGERIA	Challawa Gorge Dam	OPR	0.0	930	11.7	8.0
Gulf of Guinea	NIGERIA	Dadin Kova	REH	35.0	2,855	10.3	11.5
Gulf of Guinea	NIGERIA	Doma	OPR	0.0	38	8.3	8.3
Gulf of Guinea	NIGERIA	Eagauda	OPR	0.0	22	11.6	8.4
Gulf of Guinea	NIGERIA	Egbe	OPR	0.0	22	7.2	6.0
Gulf of Guinea	NIGERIA	Erinle	OPR	0.0	94	7.9	4.5
Gulf of Guinea	NIGERIA	Ero	OPR	0.0	20	8.0	5.2
Gulf of Guinea	NIGERIA	Gari	OPR	0.0	214	12.4	8.3
Gulf of Guinea	NIGERIA	Goronye	OPR	0.0	942	13.5	5.9
Gulf of Guinea	NIGERIA	Gubi	OPR	0.0	38	10.4	9.9
Gulf of Guinea	NIGERIA	Guzan	OPR	0.0	20	9.3	5.7
Gulf of Guinea	NIGERIA	Guzu Guzu	OPR	0.0	25	12.0	8.1
Gulf of Guinea	NIGERIA	Hadejia	OPR	0.0	11	12.5	10.0
Gulf of Guinea	NIGERIA	Ikere Gorge	OPR	0.0	265	8.2	3.7
Gulf of Guinea	NIGERIA	Ikom	REH	700.0	100	6.0	8.7
Gulf of Guinea	NIGERIA	Iku	OPR	0.0	43	9.0	7.0
Gulf of Guinea	NIGERIA	Jebba	OPR	578.4	3,600	9.1	4.8
Gulf of Guinea	NIGERIA	Jekara	OPR	0.0	6,519	12.1	8.7
Gulf of Guinea	NIGERIA	Jibiya	OPR	0.0	143	13.1	7.2
Gulf of Guinea	NIGERIA	Kafin Zaki	OPR	0.0	2,700	10.8	9.6
Gulf of Guinea	NIGERIA	Kafin-Chiri	OPR	0.0	31	11.6	8.9
Gulf of Guinea	NIGERIA	Kagara	OPR	0.0	43	10.2	6.2
Gulf of Guinea	NIGERIA	Kangimi	OPR	0.0	59	10.6	7.6
Gulf of Guinea	NIGERIA	Karaye	OPR	0.0	17	11.8	8.0
Gulf of Guinea	NIGERIA	Katsina Ali	PLN	310.0	100	7.2	9.3
Gulf of Guinea	NIGERIA	Kiri	OPR	0.0	615	9.7	12.0
Gulf of Guinea	NIGERIA	Kontagora (1)	OPR	0.0	18	10.1	4.9
Gulf of Guinea	NIGERIA	Kontagora (2)	OPR	0.0	340	10.4	5.3
Gulf of Guinea	NIGERIA	Kubli	OPR	0.0	70	10.5	4.1
Gulf of Guinea	NIGERIA	Kurra	OPR	0.0	17	9.8	9.2
Gulf of Guinea	NIGERIA	LOKOJA	REH	1,870.0	68,000	7.8	6.7
Gulf of Guinea	NIGERIA	Magaga	OPR	0.0	20	12.0	8.0
Gulf of Guinea	NIGERIA	Makurdi	PLN	1,100.0	100	7.7	8.5
Gulf of Guinea	NIGERIA	Mambila	PLN	3,900.0	100	6.7	11.3
Gulf of Guinea	NIGERIA	Mohamadu Ayuba	OPR	0.0	5,535	12.6	8.4
Gulf of Guinea	NIGERIA	Omi	OPR	0.0	250	8.2	5.6
Gulf of Guinea	NIGERIA	Onitsha	PLN	750.0	50	6.2	6.8
Gulf of Guinea	NIGERIA	Oyan	OPR	0.0	270	7.3	3.3

## IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Gulf of Guinea	NIGERIA	Pada	OPR	0.0	12	11.9	7.9
Gulf of Guinea	NIGERIA	Ruwan Kanya	OPR	0.0	33	11.5	8.4
Gulf of Guinea	NIGERIA	Shiroro	OPR	600.0	7	10.0	6.8
Gulf of Guinea	NIGERIA	Suleja	OPR	0.0	52	9.2	7.2
Gulf of Guinea	NIGERIA	Tagwai	OPR	0.0	28	9.6	6.7
Gulf of Guinea	NIGERIA	Tenti	OPR	0.0	14	9.4	8.9
Gulf of Guinea	NIGERIA	Tiga	OPR	0.0	1,874	11.5	8.4
Gulf of Guinea	NIGERIA	Tomas	OPR	0.0	60	12.3	8.5
Gulf of Guinea	NIGERIA	Toro	OPR	0.0	5	10.1	9.3
Gulf of Guinea	NIGERIA	Tudun Wada	OPR	0.0	21	11.3	8.4
Gulf of Guinea	NIGERIA	Ussuman	OPR	0.0	120	8.9	7.1
Gulf of Guinea	NIGERIA	Watari	OPR	0.0	105	12.2	8.1
Gulf of Guinea	NIGERIA	Waya	OPR	0.0	21	10.3	10.0
Gulf of Guinea	NIGERIA	Y. Gowon	OPR	0.0	30	9.5	9.1
Gulf of Guinea	NIGERIA	Zaria	OPR	0.0	16	11.1	7.8
Gulf of Guinea	NIGERIA	Zobe	OPR	0.0	177	12.4	7.5
Gulf of Guinea	NIGERIA	Zungeru	PLN	950.0	100	9.8	6.2
Gulf of Guinea	SIERRA LEONE	Benkongor I-III	PLN	200.3	100	8.6	-11.3
