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Trends and Outlook: Agricultural Water Management in Southern Africa

SADC AGWATER PROFILES

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2015



Introduction

The Southern Africa Development Community (SADC) Agriculture and Water (AgWater) Profiles report is one of the outputs of the research project ‘Trends and Outlook: Agricultural Water Management in Southern Africa’. This research project was implemented by the Southern Africa Regional Program of the International Water Management Institute (IWMI) as part of the Southern Africa Regional Strategic Analysis, Knowledge and Support Systems (ReSAKSS - SA) project. The study covers agricultural water management at the regional level, with a focus on national agricultural water management in Malawi, South Africa, Zambia and Zimbabwe. The research project is supported by the United States Agency for International Development’s (USAID’s) Feed the Future Program through USAID’s Southern Africa Regional Program.

This AgWater Profiles report collected data related to agriculture and water in all inland SADC countries from consultants, FAO’s Aquastat database, World Bank Development Indicators, UNDP’s Human Development Report 2014 and from national sources. The resulting country profiles synthesize national data on agriculture, water, land and population, water resources, water withdrawals, water managed area and agricultural production, as basis for analyses of trends and outlook on agricultural water management.

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1. Water use and irrigation potential in SADC countries

General outlook of irrigation potential of SADC countries			
Country	Irrigation Potential (ha)	Area equipped for irrigation (ha)	% of Irrigation potential
Angola	3,700,000	86,000	2.32
Botswana	13,000	1,439	11.07
Congo, Dem Republic of	7,000,000	10,500	0.15
Lesotho	12,500	2,637	21.10
Malawi	161,900	73,500	45.40
Mozambique	3,070,000	118,100	3.85
Namibia	14,300	7,573	52.96
South Africa	1,500,000	1,670,000	111.33
Swaziland	93,220	49,850	53.48
Tanzania, United Rep of	2,132,000	189,047	8.97
Zambia	523,000	155,900	29.81
Zimbabwe	365,600	174,000	47.59

Source: FAO. 2015. AQUASTAT website. Food and Agriculture Organization of the United Nations (FAO). Website accessed on [2015/07/15]

Water use in Southern Africa countries										
Country	Mean annual rainfall	Annual renewable water resource	Water withdrawals							
			Total	% Annual renewable water resources	Agriculture		Domestic		Industrial	
	Mm	Mm ³			Mm ³	%	Mm ³	%	Mm ³	%
Angola	1,052	184,000	480	0.3	365	76	67	14	48	10
Botswana	401	147,000	113	0.1	54	48	36	32	23	20
Lesotho	760	5,200	50	1.0	28	56	11	22	11	22
DR Congo	1,543	1,283,000	622.2	0	110	18	389.3	63	122.9	20
Malawi	1,014	187,000	936	0.5	809	86	95	10	32	4
Mauritius	2,180	2,200	360	16.4	277	77	58	16	25	7
Mozambique	969	216,000	605	0.3	540	89	53	9	12	2
Namibia	284	45,500	249	0.5	170	68	71	29	8	3
South Africa	451	50,000	13,309	26.6	9,580	72	2,281	17	1,448	11
Swaziland	778	4,500	656	14.6	630	96	11	2	16	2
Tanzania	937	89,000	1,165	1.3	1,040	89	101	9	24	2
Zambia	1,011	116,000	1,606	1.4	1,318	82	270	17	18	1
Zimbabwe	652	20,000	1,220	6.1	964	79	171	14	85	7
SADC¹		1,066,400	20,749	1.9	15,774	76	3,225	16	1,750	8

¹Excluding islands

Source: McCartney, M., Sally, H., Senzaje, A. 2003. Integrated water resources management and agriculture in Southern Africa, International Water Management Institute, Pretoria, South Africa

2. Angola Water and Agriculture Profile

General Information		
Total Population (2012)	21,472,000	inhabitants
Total Surface Area	124,670,000	ha
Population Density (2012)	16.70	people/km ²
Economically active population (2012)	7,628,708	inhabitants
Agricultural Population (2006)	11,624,000	inhabitants
Population economically active in agriculture (2012)	86	%
Human Development Index (2012)	0.381	
Agricultural land	11,624,000	ha
Arable land	3,300,000	ha
Arable and permanent cropland	3,590,000	ha
Arable land (% of land area)	3	%
Area under cereal production (2006)	1,480,400	ha
Average Precipitation	1010	mm/yr.
Internal Dam Capacity	9.445	km ³
Irrigation potential	3,700,000	ha
Total water withdrawal (2002)	0.7058	km ³
Area equipped for irrigation: total (2006)	85,530	ha
Area equipped for irrigation: actually irrigated (2006)		ha
Total agricultural water managed area (2006)	569,400	ha
Renewable Water Resources per capita (2009-2013)	39.85	m ³ /person/year

Land and Population		
Country total area	124,670,000	ha
Cultivated area (2011)	4,390,000	ha
Area under permanent crops	290,000	ha
Arable land	4,100,000	ha
Total Population (2012)	21,472,000	inhabitants
Rural Population	8,429,000	inhabitants
Urban Population	13,043,000	inhabitants
Economically active population	6,582,000	inhabitants
Economically active population in agriculture	6,582,000	inhabitants
% of economically active female pop in agriculture	54	%
% of economically active male pop in agriculture	46	%

Water resources		
Long-term average annual precipitation (Depth)	1 010	mm/year
Long-term average annual precipitation (Volume)	1 259	km ³ /year
Internal renewable water resources	148	km ³ /year
External renewable water resources	0	km ³ /year
Total renewable water resources	148.00	km ³ /year
Renewable surface water resources produced internally	145.00	km ³ /year
Renewable groundwater resources produced internally	58.00	km ³ /year
Overlap between surface water and groundwater resources	55.00	km ³ /year
Dependency ratio	0	%
Total renewable water resources per capita (2012)	7108	m ³ /year
Total dam capacity (2010)	9.445	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	0.1467	km ³
Municipal water withdrawal	0.3195	km ³
Industrial water withdrawal	0.2396	km ³
Total water withdrawal	0.7058	km ³
Total water withdrawal per capita	39.85	m ³
Surface water withdrawal		km ³
Groundwater withdrawal		km ³
Total freshwater withdrawal	0.7058	km ³
Desalinated water produced	0.0001	km ³
Total freshwater withdrawal as % of actual renewable WR		%
Agricultural water withdrawal as % of actual renewable WR		%

