Statistics South Africa

Natural resource accounts

Water accounts for nineteen water management areas

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PREFACE

This report contains the first water accounts (in physical terms) for the water management areas of South Africa for the hydrology year 2000, i.e. 1 October 1999 to 30 September 2000, constructed according to the recommendations of the United Nations. It is presented as a Satellite Account to the 1993 System of National Accounts (1993 SNA), which Statistics South Africa (Stats SA) has been implementing since 1995. Satellite accounts provide a framework linked to the central accounts and enable attention to be focused on a certain field or aspect of economic and social life in the context of national accounts: examples are satellite accounts for the environment, tourism or unpaid household work.

This report presents a set of natural resource accounts for South Africa's 19 water management areas, which can be aggregated to South Africa's total water resources. It forms part of the work Stats SA is currently doing on natural resource accounting (environmental accounting), this being a new endeavour in South Africa.

Through initiatives such as this one Stats SA is contributing to the principles of sustainable development.

pp

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Statistician-General

Pretoria
January 2004

CONTENTS

LIST OF TABLES

Water asset accounts

LIST OF FIGURES

INTERPRETIVE SUMMARY

The compilation of Water Accounts is crucial in a country such as South Africa, given the fact that 90% of South Africa's precipitation is used in a process of evapotranspiration[1], whilst the remaining 10% is available as run-off in rivers (Department of Water Affairs and Forestry, 2000a). Water accounts can be used as an important tool to design policies in order to address key focus areas of government, sustainable development being one example. Natural Resource Accounts (NRAs) in themselves are not policy documents, but data sets that need to be interpreted and acted upon. The water accounts presented in this report are one example of an NRA.

South Africa is demarcated into 19 water management areas (WMAs) for better management of this scarce resource (see the map in Figure 7, page 8). These WMAs cover the entire surface of South Africa, i.e. approximately 1 223 201 square kilometres. The full list of WMAs and their reference abbreviations is found in the methodological notes (page 7).

Table A: Composition of total water supply, 2000 (million cubic metres)

Product[2]	Residual[3]	Total
14 912,5	1 941,0	**16 853,5**

From Table A it can be seen that the total water supply in South Africa was estimated to be 16 853,5 million cubic metres in 2000. The table also indicates the composition of that total water supply.

Figure 1: Composition of total water supply, 2000 (%)

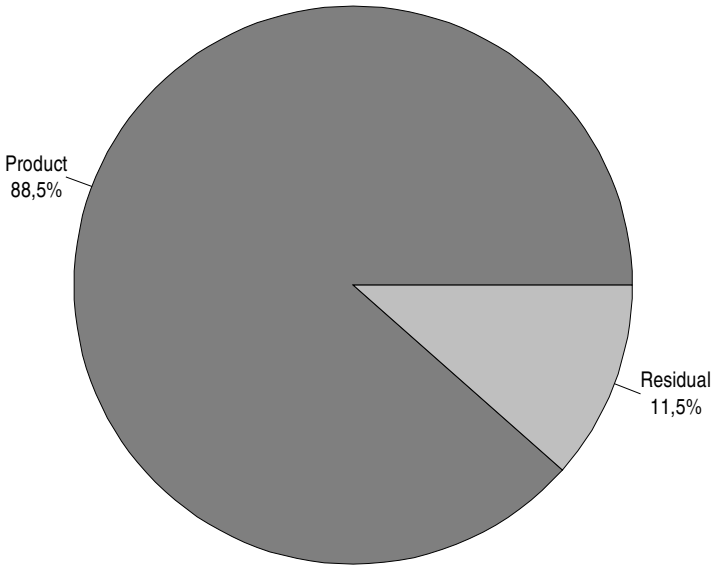


Figure 1 shows the composition of the estimated total water supply in percentages. Almost eighty-nine per cent of the total water is supplied as a product whilst only 11,5% is residual. These figures are extracted from the water supply account for the country as a whole (see Table 20, page 33).