Gulf of Guinea	SIERRA LEONE	Bitmai I - II	PLN	89.1	80	8.7	-11.7
Gulf of Guinea	SIERRA LEONE	Bumbuna Ph I	OPR	50.0	30	9.1	-11.7
Gulf of Guinea	SIERRA LEONE	Guma	OPR	0.0	220	8.4	-13.2
Gulf of Guinea	SIERRA LEONE	Kambatibo	PLN	52.5	30	9.8	-11.8
Gulf of Guinea	SIERRA LEONE	Kuse II	PLN	92.0	50	9.9	-11.9
Gulf of Guinea	SIERRA LEONE	Manu River	PLN	45.0	30	8.1	-12.7
Gulf of Guinea	TOGO	Nangbeto	OPR	31.0	1,710	7.4	1.5
Gulf of Guinea	TOGO	Nasia	OPR	0.0	5	10.1	0.6
Gulf of Guinea	TOGO	Tététou	PLN	20.0	10	7.0	1.5
Gulf of Guinea	TOGO	Tihalea	PLN	9.0	2	9.6	1.0
Indian Ocean Islands	MADAGASCAR	Ambilivily	OPR	0.0	14	-16.1	46.7
Indian Ocean Islands	MADAGASCAR	Amboromalandy	OPR	0.0	30	-17.0	46.7
Indian Ocean Islands	MADAGASCAR	Andekaleka	OPR	58.0	20	-18.8	48.6
Indian Ocean Islands	MADAGASCAR	Antanifotsy	OPR	0.0	25	-18.0	48.4
Indian Ocean Islands	MADAGASCAR	Mandraka	REH	24.0	12	-18.1	49.3
Indian Ocean Islands	MADAGASCAR	Mantaso	OPR	0.0	125	-19.0	47.9
Indian Ocean Islands	MADAGASCAR	Sahamaloto	OPR	0.0	15	-17.4	48.3
Indian Ocean Islands	MADAGASCAR	Tsiazompaniry	OPR	0.0	260	-19.3	47.8
Northern	ALGERIA	Ain Dalia	OPR	0.0	82	36.3	7.9
Northern	ALGERIA	Ain Zada	OPR	0.0	125	36.2	5.1
Northern	ALGERIA	Babar	OPR	0.0	41	35.2	7.0
Northern	ALGERIA	Bakhadda	OPR	0.0	56	35.3	1.0
Northern	ALGERIA	Beni Bahdel	OPR	0.0	63	34.7	-1.5
Northern	ALGERIA	Beni-Amran	OPR	0.0	16	36.7	3.6
Northern	ALGERIA	Bou Hanifia	OPR	0.0	73	35.3	-0.1
Northern	ALGERIA	Bou Roumi	OPR	0.0	188	36.4	2.6
Northern	ALGERIA	Boughzoul	OPR	0.0	55	35.8	2.8

IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Northern	ALGERIA	Brezina	OPR	0.0	123	33.1	1.2
Northern	ALGERIA	Cheffia	OPR	0.0	171	36.6	8.0
Northern	ALGERIA	Cheurfas	OPR	0.0	14	35.5	-0.2
Northern	ALGERIA	Cheurfas II	OPR	0.0	82	36.8	4.9
Northern	ALGERIA	Colonel Bougara	OPR	0.0	13	35.5	1.7
Northern	ALGERIA	Dahmouni	OPR	0.0	41	35.4	1.6
Northern	ALGERIA	Djorf Torba	OPR	0.0	350	31.5	-2.8
Northern	ALGERIA	El Agrem	OPR	0.0	33	36.8	5.8
Northern	ALGERIA	Erraguene	OPR	0.0	200	35.5	0.0
Northern	ALGERIA	Fergoug	OPR	0.0	18	35.5	0.0
Northern	ALGERIA	Fontaine des Gazelles	OPR	0.0	55	35.1	5.6
Northern	ALGERIA	Foum El Gherza	OPR	0.0	47	34.8	5.9
Northern	ALGERIA	Ghrib	OPR	0.0	280	36.2	2.6
Northern	ALGERIA	Guenitra	OPR	0.0	125	36.6	6.9
Northern	ALGERIA	H Boughara	OPR	0.0	177	35.5	1.7
Northern	ALGERIA	H. Debagh	OPR	0.0	220	36.1	7.4
Northern	ALGERIA	Hamiz	OPR	0.0	21	36.5	2.4
Northern	ALGERIA	Hammam Grouz	OPR	0.0	45	36.2	6.3
Northern	ALGERIA	Ighil Emda	OPR	0.0	160	36.5	5.3
Northern	ALGERIA	Keddara	OPR	0.0	146	36.6	3.5
Northern	ALGERIA	Ksob	OPR	0.0	30	35.8	4.6
Northern	ALGERIA	Ladrat	OPR	0.0	10	36.4	3.0
Northern	ALGERIA	Lekhal	OPR	0.0	30	36.3	3.7
Northern	ALGERIA	Meffrouch	OPR	0.0	15	35.0	-1.4
Northern	ALGERIA	Mexa	OPR	0.0	52	36.5	8.1
Northern	ALGERIA	O. Cherf	OPR	0.0	157	36.4	7.3
Northern	ALGERIA	Ouzert	OPR	0.0	100	35.3	0.0
Northern	ALGERIA	S.M.B. Aouda	OPR	0.0	235	35.6	0.6
Northern	ALGERIA	Sarno	OPR	0.0	22	35.3	0.6
Northern	ALGERIA	Sidi Abdelli	OPR	0.0	110	35.1	-1.1