Water Managed Area (2002)		
Full control irrigation (2002)	85,530	ha
Surface Irrigation (2002)		ha
sprinkler irrigation (2002)		ha
localized irrigation (2002)		ha
Total area equipped for irrigation (2002)	85,530	ha
As percentage of cultivated area (2002)	2.318	%
Actually irrigated (2002)	35,000	ha
Irrigated crops (other)		ha

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	9,000	9,000	
Fertilizer consumption (metric tons)	9,500	1,400	
Fertilizer consumption (kilograms per hectare of arable land)	32.8		
Land under cereal production (hectares)	775,127	890,728	1,764,493
Agricultural machinery; tractors per 100 sq. km of arable land	31.0	30.0	
Crop production index (1999-2001 = 100)	56.0	60.9	163.4
Food production index (1999-2001 = 100)	61.0	71.1	152.6
Livestock production index (1999-2001 = 100)	72.0	104.8	114.3
Cereal yield (kg per hectare)	320.5	572.2	643.8
Agriculture value added per worker (constant 2000 US dollar)	200.1	119.2	333.3

Notes: 1 km³ = 10 m³ = 1 000 million m³; 1 ha = 1 hectare = 10 000 m²

References

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3. Botswana Water and Agriculture Profile

General Information		
Total Population (2012)	2,053,000	inhabitants
Total Surface Area	58,173,000	ha
Population Density (2012)	3.529	people/km ²
Economically active population (2012)	808,000	inhabitants
Agricultural Population (2006)	625,000	inhabitants
Population economically active in agriculture (2012)	45	%
Human Development Index (2012)	0.634	
Agricultural land	25,842,000	ha
Arable land	240,000	ha
Arable and permanent cropland	242,000	ha
Arable land (% of land area)	0.4	%
Area under cereal production (2006)	83,850	ha
Average Precipitation	416	mm/yr.
Internal Dam Capacity	0.4537	km ³
Irrigation potential	13,000	ha
Total water withdrawal (2002)	0.194	km ³
Area equipped for irrigation: total (2002)	1,439	ha
Area equipped for irrigation: actually irrigated (2002)		ha
Total agricultural water managed area (2002)	7,939	ha
Renewable Water Resources per capita (2009-2013)	5962	m ³ /person/year

Land and Population		
Country total area	58,173,000	ha
Cultivated area (2011)	261,000	ha
Area under permanent crops	2,000	ha
Arable land	259,000	ha
Total Population (2012)	2,053,000	inhabitants
Rural Population	769,000	inhabitants
Urban Population	1,284,000	inhabitants
Economically active population	808,000	inhabitants
Economically active population in agriculture	326,000	inhabitants
% of economically active female pop in agriculture	57	%
% of economically active male pop in agriculture	43	%

Water resources		
Long-term average annual precipitation (Depth)	416	mm/year
Long-term average annual precipitation (Volume)	242	km ³ /year
Internal renewable water resources	2.4	km ³ /year
External renewable water resources	9.84	km ³ /year
Total renewable water resources	12.24	km ³ /year
Renewable surface water resources produced internally	0.8	km ³ /year
Renewable groundwater resources produced internally	1.70	km ³ /year
Overlap between surface water and groundwater resources	0.10	km ³ /year
Dependency ratio	80.39	%
Total renewable water resources per capita (2012)	1198	m ³ /year
Total dam capacity (2010)	0.4537	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	0.08	km ³
Municipal water withdrawal	0.0878	km ³
Industrial water withdrawal	0.0389	km ³
Total water withdrawal	0.194	km ³
Total water withdrawal per capita	107.3	m ³
Surface water withdrawal	0.064	km ³
Groundwater withdrawal	0.130	km ³
Total freshwater withdrawal	0.194	km ³
Total freshwater withdrawal as % of actual renewable WR	1.585	%
Agricultural water withdrawal as % of actual renewable WR	0.6536	%

Water Managed Area (2002)		
Full control irrigation (2002)	1,439	ha
Surface Irrigation (2002)		ha
sprinkler irrigation (2002)		ha
localized irrigation (2002)		ha
Total area equipped for irrigation (2002)	1,439	ha
As percentage of cultivated area (2002)	0.585	%
Actually irrigated (2002)	1,381	ha
Irrigated crops (other)		

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	5,900	2,688	
Fertilizer consumption (metric tons)	900	4600	
Fertilizer consumption (kilograms per hectare of arable land)	21.50		
Land under cereal production (hectares)	205,100	189,617	111,300
Agricultural machinery; tractors per 100 sq. km of arable land	141	77	
Crop production index (1999-2001 = 100)	101.0	93.9	89.9
Food production index (1999-2001 = 100)	108.0	89.4	113.7
Livestock production index (1999-2001 = 100)	110.0	88.7	118.5
Cereal yield (kg per hectare)	265.3	130.7	543.6
Agriculture value added per worker (constant 2000 US dollar)	769.7	519.6	534.1

Notes: $1 \text{ km}^3 = 10^9 \text{ m}^3 = 1 \text{ 000 million m}^3$; $1 \text{ ha} = 1 \text{ hectare} = 10 \text{ 000 m}^2$

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4. Democratic Republic of Congo Water and Agriculture Profile

General Information		
Total Population (2012)	67,514,000	inhabitants
Total Surface Area	234,486,000	ha
Population Density (2012)	28.02	people/km ²
Economically active population (2012)	25,930,000	inhabitants
Agricultural Population (2006)	36,610,000	inhabitants
Population economically active in agriculture (2012)	61	%
Human Development Index (2012)	0.365	
Agricultural land	22,650,000	ha
Arable land	6,700,000	ha
Arable and permanent cropland	7,650,000	ha
Arable land (% of land area)	3	%
Area under cereal production (2006)	1,974,945	ha
Average Precipitation	1543	mm/yr.
Internal Dam Capacity	0.0529	km ³
Irrigation potential	360,000	ha
Total water withdrawal (2002)	0.6836	km ³
Area equipped for irrigation: total (2006)	10,000	ha
Area equipped for irrigation: actually irrigated (2006)		ha
Total agricultural water managed area (2006)		ha
Renewable Water Resources per capita (2009-2013)	19527	m ³ /person/year

Land and Population		
Country total area	234,486,000	ha
Cultivated area (2011)	7,555,000	ha
Area under permanent crops	52,000	ha
Arable land	490,000	ha
Total Population (2012)	67,514,000	inhabitants
Rural Population	43,634,000	inhabitants
Urban Population	13,880,000	inhabitants
Economically active population	25,930,296	inhabitants
Economically active population in agriculture	14,117,000	inhabitants
% of economically active female pop in agriculture	53	%
% of economically active male pop in agriculture	47	%