Northern	ALGERIA	Sidi Yakoub	OPR	0.0	280	36.0	1.3
Northern	ALGERIA	Taksebt	OPR	0.0	175	36.9	4.2
Northern	ALGERIA	Zardezas	OPR	0.0	31	36.4	6.9
Northern	EGYPT	Aswan High Dam	REH	2,100.0	162,000	24.0	32.9
Northern	EGYPT	Damietta Barrage HPP	PLN	13.0	5	31.4	31.8
Northern	EGYPT	Esna	REH	90.0	20	25.3	32.6
Northern	EGYPT	Naga Hamadi	REH	64.0	15	26.1	32.2
Northern	EGYPT	New Assuit Barage	PLN	32.0	10	27.2	31.2
Northern	LIBYA	Abu Mansur	OPR	0.0	22	32.6	22.4
Northern	LIBYA	Mejenin IV	OPR	0.0	58	32.3	13.2
Northern	LIBYA	Qattara	OPR	0.0	135	32.0	20.4
Northern	MOROCCO	Abdelmoumen	OPR	0.0	216	30.7	-9.2
Northern	MOROCCO	Ait Messaoud	OPR	0.0	13	32.6	-6.2
Northern	MOROCCO	Al Wahda	OPR	0.0	3,730	34.6	-5.1
Northern	MOROCCO	Al Massira	OPR	0.0	2,760	32.5	-7.6

## IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Northern	MOROCCO	Aoulouz	OPR	0.0	110	29.8	-9.4
Northern	MOROCCO	Asfalou	OPR	0.0	317	34.6	-4.3
Northern	MOROCCO	Bab Louta	OPR	0.0	37	34.0	-4.4
Northern	MOROCCO	Bin El Ouidane	OPR	0.0	1,484	32.1	-6.5
Northern	MOROCCO	Bouhouda	OPR	0.0	56	32.5	-8.1
Northern	MOROCCO	Gard de Sebou	OPR	0.0	40	33.8	-4.6
Northern	MOROCCO	Hassan 1	OPR	0.0	273	31.8	-7.1
Northern	MOROCCO	Hassan Addakhil	OPR	0.0	369	32.0	-4.5
Northern	MOROCCO	Ibn Batouta	OPR	0.0	44	35.6	-5.7
Northern	MOROCCO	Idriss 1	OPR	0.0	1,217	34.2	-4.7
Northern	MOROCCO	Imfout	OPR	0.0	27	32.7	-7.9
Northern	MOROCCO	Injil	OPR	0.0	12	33.2	-4.6
Northern	MOROCCO	Lalla Takerkoust	OPR	0.0	96	31.4	-8.1
Northern	MOROCCO	Mansour Eddahbi	OPR	0.0	592	30.9	-6.8
Northern	MOROCCO	Mellah	OPR	0.0	18	33.5	-7.3
Northern	MOROCCO	Mohamed Ben Abdelkrim El Kh	OPR	0.0	43	35.1	-3.8
Northern	MOROCCO	Mohammed V	OPR	0.0	725	34.7	-2.9
Northern	MOROCCO	Mokhtar Soussi	OPR	0.0	50	28.4	-1.3
Northern	MOROCCO	Moulay Abdellah	OPR	0.0	110	34.7	-4.3
Northern	MOROCCO	Moulay Youssef	OPR	0.0	197	31.6	-7.3
Northern	MOROCCO	Nakhla	OPR	0.0	13	35.4	-5.4
Northern	MOROCCO	Oued El Makhazine	OPR	0.0	807	34.9	-5.8
Northern	MOROCCO	Sahla	OPR	0.0	62	35.2	3.0
Northern	MOROCCO	Sidi Chahed	OPR	0.0	170	34.2	-4.1
Northern	MOROCCO	Sidi Mohamed Ben Abdellah	OPR	0.0	509	33.9	-6.7
Northern	MOROCCO	Sidi Said	OPR	0.0	400	28.5	-10.6
Northern	MOROCCO	Youssf Ben Tachfine	OPR	0.0	320	29.8	-9.5
Northern	TUNISIA	Ben Metir	OPR	0.0	73	36.7	8.7
Northern	TUNISIA	Bir M'cherga	OPR	0.0	160	36.5	10.0
Northern	TUNISIA	El Habib	OPR	0.0	110	35.6	9.7
Northern	TUNISIA	Ghezala	OPR	0.0	12	37.1	9.5
Northern	TUNISIA	Kasseb	OPR	0.0	81	36.8	9.0
Northern	TUNISIA	Kebir	OPR	0.0	26	36.3	9.8
Northern	TUNISIA	Lebna	OPR	0.0	30	36.7	10.9
Northern	TUNISIA	Mornaguia	OPR	0.0	15	36.8	10.0
Northern	TUNISIA	Nebeur	OPR	0.0	200	36.3	8.6
Northern	TUNISIA	Nebhana	OPR	0.0	86	36.1	9.9
Northern	TUNISIA	Sidi Aich	OPR	0.0	53	34.4	8.7
Northern	TUNISIA	Sidi Saâd (Bourguiba A Sidi	OPR	0.0	209	35.5	10.0
Northern	TUNISIA	Silliana	OPR	0.0	70	36.2	9.4
Southern	BOTSWANA	Bokaa	OPR	0.0	85	-24.4	26.0
Southern	BOTSWANA	Gaberone	OPR	0.0	144	-24.7	25.9
Southern	BOTSWANA	Mopipi	OPR	0.0	95	-21.2	24.8
Southern	BOTSWANA	Shashe	OPR	0.0	85	-21.4	27.4
Southern	LESOTHO	Mohale	OPR	0.0	857	-29.5	28.1

## IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Southern	LESOTHO	Muela II	OPR	110.0	10	-28.8	28.5
Southern	MALAWI	Fufu	PLN	100.0	50	-10.7	34.2
Southern	MALAWI	Kamuzu Dam II	OPR	0.0	19	-14.2	33.7
Southern	MALAWI	KAPICHIRA I	OPR	64.0	3	-15.9	34.8
Southern	MALAWI	Kholombizo	PLN	240.0	50	-15.3	35.1
Southern	MALAWI	Mpatamanga	PLN	260.0	50	-15.7	34.7
Southern	MALAWI	NKULA-A & B	OPR	124.0	20	-15.5	34.8
Southern	MALAWI	TEDZANI FALLS	OPR	91.6	70	-15.6	34.8
Southern	MOZAMBIQUE	Boroma	PLN	160.0	90	-16.1	33.4
Southern	MOZAMBIQUE	Cahora Bassa	OPR	2,075.0	52,000	-15.6	32.7
Southern	MOZAMBIQUE	CHICAMBA	OPR	38.4	1,536	-19.2	33.1
Southern	MOZAMBIQUE	Chipembe	OPR	0.0	24	-12.6	40.3
Southern	MOZAMBIQUE	Corumana	OPR	16.6	1,273	-25.2	32.2
Southern	MOZAMBIQUE	Luenha 7	OPR	0.0	650	-16.4	33.8
Southern	MOZAMBIQUE	Luo	OPR	0.0	650	-16.3	37.1
Southern	MOZAMBIQUE	Lupata	PLN	654.0	1,000	-15.5	30.4
Southern	MOZAMBIQUE	Lurio	PLN	183.0	2,500	-14.3	38.0
Southern	MOZAMBIQUE	Macarretane	OPR	0.0	15	-24.4	33.0
Southern	MOZAMBIQUE	Mapai	OPR	0.0	11,200	-22.9	32.0
Southern	MOZAMBIQUE	Mavuzi	OPR	52.0	1	-19.5	33.4
Southern	MOZAMBIQUE	Mepanda Uncua Ph I	PLN	1,300.0	900	-15.8	33.1
Southern	MOZAMBIQUE	Mutala	OPR	0.0	220	-14.1	38.2
Southern	MOZAMBIQUE	Pavua	OPR	0.0	636	-19.0	34.1
Southern	MOZAMBIQUE	Pequenos Libombos	OPR	0.0	357	-26.1	32.2
Southern	MOZAMBIQUE	Sussudenga	OPR	0.0	33	-19.5	33.3
Southern	MOZAMBIQUE	Tacuraminga	OPR	0.0	310	-18.8	33.9
Southern	NAMIBIA	Baine (** Angola)	PLN	180.0	100	-17.4	14.6
Southern	NAMIBIA	BAYNES	PLN	360.0	1,760	-17.2	12.7
Southern	NAMIBIA	Dreihuk	OPR	0.0	15	-28.1	18.6
Southern	NAMIBIA	Hardap	OPR	0.0	295	-24.5	17.9
Southern	NAMIBIA	Naute	OPR	0.0	84	-26.9	17.9
Southern	NAMIBIA	Oanob	OPR	0.0	35	-23.2	16.9
Southern	NAMIBIA	Olushandja	OPR	0.0	42	-17.4	14.6
Southern	NAMIBIA	Omarur Delta (OMDEL)	OPR	0.0	41	-21.9	14.5
Southern	NAMIBIA	Omatako	OPR	0.0	43	-21.1	17.2
Southern	NAMIBIA	POPA FALLS	PLN	20.0	5	-18.1	21.6
Southern	NAMIBIA	Ruacana	PLN	240.0	2,600	-17.4	14.2
Southern	NAMIBIA	S. Von Bach	OPR	0.0	49	-22.0	17.0
Southern	NAMIBIA	Swakoppoort	OPR	0.0	63	-22.2	16.6
Southern	SOUTH AFRICA	Albasini	OPR	0.0	25	-23.1	30.1
Southern	SOUTH AFRICA	Albert Falls	OPR	0.0	289	-29.4	30.4
Southern	SOUTH AFRICA	Allemankraal	OPR	0.0	183	-28.3	27.1
Southern	SOUTH AFRICA	Armenia	OPR	0.0	15	-29.4	27.1
Southern	SOUTH AFRICA	Beervlei	OPR	0.0	89	-33.1	23.5
Southern	SOUTH AFRICA	Bellair	OPR	0.0	10	-33.7	20.6

IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Southern	SOUTH AFRICA	Bloemhof (2)	OPR	0.0	1,264	-27.7	25.6
Southern	SOUTH AFRICA	Blyderivierspoort	OPR	0.0	56	-24.5	30.8
Southern	SOUTH AFRICA	Boskop	OPR	0.0	21	-26.6	27.1
Southern	SOUTH AFRICA	Bospoort	OPR	0.0	19	-25.6	27.4
Southern	SOUTH AFRICA	Bramhoek Pumped Stor.	PLN	1,332.0	900	-30.8	26.6
Southern	SOUTH AFRICA	Bridledrift	OPR	0.0	74	-33.0	27.7
Southern	SOUTH AFRICA	Bronkhorstspruit	OPR	0.0	59	-25.9	28.7