Water resources		
Long-term average annual precipitation (Depth)	1 543	mm/year
Long-term average annual precipitation (Volume)	3 618	km ³ /year
Internal renewable water resources	900	km ³ /year
External renewable water resources	383	km ³ /year
Total renewable water resources	1283.00	km ³ /year
Renewable surface water resources produced internally	899.00	km ³ /year
Renewable groundwater resources produced internally	421.00	km ³ /year
Overlap between surface water and groundwater resources	420.00	km ³ /year
Dependency ratio	29.85	%
Total renewable water resources per capita (2012)	13698	m ³ /year
Total dam capacity (2010)	0.0529	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	0.0719	km ³
Municipal water withdrawal	0.4649	km ³
Industrial water withdrawal	0.1468	km ³
Total water withdrawal	0.6836	km ³
Total water withdrawal per capita	12.0	m ³
Surface water withdrawal		km ³
Groundwater withdrawal		km ³
Total freshwater withdrawal	0.6836	km ³
Total freshwater withdrawal as % of actual renewable WR	0.0533	%
Agricultural water withdrawal as % of actual renewable WR	0.0056	%

Water Managed Area (2002)		
Full control irrigation (2002)	10,000	ha
Surface Irrigation (2002)		ha
sprinkler irrigation (2002)		ha
localized irrigation (2002)		ha
Total area equipped for irrigation (2002)	10,000	ha
As percentage of cultivated area (2002)	0.1382	%
Actually irrigated (2002)		ha
Irrigated crops (other)	3,000	ha

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	700	700	
Fertilizer consumption (metric tons)	1,575	5,000	
Fertilizer consumption (kilograms per hectare of arable land)	32.9		
Land under cereal production (hectares)	9,633	12,976	31,775
Agricultural machinery; tractors per 100 sq. km of arable land	14.6	14.3	
Crop production index (1999-2001 = 100)	81.0	87.2	115.1
Food production index (1999-2001 = 100)	79.0	83.3	125.3
Livestock production index (1999-2001 = 100)	73.0	67.3	157.3
Cereal yield (kg per hectare)	624.3	767.0	785.2
Agriculture value added per worker (constant 2000 US dollar)		340.9	

Notes: $1 \text{ km}^3 = 10^9 \text{ m}^3 = 1 \text{ 000 million m}^3$; $1 \text{ ha} = 1 \text{ hectare} = 10 \text{ 000 m}^2$

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World Bank, 2015. World Development Indicators 2015. Washington, DC. <http://data.worldbank.org/sites/default/files/wdi-book.pdf>. [Accessed on 19 April 2014].

5. Lesotho Water and Agriculture Profile

General Information		
Total Population (2012)	2,217,000	inhabitants
Total Surface Area	3,036,000	ha
Population Density (2012)	73.02	people/km ²
Economically active population (2012)	855,110	inhabitants
Agricultural Population (2006)	752,000	inhabitants
Population economically active in agriculture (2012)	43	%
Human Development Index (2012)	0.456	
Agricultural land	2,304,000	ha
Arable land	300,000	ha
Arable and permanent cropland	304,000	ha
Arable land (% of land area)	10	%
Area under cereal production (2006)	158,040	ha
Average Precipitation	788	mm/yr.
Internal Dam Capacity	2.82	km ³
Irrigation potential	12,500	ha
Total water withdrawal (2002)	21.79	km ³
Area equipped for irrigation: total (2006)	2,637	ha
Area equipped for irrigation: actually irrigated (2006)	67	ha
Total agricultural water managed area (2006)	2,637	ha
Renewable Water Resources per capita (2009-2013)	1363	m ³ /person/year

Land and Population		
Country total area	3,036,000	ha
Cultivated area (2011)	312,000	ha
Area under permanent crops	4,000	ha
Arable land	308,000	ha
Total Population (2012)	2,217,000	inhabitants
Rural Population	1,588,000	inhabitants
Urban Population	629,000	inhabitants
Economically active population	855,110	inhabitants
Economically active population in agriculture	368,000	inhabitants
% of economically active female pop in agriculture	65	%
% of economically active male pop in agriculture	35	%

Water resources		
Long-term average annual precipitation (Depth)	788	mm/year
Long-term average annual precipitation (Volume)	24	km ³ /year
Internal renewable water resources	5.23	km ³ /year
External renewable water resources	-2.208	km ³ /year
Total renewable water resources	3.02	km ³ /year
Renewable surface water resources produced internally	5.23	km ³ /year
Renewable groundwater resources produced internally	0.50	km ³ /year
Overlap between surface water and groundwater resources	0.50	km ³ /year
Dependency ratio	0	%
Total renewable water resources per capita (2012)	2549	m ³ /year
Total dam capacity (2010)	2.82	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	0.0038	km ³
Municipal water withdrawal	0.02	km ³
Industrial water withdrawal	0.02	km ³
Total water withdrawal	0.0438	km ³
Total water withdrawal per capita	21.79	m ³
Surface water withdrawal		km ³
Groundwater withdrawal		km ³
Total freshwater withdrawal	0.0438	km ³
Total freshwater withdrawal as % of actual renewable WR	1.449	%
Agricultural water withdrawal as % of actual renewable WR	0.1257	%

Water Managed Area (2002)		
Full control irrigation (2002)	2,637	ha
Surface Irrigation (2002)		ha
sprinkler irrigation (2002)		ha
localized irrigation (2002)		ha
Total area equipped for irrigation (2002)	2,637	ha
As percentage of cultivated area (2002)	0.8674	%
Actually irrigated (2002)	67	ha
Irrigated crops (other)		ha

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	1,830	2,000	
Fertilizer consumption (metric tons)	4,600	7,994	
Fertilizer consumption (kilograms per hectare of arable land)	145.1		
Land under cereal production (hectares)	233,450	208,295	190,512
Agricultural machinery; tractors per 100 sq. km of arable land	57.7	60.6	
Crop production index (1999-2001 = 100)	98.0	112.7	117.8
Food production index (1999-2001 = 100)	93.0	109.2	113.3
Livestock production index (1999-2001 = 100)	92.0	103.4	109.3
Cereal yield (kg per hectare)	1,036.2	718.3	908.9
Agriculture value added per worker (constant 2000 US dollar)	302.0	247.8	214.6