Southern	SOUTH AFRICA	Buchuberg	OPR	0.0	20	-29.0	22.2
Southern	SOUTH AFRICA	Buffelspoort	OPR	0.0	10	-25.8	27.5
Southern	SOUTH AFRICA	C W Malan	OPR	0.0	106	-34.1	24.7
Southern	SOUTH AFRICA	Chelmsford	OPR	0.0	198	-27.9	29.9
Southern	SOUTH AFRICA	Clanwilliam	OPR	0.0	124	-32.2	18.9
Southern	SOUTH AFRICA	Clifford Chambers	OPR	0.0	5	-28.7	29.1
Southern	SOUTH AFRICA	Collywobbles	OPR	42.0	10	-32.0	28.6
Southern	SOUTH AFRICA	Craigie Burn	OPR	0.0	23	-29.2	30.3
Southern	SOUTH AFRICA	Dagama	OPR	0.0	14	-25.1	31.0
Southern	SOUTH AFRICA	Dangadzivha	OPR	0.0	10	-22.6	30.2
Southern	SOUTH AFRICA	Dankbaar	OPR	0.0	10	-28.3	28.0
Southern	SOUTH AFRICA	Dewhurst	OPR	0.0	10	-34.2	19.0
Southern	SOUTH AFRICA	Doordraai	OPR	0.0	47	-24.3	28.8
Southern	SOUTH AFRICA	Doringrivier	OPR	0.0	20	-31.5	27.3
Southern	SOUTH AFRICA	Douglas(1)	OPR	0.0	17	-26.6	29.0
Southern	SOUTH AFRICA	Driekloof	OPR	0.0	37	-26.0	28.0
Southern	SOUTH AFRICA	Driel	OPR	0.0	10	-28.8	29.3
Southern	SOUTH AFRICA	Ebenezer	OPR	0.0	69	-23.9	30.0
Southern	SOUTH AFRICA	Elands Kloof	OPR	0.0	11	-34.0	19.3
Southern	SOUTH AFRICA	Elandsjagt (C W Malan)	OPR	0.0	106	-34.1	21.7
Southern	SOUTH AFRICA	Erfenis	OPR	0.0	224	-28.5	26.8
Southern	SOUTH AFRICA	Fanie Botha	OPR	0.0	160	-23.8	30.2
Southern	SOUTH AFRICA	Floriskaal	OPR	0.0	52	-33.3	21.0
Southern	SOUTH AFRICA	Gariep	REH	360.0	90	-28.6	21.8
Southern	SOUTH AFRICA	Goedertrouw	OPR	0.0	315	-28.8	31.5
Southern	SOUTH AFRICA	Grassridge	OPR	0.0	50	-31.8	25.5
Southern	SOUTH AFRICA	Groendal	OPR	0.0	12	-33.7	25.3
Southern	SOUTH AFRICA	Grootdraai	OPR	0.0	363	-29.3	26.9
Southern	SOUTH AFRICA	Hans Strijdom	OPR	0.0	149	-24.0	27.7
Southern	SOUTH AFRICA	Hartebeespoort	OPR	0.0	195	-25.7	27.8
Southern	SOUTH AFRICA	Hazelmere	OPR	0.0	23	-29.6	31.0
Southern	SOUTH AFRICA	Hendrik Verwoerd (Gariep)	OPR	0.0	5,674	-30.6	25.5
Southern	SOUTH AFRICA	Hluhluwe	OPR	0.0	29	-28.1	32.2
Southern	SOUTH AFRICA	Jericho	OPR	0.0	60	-26.7	30.5
Southern	SOUTH AFRICA	Kalkfontein	OPR	0.0	323	-29.5	25.2
Southern	SOUTH AFRICA	Kammanassie	OPR	0.0	36	-33.6	22.4
Southern	SOUTH AFRICA	Katrivier	OPR	0.0	25	-32.6	26.8
Southern	SOUTH AFRICA	Kilburn	OPR	0.0	36	-28.6	29.1

## IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Southern	SOUTH AFRICA	Klipdrif	OPR	0.0	13	-26.6	27.3
Southern	SOUTH AFRICA	Klipfontein(2)	OPR	0.0	19	-27.8	30.8
Southern	SOUTH AFRICA	Klipkopjes	OPR	0.0	12	-25.2	31.0
Southern	SOUTH AFRICA	Klipvoor	OPR	0.0	44	-25.1	27.8
Southern	SOUTH AFRICA	Kommandodrift	OPR	0.0	59	-32.1	26.0
Southern	SOUTH AFRICA	Koppies	OPR	0.0	41	-27.3	27.7
Southern	SOUTH AFRICA	Kosterrivier	OPR	0.0	12	-25.7	26.9
Southern	SOUTH AFRICA	Krugersdrift	OPR	0.0	76	-28.9	26.0
Southern	SOUTH AFRICA	Kwaggaskloof	OPR	0.0	171	-33.8	19.5
Southern	SOUTH AFRICA	La Riche	OPR	0.0	10	-31.9	22.1
Southern	SOUTH AFRICA	Laing	OPR	0.0	21	-33.0	27.5
Southern	SOUTH AFRICA	Lake Mentz	OPR	0.0	192	-33.2	25.2
Southern	SOUTH AFRICA	Lakenvally	OPR	0.0	10	-33.4	19.6
Southern	SOUTH AFRICA	Leeu-Gamka	OPR	0.0	14	-32.6	22.0