Notes: $1 \text{ km}^3 = 10 \text{ m}^3 = 1 \text{ 000 million m}^3$; $1 \text{ ha} = 1 \text{ hectare} = 10 \text{ 000 m}^2$

References

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6. Malawi Water and Agriculture Profile

General Information		
Total Population (2012)	15,883,000	inhabitants
Total Surface Area	11,848,000	ha
Population Density (2012)	134.1	people/km ²
Economically active population (2012)	5,780,000	inhabitants
Agricultural Population (2006)	10,109,000	inhabitants
Population economically active in agriculture (2012)	81	%
Human Development Index (2012)	0.388	
Agricultural land	4,970,000	ha
Arable land	3,000,000	ha
Arable and permanent cropland	3,120,000	ha
Arable land (% of land area)	32	%
Area under cereal production (2006)	1,786,660	ha
Average Precipitation	1,181	mm/yr.
Internal Dam Capacity	0.0418	km ³
Irrigation potential	161,900	ha
Total water withdrawal (2002)	1.357	km ³
Area equipped for irrigation: total (2006)	73,500	ha
Area equipped for irrigation: actually irrigated (2006)		ha
Total agricultural water managed area (2006)	118,300	ha
Renewable Water Resources per capita (2009-2013)	1088	m ³ /year

Land and Population		
Country total area	11,848,000	ha
Cultivated area (2011)	3,730,000	ha
Area under permanent crops	122,000	ha
Arable land	3,608,000	ha
Total Population (2012)	15,883,000	inhabitants
Rural Population	12,576,000	inhabitants
Urban Population	3,207,000	inhabitants
Economically active population	5,780,000	inhabitants
Economically active population in agriculture	5,221,000	inhabitants
% of economically active female pop in agriculture	59	%
% of economically active male pop in agriculture	41	%

Water resources		
Long-term average annual precipitation (Depth)	1 181	mm/year
Long-term average annual precipitation (Volume)	139.9	km ³ /year
Internal renewable water resources	16.14	km ³ /year
External renewable water resources	1.14	km ³ /year
Total renewable water resources	17.28	km ³ /year
Renewable surface water resources produced internally	16.14	km ³ /year
Renewable groundwater resources produced internally	2.50	km ³ /year
Overlap between surface water and groundwater resources	2.50	km ³ /year
Dependency ratio	6.597	%
Total renewable water resources per capita (2012)	1015	m ³ /year
Total dam capacity (2010)	0.0418	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	1.166	km ³
Municipal water withdrawal	0.1431	km ³
Industrial water withdrawal	0.0477	km ³
Total water withdrawal	1.357	km ³
Total water withdrawal per capita	99.86	m ³
Surface water withdrawal	1.005	km ³
Groundwater withdrawal	0.470	km ³
Total freshwater withdrawal	1.475	km ³
Total freshwater withdrawal as % of actual renewable WR	7.853	%
Agricultural water withdrawal as % of actual renewable WR	6.748	%

Water Managed Area		
Full control irrigation (2013)	99,975	ha
Surface Irrigation (2013)		ha
sprinkler irrigation (2013)		ha
localized irrigation (2013)		ha
Total area equipped for irrigation (2013)	99,975	ha
As percentage of cultivated area (2013)	2.53	%
Actually irrigated (2013)	97,115	ha
Irrigated crops (other)	16,900	ha

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	1,400	1,430	
Fertilizer consumption (metric tons)	48,000	49,791	
Fertilizer consumption (kilograms per hectare of arable land)	264.50		
Land under cereal production (hectares)	1,425,342	1,570,308	1,831,200
Agricultural machinery; tractors per 100 sq. km of arable land	6	5	
Crop production index (1999-2001 = 100)	55.0	98.7	167.8
Food production index (1999-2001 = 100)	48.0	101.6	163.2
Livestock production index (1999-2001 = 100)	78.0	85.3	162.4
Cereal yield (kg per hectare)	991.5	1,675.5	2,205.7
Agriculture value added per worker (constant 2000 US dollar)	88.6	159.1	168.6

Notes: $1 \text{ km}^3 = 10^9 \text{ m}^3 = 1 \text{ 000 million m}^3$; $1 \text{ ha} = 1 \text{ hectare} = 10 \text{ 000 m}^2$

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7. Mozambique Water and Agriculture Profile

General Information		
Total Population (2012)	24,475,000	inhabitants
Total Surface Area	79,938,000	ha
Population Density (2012)	30.62	people/km ²
Economically active population (2012)	10,041,000	inhabitants
Agricultural Population (2006)	15,752,000	inhabitants
Population economically active in agriculture (2012)	52	%
Human Development Index (2012)	0.327	
Agricultural land	48,930,000	ha
Arable land	4,450,000	ha
Arable and permanent cropland	4,930,000	ha
Arable land (% of land area)	6	%
Area under cereal production (2006)	2,257,200	ha
Average Precipitation	1,032	mm/yr.
Internal Dam Capacity	825	km ³
Irrigation potential	3,070,000	ha
Total water withdrawal (2002)	0.8842	km ³
Area equipped for irrigation: total (2006)	118,100	ha
Area equipped for irrigation: actually irrigated (2006)	40,060	ha
Total agricultural water managed area (2006)	118,100	ha
Renewable Water Resources per capita (2009-2013)	8870	m ³ /person/year

Land and Population		
Country total area	79,938,000	ha
Cultivated area (2011)	5,400,000	ha
Area under permanent crops	250,000	ha
Arable land	5,150,000	ha
Total Population (2012)	24,475,000	inhabitants
Rural Population	16,496,000	inhabitants
Urban Population	7,979,000	inhabitants
Economically active population	10,041,000	inhabitants
Economically active population in agriculture	9,048,000	inhabitants
% of economically active female pop in agriculture	60	%
% of economically active male pop in agriculture	40	%

Water resources		
Long-term average annual precipitation (Depth)	1 032	mm/year
Long-term average annual precipitation (Volume)	825	km ³ /year
Internal renewable water resources	100.3	km ³ /year
External renewable water resources	116.8	km ³ /year
Total renewable water resources	217.1	km ³ /year
Renewable surface water resources produced internally	97.3	km ³ /year
Renewable groundwater resources produced internally	17.00	km ³ /year
Overlap between surface water and groundwater resources	14.00	km ³ /year
Dependency ratio	53.8	%
Total renewable water resources per capita (2012)	3980	m ³ /year
Total dam capacity (2010)	77.47	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	0.69	km ³
Municipal water withdrawal	0.2537	km ³
Industrial water withdrawal	0.0362	km ³
Total water withdrawal	0.8842	km ³
Total water withdrawal per capita	46.05	m ³
Surface water withdrawal		km ³
Groundwater withdrawal		km ³
Total freshwater withdrawal	0.8842	km ³
Total freshwater withdrawal as % of actual renewable WR	0.4073	%
Agricultural water withdrawal as % of actual renewable WR	0.3178	%