Southern	SOUTH AFRICA	Lindleyspoort	OPR	0.0	14	-25.5	26.7
Southern	SOUTH AFRICA	Lorna Dawn	OPR	0.0	12	-23.5	30.1
Southern	SOUTH AFRICA	Loskop	OPR	0.0	348	-25.4	29.4
Southern	SOUTH AFRICA	Lubisi	OPR	0.0	158	-31.8	27.4
Southern	SOUTH AFRICA	Luphephe	OPR	0.0	15	-22.6	30.4
Southern	SOUTH AFRICA	Marico-Bosveld	OPR	0.0	28	-25.5	26.4
Southern	SOUTH AFRICA	Middelburg	OPR	0.0	48	-25.8	29.5
Southern	SOUTH AFRICA	Middle Letaba	OPR	0.0	173	-23.3	30.4
Southern	SOUTH AFRICA	Midmar	OPR	0.0	177	-29.5	30.2
Southern	SOUTH AFRICA	Morgenstond	OPR	0.0	46	-26.7	30.5
Southern	SOUTH AFRICA	Nagle	OPR	0.0	23	-29.6	30.6
Southern	SOUTH AFRICA	Nahoon	OPR	0.0	21	-32.9	27.8
Southern	SOUTH AFRICA	Ncora	OPR	0.0	162	-31.8	27.7
Southern	SOUTH AFRICA	Nooitgedacht	OPR	0.0	79	-25.9	30.1
Southern	SOUTH AFRICA	Ntshongweni	OPR	0.0	12	-29.9	30.7
Southern	SOUTH AFRICA	Nzhelele	OPR	0.0	57	-22.6	30.1
Southern	SOUTH AFRICA	Ohrigstad	OPR	0.0	14	-24.9	30.6
Southern	SOUTH AFRICA	Olifantsnek	OPR	0.0	14	-25.8	27.3
Southern	SOUTH AFRICA	Oubaaskraal	OPR	0.0	28	-32.6	19.9
Southern	SOUTH AFRICA	P K Le Roux	OPR	0.0	3,237	-30.0	24.7
Southern	SOUTH AFRICA	Pongolapoort	OPR	0.0	2,501	-27.4	32.1
Southern	SOUTH AFRICA	Rhenosterkop(2)	OPR	0.0	206	-24.9	28.9
Southern	SOUTH AFRICA	Rietvlei(2)	OPR	0.0	12	-25.9	28.3
Southern	SOUTH AFRICA	Roodekopjies	OPR	0.0	103	-25.4	27.6
Southern	SOUTH AFRICA	Roodeplaat	OPR	0.0	44	-25.6	28.4
Southern	SOUTH AFRICA	Rust De Winter	OPR	0.0	28	-25.2	28.5
Southern	SOUTH AFRICA	Rustfontein	OPR	0.0	75	-29.3	26.6
Southern	SOUTH AFRICA	Saulspoort	OPR	0.0	19	-28.2	28.4
Southern	SOUTH AFRICA	Smartt Syndicate	OPR	0.0	100	-30.6	23.3
Southern	SOUTH AFRICA	Spitskop	OPR	0.0	61	-28.1	24.5
Southern	SOUTH AFRICA	Steenbras	OPR	0.0	36	-34.2	18.8

## IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Southern	SOUTH AFRICA	Sterkfontein(3)	OPR	0.0	2,617	-28.4	29.0
Southern	SOUTH AFRICA	Sterkspruit	OPR	0.0	167	-25.4	30.4
Southern	SOUTH AFRICA	Stettynskloof	OPR	0.0	16	-33.8	19.3
Southern	SOUTH AFRICA	Stompdrift	OPR	0.0	55	-33.5	22.6
Southern	SOUTH AFRICA	Threewaterskloof	OPR	0.0	433	-34.1	19.3
Southern	SOUTH AFRICA	Tierpoort	OPR	0.0	34	-29.4	26.1
Southern	SOUTH AFRICA	Torquay	OPR	0.0	392	-29.3	23.8
Southern	SOUTH AFRICA	Umtata	OPR	0.0	256	-31.5	28.7
Southern	SOUTH AFRICA	Vaal	OPR	0.0	2,122	-26.9	28.1
Southern	SOUTH AFRICA	Vaal Barrage	OPR	0.0	57	-26.8	27.7
Southern	SOUTH AFRICA	Vaalhartz	OPR	0.0	51	-28.1	24.9
Southern	SOUTH AFRICA	Vaalkop(2)	OPR	0.0	56	-25.3	27.5
Southern	SOUTH AFRICA	Van der Kloof	REH	240.0	90	-30.0	24.7
Southern	SOUTH AFRICA	Van Ryneveld's Pass	OPR	0.0	47	-32.2	24.5
Southern	SOUTH AFRICA	Voelvie	OPR	0.0	168	-33.4	19.0
Southern	SOUTH AFRICA	Wagendrift	OPR	0.0	58	-29.0	29.9
Southern	SOUTH AFRICA	Wan Wyksvlei	OPR	0.0	143	-30.4	21.8
Southern	SOUTH AFRICA	Waterdown	OPR	0.0	38	-32.3	26.9
Southern	SOUTH AFRICA	Wemmershoek	OPR	0.0	59	-33.8	19.1
Southern	SOUTH AFRICA	Westoe	OPR	0.0	61	-26.5	30.6
Southern	SOUTH AFRICA	Withbank	OPR	0.0	104	-25.9	29.3
Southern	SOUTH AFRICA	Witklip	OPR	0.0	13	-25.2	30.9
Southern	SOUTH AFRICA	Woodstock	OPR	0.0	381	-28.8	29.2
Southern	SOUTH AFRICA	Xonxa	OPR	0.0	144	-31.8	27.2
Southern	SWAZILAND	Luphphlo	OPR	0.0	24	-26.3	31.0
Southern	SWAZILAND	Maguga	OPR	0.0	332	-26.1	31.3
Southern	SWAZILAND	Mnjoli	OPR	0.0	153	-26.1	31.7
Southern	SWAZILAND	Sand River	OPR	0.0	50	-26.0	31.7
Southern	ZAMBIA	Batoka (** Zimbabwe)	PLN	800.0	160	-17.9	26.3
Southern	ZAMBIA	Itezhi Tezi	PLN	120.0	4,925	-15.8	26.0
Southern	ZAMBIA	KAFUE GORGE	OPR	900.0	785	-15.8	28.4
Southern	ZAMBIA	Kalungwhishi	PLN	163.0	60	-9.0	29.0
Southern	ZAMBIA	Kariba	OPR	0.0	94,000	-16.5	28.8
Southern	ZAMBIA	Lulapula	PLN	950.0	200	-11.6	29.0
Southern	ZAMBIA	Lunsemfa	OPR	15.9	40	-14.2	29.1
Southern	ZAMBIA	Lusiwasi	OPR	12.0	40	-13.0	30.9
Southern	ZAMBIA	Mulungushi	OPR	16.2	41	-14.7	28.8
Southern	ZAMBIA	Victoria Falls	OPR	108.0	160	-17.9	25.9
Southern	ZIMBABWE	Amapongokwe	OPR	0.0	40	-19.8	29.8
Southern	ZIMBABWE	Antelope (or Gulameta)	OPR	0.0	15	-21.1	28.4
Southern	ZIMBABWE	Bangala	OPR	0.0	130	-20.7	31.2
Southern	ZIMBABWE	Blackmore Vale	OPR	0.0	18	-18.1	30.0
Southern	ZIMBABWE	Charliesona	OPR	0.0	14	-19.3	28.2
Southern	ZIMBABWE	Claw	OPR	0.0	21	-18.4	29.9
Southern	ZIMBABWE	Clifton ORS	OPR	0.0	11	-18.2	30.3

## IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Southern	ZIMBABWE	Darwendale (or Robertson)	OPR	0.0	490	-17.8	30.5
Southern	ZIMBABWE	Eben	OPR	0.0	13	-17.1	31.5
Southern	ZIMBABWE	Esquilingwe	OPR	0.0	11	-20.8	31.3
Southern	ZIMBABWE	Gwenoro	OPR	0.0	32	-19.8	29.9
Southern	ZIMBABWE	Hunyani Poort Lake Mcilwai	OPR	0.0	250	-17.9	30.8
Southern	ZIMBABWE	Ingwesi	OPR	0.0	70	-21.0	27.9
Southern	ZIMBABWE	Inyankuni	OPR	0.0	82	-20.4	29.1
Southern	ZIMBABWE	Kyle	OPR	0.0	1,425	-20.3	31.0
Southern	ZIMBABWE	Lesapi	OPR	0.0	68	-18.5	32.1
Southern	ZIMBABWE	Mananda	OPR	0.0	11	-20.2	28.0
Southern	ZIMBABWE	Manjirenji Lake McDougall	OPR	0.0	285	-20.6	31.6
Southern	ZIMBABWE	Manyuchi II	OPR	0.0	319	-21.1	30.4
Southern	ZIMBABWE	Mayfair	OPR	0.0	96	-19.9	29.2
Southern	ZIMBABWE	Mazowe	OPR	0.0	35	-17.5	31.0
Southern	ZIMBABWE	Mazwikadei	OPR	0.0	365	-17.2	30.4
Southern	ZIMBABWE	Mbindangombe	OPR	0.0	23	-20.4	30.6
Southern	ZIMBABWE	Mupata Gorge (** Zambia	PLN	300.0	40	-15.6	30.1
Southern	ZIMBABWE	Mwenje Lake Noakes	OPR	0.0	42	-17.3	31.0
Southern	ZIMBABWE	Ncema	OPR	0.0	18	-20.4	29.0
Southern	ZIMBABWE	Ngesi	OPR	0.0	27	-18.7	31.4
Southern	ZIMBABWE	Palawan	OPR	0.0	74	-20.1	29.8
Southern	ZIMBABWE	Pioneer (or Makado)	OPR	0.0	11	-21.5	29.7
Southern	ZIMBABWE	Ruti	OPR	0.0	132	-19.6	31.7
Southern	ZIMBABWE	Saruwe	OPR	0.0	13	-18.1	30.4
Southern	ZIMBABWE	Sebakwe	OPR	0.0	266	-19.0	30.2
Southern	ZIMBABWE	Silalabuhwa	OPR	0.0	23	-20.8	29.4
Southern	ZIMBABWE	Siya	OPR	0.0	109	-20.2	31.3
Southern	ZIMBABWE	Smallbridge	OPR	0.0	15	-18.8	32.5
Southern	ZIMBABWE	Tiyabenzi	OPR	0.0	14	-19.6	29.3
Southern	ZIMBABWE	Two Tree	OPR	0.0	14	-17.0	30.1
Southern	ZIMBABWE	Uhlawe	OPR	0.0	5	-19.1	28.4
Southern	ZIMBABWE	Umrodzi	OPR	0.0	20	-17.3	31.0