Water Managed Area (2002)		
Full control irrigation (2002)	118,100	ha
Surface Irrigation (2002)		ha
sprinkler irrigation (2002)		ha
localized irrigation (2002)		ha
Total area equipped for irrigation (2002)	118,100	ha
As percentage of cultivated area (2002)	2.513	%
Actually irrigated (2002)	40,060	ha
Irrigated crops (other)		

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	5,000	5,300	
Fertilizer consumption (metric tons)	2,600	14,300	
Fertilizer consumption (kilograms per hectare of arable land)	7.50		
Land under cereal production (hectares)	1,549,497	1,828,385	2,490,700
Agricultural machinery; tractors per 100 sq. km of arable land	15	14	
Crop production index (1999-2001 = 100)	71.0	79.5	117.8
Food production index (1999-2001 = 100)	75.0	90.7	113.4
Livestock production index (1999-2001 = 100)	84.0	108.2	100.7
Cereal yield (kg per hectare)	473.9	868.0	1006.0
Agriculture value added per worker (constant 2000 US dollar)	131.9	125.1	233.9

Notes: 1 km³ = 10 m³ = 1 000 million m³; 1 ha = 1 hectare = 10 000 m

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8. Namibia Water and Agriculture Profile

General Information		
Total Population (2012)	2,303,000	inhabitants
Total Surface Area	82,429,000	ha
Population Density (2012)	2.741	people/km ²
Economically active population (2012)	838,159	inhabitants
Agricultural Population (2006)	905,000	inhabitants
Population economically active in agriculture (2012)	31	%
Human Development Index (2012)	0.606	
Agricultural land	38,820,000	ha
Arable land	800,000	ha
Arable and permanent cropland	820,000	ha
Arable land (% of land area)	1	%
Area under cereal production (2006)	296,872	ha
Average Precipitation	285	mm/yr.
Internal Dam Capacity	0.709	km ³
Irrigation potential	14,300	ha
Total water withdrawal (2002)	0.288	km ³
Area equipped for irrigation: total (2006)	7,573	ha
Area equipped for irrigation: actually irrigated (2006)		ha
Total agricultural water managed area (2006)	9.573	ha
Renewable Water Resources per capita (2009-2013)	7844	m ³ /person/year

Land and Population		
Country total area	82,429,000	ha
Cultivated area (2011)	809,000	ha
Area under permanent crops	8,000	ha
Arable land	800,000	ha
Total Population (2012)	2,303,000	inhabitants
Rural Population	1,393,000	inhabitants
Urban Population	910,000	inhabitants
Economically active population	838,159	inhabitants
Economically active population in agriculture	260,000	inhabitants
% of economically active female pop in agriculture	41	%
% of economically active male pop in agriculture	59	%

Water resources		
Long-term average annual precipitation (Depth)	285	mm/year
Long-term average annual precipitation (Volume)	235	km ³ /year
Internal renewable water resources	6.16	km ³ /year
External renewable water resources	11.56	km ³ /year
Total renewable water resources	17.72	km ³ /year
Renewable surface water resources produced internally	4.10	km ³ /year
Renewable groundwater resources produced internally	2.10	km ³ /year
Overlap between surface water and groundwater resources	0.04	km ³ /year
Dependency ratio	65.24	%
Total renewable water resources per capita (2012)	2727	m ³ /year
Total dam capacity (2010)	0.709	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	0.201	km ³
Municipal water withdrawal	0.073	km ³
Industrial water withdrawal	0.014	km ³
Total water withdrawal	0.288	km ³
Total water withdrawal per capita	147.1	m ³
Surface water withdrawal	0.165	km ³
Groundwater withdrawal	0.132	km ³
Total freshwater withdrawal	0.2877	km ³
Desalinated water produced	0.0003	km ³
Direct use of treated wastewater	0.0058	km ³
Total freshwater withdrawal as % of actual renewable WR	1.624	%
Agricultural water withdrawal as % of actual renewable WR	1.134	%

Water Managed Area (2002)		
Full control irrigation (2002)	7,573	ha
Surface Irrigation (2002)		ha
sprinkler irrigation (2002)		ha
localized irrigation (2002)		ha
Total area equipped for irrigation (2002)	1,573	ha
As percentage of cultivated area (2002)	0.9235	%
Actually irrigated (2002)	6,140	ha
Irrigated crops (other)	2,000	ha

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	2,000	2,000	
Fertilizer consumption (metric tons)	0	300	
Fertilizer consumption (kilograms per hectare of arable land)	0.0		
Land under cereal production (hectares)	214,180	323,766	309,900
Agricultural machinery; tractors per 100 sq. km of arable land	30.3	24.5	
Crop production index (1999-2001 = 100)	77.0	78.4	111.1
Food production index (1999-2001 = 100)	101.0	84.7	94.1
Livestock production index (1999-2001 = 100)	104.0	87.0	87.4
Cereal yield (kg per hectare)	457.3	373.7	372.7
Agriculture value added per worker (constant 2000 US dollar)	1,267.3	1,663.6	880.6

Notes: $1 \text{ km}^3 = 10^9 \text{ m}^3 = 1 \text{ 000 million m}^3$; $1 \text{ ha} = 1 \text{ hectare} = 10 \text{ 000 m}^2$

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9. South Africa Water and Agriculture Profile

General Information		
Total Population (2012)	50,738,000	inhabitants
Total Surface Area	121,909,000	ha
Population Density (2012)	41.62	people/km ²
Economically active population (2012)	17,950,000	inhabitants
Agricultural Population (2006)	5,626,000	inhabitants
Population economically active in agriculture	1,121,000	inhabitants
Human Development Index (2012)	0.629	
Agricultural land	99,378,000	ha
Arable land	14,500,000	ha
Arable and permanent cropland	15,450,000	ha
Arable land (% of land area)	12	%
Area under cereal production (2006)	3,011,176	ha
Average Precipitation	495.00	mm/yr.
Internal Dam Capacity	30.53	km ³
Irrigation potential	1,500,000	ha
Total water withdrawal	12,50	km ³
Area equipped for irrigation: total (2012)	1,670,000	ha
Area equipped for irrigation: actually irrigated (2011)	1,670,000	ha
Total agricultural water managed area (2011)	1,670,000	ha
Renewable Water Resources per capita (2009-2013)	869	m ³ /person/year

Land and Population		
Country total area	121,909,000	ha
Cultivated area (2012)	12,446,000	ha
Area under permanent crops	950,000	ha
Arable land	11,496,000	ha
Total Population (2012)	50,738,000	inhabitants
Rural Population	18,938,000	inhabitants
Urban Population	31,800,000	inhabitants
Economically active population	17,950,000	inhabitants
Economically active population in agriculture	1,121,000	inhabitants
% of economically active female pop in agriculture	36	%
% of economically active male pop in agriculture	64	%

Water resources		
Long-term average annual precipitation (Depth)	495	mm/year
Long-term average annual precipitation (Volume)	603.4	km ³ /year
Internal renewable water resources	44.8	km ³ /year
External renewable water resources	6.6	km ³ /year
Total actual renewable water resources	51.4	km ³ /year
Renewable surface water resources produced internally	43.00	km ³ /year
Renewable groundwater resources produced internally	4.80	km ³ /year
Overlap between surface water and groundwater resources	3.00	km ³ /year
Dependency ratio	12.84	%
Total renewable water resources per capita (2012)	855.2	m ³ /year
Total dam capacity (2010)	30.53	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	7.836	km ³
Municipal water withdrawal	4.893	km ³
Industrial water withdrawal	0.95	km ³
Total water withdrawal	12.5	km ³
Total water withdrawal per capita	271.7	m ³
Surface water withdrawal	11.5	km ³
Groundwater withdrawal	1.0	km ³
Total freshwater withdrawal	12.5	km ³
Total freshwater withdrawal as % of actual renewable WR	24.2	%
Agricultural water withdrawal as % of actual renewable WR	15.25	%

Water Managed Area (2012)		
Full control irrigation (2012)	1,670,000	ha
Surface Irrigation (2012)	385,000	ha
sprinkler irrigation (2012)	920,000	ha
localized irrigation (2012)	365,000	ha
Total area equipped for irrigation (2012)	1,670,000	ha
As percentage of cultivated area (2012)	13.42	%
Actually irrigated (2012)	1,670,000	ha
Irrigated crops (other)		

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	145,000	72,300	
Fertilizer consumption (metric tons)	785,087	740,300	
Fertilizer consumption (% of fertilizer production)			
Fertilizer consumption (kilograms per hectare of arable land)	584.1		
Land under cereal production (hectares)	6,162,900	5,272,460	3,540,175
Agricultural machinery; tractors per 100 sq. km of arable land	107.9	49.0	
Crop production index (1999-2001 = 100)	86.0	102.5	107.1
Food production index (1999-2001 = 100)	87.0	95.5	121.3
Livestock production index (1999-2001 = 100)	93.0	89.3	135.4
Cereal yield (kg per hectare)	1,876.6	2,755.3	4,161.8

Notes: $1 \text{ km}^3 = 10^9 \text{ m}^3 = 1 \text{ 000 million m}^3$; $1 \text{ ha} = 1 \text{ hectare} = 10 \text{ 000 m}^2$

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10. Swaziland Water and Agriculture Profile

General Information		
Total Population (2012)	1,220,000	inhabitants
Total Surface Area	1,736,000	ha
Population Density (2012)	70.28	people/km ²
Economically active population (2012)	435,475	inhabitants
Agricultural Population (2006)	345,000	inhabitants
Population economically active in agriculture (2012)	137,000	%
Human Development Index (2012)	0.536	
Agricultural land	1,342,000	ha
Arable land	178,000	ha
Arable and permanent cropland	192,000	ha
Arable land (% of land area)	10	%
Area under cereal production (2006)	60,250	ha
Average Precipitation	788	mm/yr.
Internal Dam Capacity	0.585	km ³
Irrigation potential	93,220	ha
Total water withdrawal (2002)	1.042	km ³
Area equipped for irrigation: total (2006)	49,850	ha
Area equipped for irrigation: actually irrigated (2006)	44,840	ha
Total agricultural water managed area (2006)	49,850	ha
Renewable Water Resources per capita (2009-2013)	3697	m ³ /person/year

Land and Population		
Country total area	1,736,000	ha
Cultivated area (2011)	190,000	ha
Area under permanent crops	14,000	ha
Arable land	176,000	ha
Total Population (2012)	1,220,000	inhabitants
Rural Population	960,000	inhabitants
Urban Population	260,000	inhabitants
Economically active population	435,475	inhabitants
Economically active population in agriculture	137,000	inhabitants
% of economically active female pop in agriculture	54	%
% of economically active male pop in agriculture	46	%

Water resources		
Long-term average annual precipitation (Depth)	788	mm/year
Long-term average annual precipitation (Volume)	14	km ³ /year
Internal renewable water resources	2.64	km ³ /year
External renewable water resources	1.87	km ³ /year
Total renewable water resources	4.51	km ³ /year
Renewable surface water resources produced internally	2.64	km ³ /year
Renewable groundwater resources produced internally	0.66	km ³ /year
Overlap between surface water and groundwater resources	0.66	km ³ /year
Dependency ratio	41.46	%
Total renewable water resources per capita (2012)	2145	m ³ /year
Total dam capacity (2010)	0.585	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	1.0060	km ³
Municipal water withdrawal	0.0413	km ³
Industrial water withdrawal	0.0207	km ³
Total water withdrawal	1.042	km ³
Total water withdrawal per capita	962.1	m ³
Surface water withdrawal		km ³
Groundwater withdrawal		km ³
Total freshwater withdrawal	1.042	km ³
Total freshwater withdrawal as % of actual renewable WR	23.1	%
Agricultural water withdrawal as % of actual renewable WR	22.31	%

Water Managed Area (2002)		
Full control irrigation (2002)	49.85	ha
Surface Irrigation (2002)		ha
sprinkler irrigation (2002)		ha
localized irrigation (2002)		ha
Total area equipped for irrigation (2002)	49.85	ha
As percentage of cultivated area (2002)	25.96	%
Actually irrigated (2002)	45	ha
Irrigated crops (other)		ha