Southern	ZIMBABWE	Umshandige	OPR	0.0	38	-20.0	30.5
Southern	ZIMBABWE	Umzingwane	OPR	0.0	57	-20.4	29.0
Southern	ZIMBABWE	Upper Ncema	OPR	0.0	45	-20.3	29.0
Sudano-Sahelian	BURKINA FASO	Bagre	OPR	16.0	4	11.5	-0.5
Sudano-Sahelian	BURKINA FASO	Dakiri	OPR	0.0	11	13.3	-0.3
Sudano-Sahelian	BURKINA FASO	Diebuugo	PLN	12.0	5	11.0	-3.2
Sudano-Sahelian	BURKINA FASO	Douna	OPR	0.0	50	10.7	-5.1
Sudano-Sahelian	BURKINA FASO	Karamassasso	OPR	0.0	12	11.8	-4.8
Sudano-Sahelian	BURKINA FASO	Kompienga	OPR	14.0	1,400	12.1	0.7
Sudano-Sahelian	BURKINA FASO	Lac Bam	OPR	0.0	31	13.3	-1.5
Sudano-Sahelian	BURKINA FASO	Lery	OPR	0.0	250	12.8	-3.4
Sudano-Sahelian	BURKINA FASO	Loumbila	OPR	0.0	35	12.5	-1.6
Sudano-Sahelian	BURKINA FASO	NOUMBIEL --also Ghana	PLN	54.0	20	9.7	-2.8

## IRRIGATION SPENDING NEEDS IN AFRICA: CROSS-COUNTRY ANNEX

REGION	COUNTRY	PLANT	STA TUS	POWER CAPACIT Y (MW)	Reservoir Capacity (Mill m <sup>3</sup> )	LAT	LONG
Sudano-Sahelian	BURKINA FASO	Sitenga	OPR	0.0	10	14.0	-0.3
Sudano-Sahelian	BURKINA FASO	Yalgo	OPR	0.0	10	13.2	-0.3
Sudano-Sahelian	ERITREA	Zula	OPR	0.0	22	15.3	39.4
Sudano-Sahelian	MALI	Baoule 3	PLN	24.0	20	12.9	-8.6
Sudano-Sahelian	MALI	Feloue	PLN	31.0	15	14.4	-11.4
Sudano-Sahelian	MALI	Gaoulgo	PLN	300.0	100	13.8	-11.1
Sudano-Sahelian	MALI	Kenie	PLN	56.0	70	11.2	-7.6
Sudano-Sahelian	MALI	Labeanga	PLN	17.0	20	15.0	0.7
Sudano-Sahelian	MALI	Markala	OPR	0.0	175	13.7	-6.1
Sudano-Sahelian	MALI	Selingue	REH	46.4	2,170	11.6	-8.2
Sudano-Sahelian	MALI	Sotuba	OPR	0.0	5	12.6	-7.9
Sudano-Sahelian	MALI	Tossaye	PLN	30.0	10	17.0	-0.6
Sudano-Sahelian	MAURITANIA	Foum Gleita	OPR	0.0	500	16.2	-12.7
Sudano-Sahelian	NIGER	Dyondyonga	PLN	26.0	10	12.3	2.5
Sudano-Sahelian	NIGER	Gambou	PLN	50.0	50	12.6	2.6
Sudano-Sahelian	NIGER	Kandadji	PLN	125.0	1,596	14.6	1.0
Sudano-Sahelian	SENEGAL	Diama	OPR	0.0	250	16.2	-16.4
Sudano-Sahelian	SUDAN	Bedden	PLN	400.0	100	4.6	31.5
Sudano-Sahelian	SUDAN	Dagash	PLN	285.0	50	19.2	32.5
Sudano-Sahelian	SUDAN	Dal I	PLN	730.0	300	21.4	30.9
Sudano-Sahelian	SUDAN	Fula I	PLN	720.0	300	11.8	28.4
Sudano-Sahelian	SUDAN	Fula II	PLN	540.0	100	3.7	32.0
Sudano-Sahelian	SUDAN	Jebel Aulia	OPR	15.2	3,500	15.2	32.5
Sudano-Sahelian	SUDAN	Kabjar	PLN	300.0	50	19.2	30.5
Sudano-Sahelian	SUDAN	Kashm Algirba	OPR	11.0	1,300	14.9	35.9
Sudano-Sahelian	SUDAN	Lakki	PLN	210.0	100	4.1	31.6
Sudano-Sahelian	SUDAN	Merowe	PLN	1,250.0	12,500	18.7	32.0
Sudano-Sahelian	SUDAN	Morgat	PLN	240.0	50	19.3	32.7
Sudano-Sahelian	SUDAN	Roseires	OPR	233.6	3,000	11.8	34.4
Sudano-Sahelian	SUDAN	Sabaloka	PLN	120.0	4	16.4	32.7
Sudano-Sahelian	SUDAN	Sennar	OPR	50.0	930	13.6	33.6
Sudano-Sahelian	SUDAN	Sherei	PLN	350.0	50	19.2	33.5
Sudano-Sahelian	SUDAN	Shukoli	PLN	210.0	100	3.9	31.8

Notes:

3. The status codes were obtained from the World Bank. OPR – operational, PLN – planned (includes plants listed as construction and proposed, REH – rehabilitated (includes plants listed as deferred, cancelled and deactivated)

5. The sources of information are from the World Bank, and internet sites.