<i>Agricultural production</i>	<i>1990</i>	<i>2000</i>	<i>2010</i>
Agricultural machinery; tractors	4,120	3,913	
Fertilizer consumption (metric tons)	13,397	5,800	
Fertilizer consumption (kilograms per hectare of arable land)	744.3		
Land under cereal production (hectares)	85,727	69,896	56,235
Agricultural machinery; tractors per 100 sq. km of arable land	228.9	219.8	
Crop production index (1999-2001 = 100)	112.0	88.7	101.7
Food production index (1999-2001 = 100)	105.0	87.1	104.2
Livestock production index (1999-2001 = 100)	108.0	88.3	111.8
Cereal yield (kg per hectare)	1,277.6	1,628	1,225.7
Agriculture value added per worker (constant 2000 US dollar)	1,025.2	1,032.1	1,213.2

Notes: 1 km³ = 10 m³ = 1 000 million m³; 1 ha = 1 hectare = 10 000 m²

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11. Tanzania Water and Agriculture Profile

General Information		
Total Population (2012)	47,656,000	inhabitants
Total Surface Area	94,730,000	ha
Population Density (2012)	50.31	people/km ²
Economically active population (2012)	23,505,000	inhabitants
Agricultural Population (2006)	29,672,000	inhabitants
Population economically active in agriculture (2012)	76	%
Human Development Index (2012)	0.476	
Agricultural land	34,750,000	ha
Arable land	9,500,000	ha
Arable and permanent cropland	10,750,000	ha
Arable land (% of land area)	11	%
Area under cereal production (2006)	4,915,000	ha
Average Precipitation	1,071	mm/yr.
Internal Dam Capacity	104.2	km ³
Irrigation potential	2,132,000	ha
Total water withdrawal (2002)	144.7	km ³
Area equipped for irrigation: total (2006)	189,047	ha
Area equipped for irrigation: actually irrigated (2006)		ha
Total agricultural water managed area (2006)	184,330	ha
Renewable Water Resources per capita (2009-2013)	2020	m ³ /person/year

Land and Population		
Country total area	94,730,000	ha
Cultivated area (2011)	13,300,000	ha
Area under permanent crops	170,000	ha
Arable land	13,130,000	ha
Total Population (2012)	47,656,000	inhabitants
Rural Population	34,623,000	inhabitants
Urban Population	13,033,000	inhabitants
Economically active population	23,505,000	inhabitants
Economically active population in agriculture	17,805,000	inhabitants
% of economically active female pop in agriculture	54	%
% of economically active male pop in agriculture	46	%

Water resources		
Long-term average annual precipitation (Depth)	1 071	mm/year
Long-term average annual precipitation (Volume)	1 015	km ³ /year
Internal renewable water resources	84	km ³ /year
External renewable water resources	12.27	km ³ /year
Total renewable water resources	96.27	km ³ /year
Renewable surface water resources produced internally	80.00	km ³ /year
Renewable groundwater resources produced internally	30.00	km ³ /year
Overlap between surface water and groundwater resources	26.00	km ³ /year
Dependency ratio	12.75	%
Total renewable water resources per capita (2012)	1758	m ³ /year
Total dam capacity (2010)	104.2	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	4.632	km ³
Municipal water withdrawal	0.5270	km ³
Industrial water withdrawal	0.0250	km ³
Total water withdrawal	5.184	km ³
Total water withdrawal per capita	144.7	m ³
Surface water withdrawal		km ³
Groundwater withdrawal		km ³
Total freshwater withdrawal	5.184	km ³
Total freshwater withdrawal as % of actual renewable WR	5.385	%
Agricultural water withdrawal as % of actual renewable WR	4.811	%

Water Managed Area (2002)		
Full control irrigation (2002)	184,300	ha
Surface Irrigation (2002)		ha
sprinkler irrigation (2002)		ha
localized irrigation (2002)		ha
Total area equipped for irrigation (2002)	184,300	ha
As percentage of cultivated area (2002)	1.807	%
Actually irrigated (2002)		ha
Irrigated crops (other)		ha

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	7,365	16,300	
Fertilizer consumption (metric tons)	46,800	22,404	
Fertilizer consumption (kilograms per hectare of arable land)	52.00		
Land under cereal production (hectares)	2,629,270	2,513,546	5,018,900
Agricultural machinery; tractors per 100 sq. km of arable land	8	19	
Crop production index (1999-2001 = 100)	92.0	63.9	109.3
Food production index (1999-2001 = 100)	87.0	69.7	108.9
Livestock production index (1999-2001 = 100)	75.0	77.0	111.1
Cereal yield (kg per hectare)	1,506.2	1,441.3	1,332.5
Agriculture value added per worker (constant 2000 US dollar)	262.4	235.2	288.6

Notes: $1 \text{ km}^3 = 10^9 \text{ m}^3 = 1 \text{ 000 million m}^3$; $1 \text{ ha} = 1 \text{ hectare} = 10 \text{ 000 m}^2$

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12. Zambia Water and Agriculture Profile

General Information		
Total Population (2012)	14,365,000	inhabitants
Total Surface Area	75,261,000	ha
Population Density (2012)	18.45	people/km ²
Economically active population (2012)	5,386,000	inhabitants
Agricultural Population (2006)	4,629,000	inhabitants
Population economically active in agriculture (2012)	61	%
Human Development Index (2012)	0.39	
Agricultural land	25,589,000	ha
Arable land	5,260,000	ha
Arable and permanent cropland	5,289,000	ha
Arable land (% of land area)	7	%
Area under cereal production (2006)	928,600	ha
Average Precipitation	1,020	mm/yr.
Internal Dam Capacity	101.1	km ³
Irrigation potential	523,000	ha
Total water withdrawal	1.57	km ³
Area equipped for irrigation: total (2002)	155,900	ha
Area equipped for irrigation: actually irrigated (2002)	155,900	ha
Total agricultural water managed area (2002)	255,900	ha
Renewable Water Resources per capita (2009-2013)	7,577	m ³ /person/year

Land and Population		
Country total area	75,261,000	ha
Cultivated area (2011)	3,435,000	ha
Area under permanent crops	29,000	ha
Arable land	3,406,000	ha
Wetland area	3,600,000	ha
Total Population (2012)	14,365,000	inhabitants
Rural Population	8,866,000	inhabitants
Urban Population	5,499,000	inhabitants
Economically active population	5,386,000	inhabitants
Economically active population in agriculture	3,388,000	inhabitants
% of economically active female pop in agriculture	48	%
% of economically active male pop in agriculture	52	%

Water resources		
Long-term average annual precipitation (Depth)	1 020	mm/year
Long-term average annual precipitation (Volume)	767.7	km ³ /year
Internal renewable water resources	80.2	km ³ /year
External renewable water resources	25	km ³ /year
Total actual renewable water resources	105.2	km ³ /year
Renewable surface water resources produced internally	80.2	km ³ /year
Renewable groundwater resources produced internally	47.00	km ³ /year
Overlap between surface water and groundwater resources	47.00	km ³ /year
Dependency ratio	23.76	%
Total renewable water resources per capita (2012)	5698	m ³ /year
Total dam capacity (2010)	101.1	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	1.152	km ³
Municipal water withdrawal	0.290	km ³
Industrial water withdrawal	0.130	km ³
Total water withdrawal	1.572	km ³
Total water withdrawal per capita	147	m ³
Surface water withdrawal	1.68	km ³
Groundwater withdrawal	0.067	km ³
Total freshwater withdrawal	1.572	km ³
Total freshwater withdrawal as % of actual renewable WR	1.494	%
Agricultural water withdrawal as % of actual renewable WR	1.095	%

Water Managed Area (2002)		
Full control irrigation (2002)	55,390	ha
Surface Irrigation (2002)	32,190	ha
sprinkler irrigation (2002)	17,570	ha
localized irrigation (2002)	56,280	ha
Total area equipped for irrigation (2002)	155,900	ha
As percentage of cultivated area (2002)	6	%
Actually irrigated (2002)	155,900	ha
Irrigated crops (other)		

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	5,900	6,000	
Fertilizer consumption (metric tons)	59,500	31,391	
Fertilizer consumption (kilograms per hectare of arable land)	113.40		
Land under cereal production (hectares)	895,163	718,116	1,216,165
Agricultural machinery; tractors per 100 sq. km of arable land	11	11	
Crop production index (1999-2001 = 100)	81.0	73.2	161.0
Food production index (1999-2001 = 100)	87.0	85.7	143.6
Livestock production index (1999-2001 = 100)	83.0	90.6	108.7
Cereal yield (kg per hectare)	1,352	1,682.3	2,547
Agriculture value added per worker (constant 2000 US dollar)	211.5	239.7	214.1

Notes: 1 km³ = 10 m³ = 1 000 million m³; 1 ha = 1 hectare = 10 000 m²

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13. Zimbabwe Water and Agriculture Profile

General Information		
Total Population	13,724,317	inhabitants
Total Surface Area	39,076,000	ha
Population Density	35.00	people/km ²
Economically active population	6,776,895	inhabitants
Agricultural Population	3,555,000	inhabitants
Population economically active in agriculture	53	%
Human Development Index	0.49	
Agricultural land	15,450,000	ha
Arable land	4,090,000	ha
Arable and permanent cropland	3,350,000	ha
Arable land (% of land area)	8.00	%
Area under cereal production	2,256,884	ha
Average Precipitation	657.00	mm/yr.
Internal Dam Capacity (Excluding Kariba Dam half share)	99	km ³
Irrigation potential (1000 ha)	365,600	ha
Total water withdrawal	4,205	km ³
Area equipped for irrigation: total (2011)	174,000	ha
Area equipped for irrigation: actually irrigated (2011)	123,900	ha
Total agricultural water managed area (2011)	193,513	ha
Renewable Water Resources per capita (1960-2007)	1,547	m ³ /person/year

Land and Population		
Country total area	39,076,000	ha
Cultivated area (2012)	4,220,000	ha
Area under permanent crops	130,000	ha
Arable land	4,090,000	ha
Total Population (2012)	13,724,317	inhabitants
Rural Population	7,901,000	inhabitants
Urban Population	5,823,000	inhabitants
Economically active population	6,776,895	inhabitants
Economically active population in agriculture	3,555,000	inhabitants
% of economically active female pop in agriculture	56	%
% of economically active male pop in agriculture	44	%

Water resources		
Long-term average annual precipitation (Depth)	657	mm/year
Long-term average annual precipitation (Volume)	256.7	km ³ /year
Internal renewable water resources	12.26	km ³ /year
External renewable water resources	7.74	km ³ /year
Total actual renewable water resources	20	km ³ /year
Renewable surface water resources produced internally	11.26	km ³ /year
Renewable groundwater resources produced internally	6.00	km ³ /year
Overlap between surface water and groundwater resources	5.00	km ³ /year
Dependency ratio	38.7	%
Total renewable water resources per capita (2012)	893.3	m ³ /year
Total dam capacity including Kariba Dam half share	103	km ³

Water withdrawal (2002)		
Agricultural water withdrawal	3.32	km ³
Municipal water withdrawal	0.59	km ³
Industrial water withdrawal	0.30	km ³
Total water withdrawal	4.21	km ³
Total water withdrawal per capita	333.5	m ³
Surface water withdrawal	3.785	km ³
Groundwater withdrawal	0.42	km ³
Total freshwater withdrawal	4.21	km ³
Total freshwater withdrawal as % of actual renewable WR	21.02	%
Agricultural water withdrawal as % of actual renewable WR	16.59	%

Water Managed Area		
Full control irrigation (2012)	173,500	ha
Surface Irrigation (2012)		ha
sprinkler irrigation (2012)		ha
localized irrigation (2012)		ha
Total area equipped for irrigation (2012)	173,000	ha
As percentage of cultivated area (2012)	4.627	%
Actually irrigated (2012)	123,900	ha
Irrigated crops (other)	20,000	ha

Agricultural production	1990	2000	2010
Agricultural machinery; tractors	17,380	24,000	
Fertilizer consumption (metric tons)	167,685	165,300	
Fertilizer consumption (% of fertilizer production)			
Fertilizer consumption (kilograms per hectare of arable land)	580.2		
Land under cereal production (hectares)	1,576,058	1,793,790	1,901,777
Agricultural machinery; tractors per 100 sq. km of arable land	60.1	74.3	
Crop production index (1999-2001 = 100)	77.0	158.7	88.9
Food production index (1999-2001 = 100)	91.0	111.8	95.6
Livestock production index (1999-2001 = 100)	88.0	96.7	107.4
Cereal yield (kg per hectare)	1,625.4	1,404.5	751.5

Notes: 1 km³ = 10 m³ = 1 000 million m³; 1 ha = 1 hectare = 10 000 m²

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