[1] Evapotranspiration is the combined loss of water by evaporation from the soil or surface water and transpiration from the plants and animals.
[2] Water supplied to the system as a product.
[3] Water that is returned to the system by the different sectors.

Figure 2: Total water supply per WMA, 2000 (%)

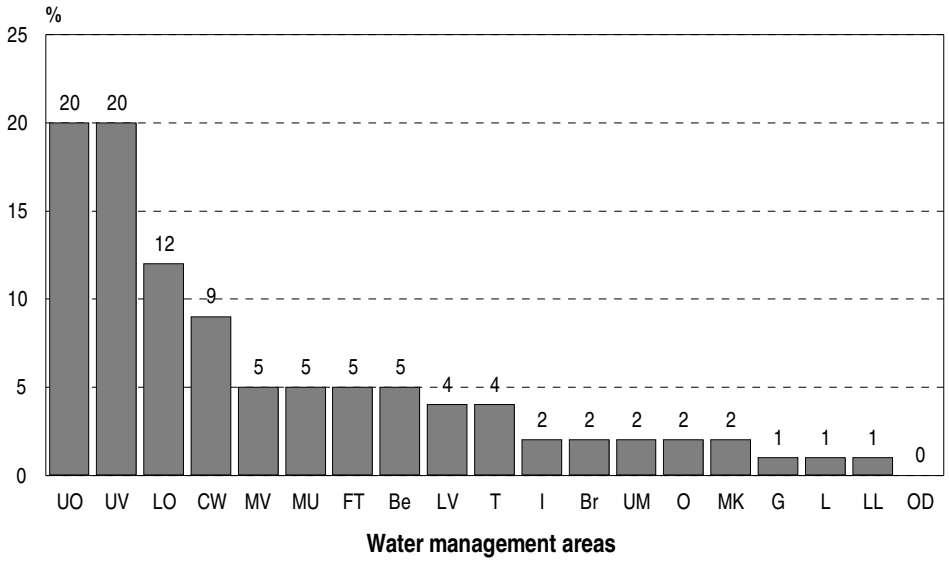


Figure 2 illustrates the contribution made by each water management area as a percentage of total water supplied. The Upper Vaal and Upper Orange WMAs together contributed approximately 40% of the estimated total water supply in 2000. The Olifants/Doring WMA contributed the least.

The total water used in South Africa for the hydrological year 2000 was 63 971,2 million cubic metres, as indicated in table B below.

Table B: Composition of total water use, 2000 (million cubic metres)

Ecosystem input[4]	Natural resource[5]	Products[6]	Total
39 683,0	9 376,0	14 912,2	**63 971,2**

[4] Activities that use rainwater or reduce run-off. In South Africa at present, only three activities are seen as reducing run-off, namely, forestry, alien plants and dryland sugar cane.
[5] Water abstracted from rivers, lakes, dams and groundwater for own use or distribution. For instance, in the case of irrigation, the user can himself abstract water from the source or there could be an irrigation scheme which abstracts water and distributes it.
[6] Water received from distributors.

Figure 3: Composition of total water use, 2000 (%)

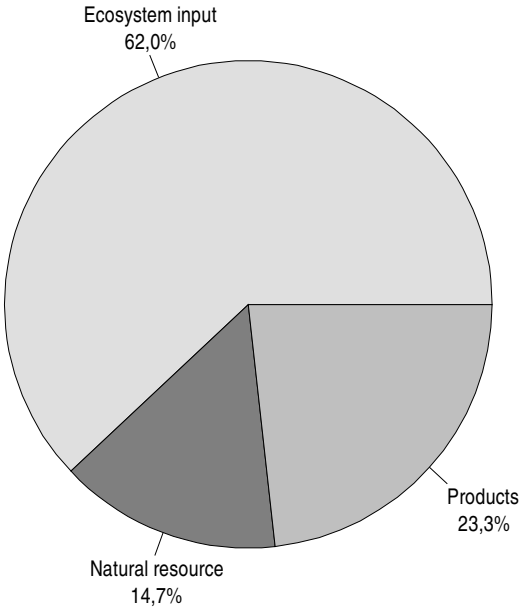
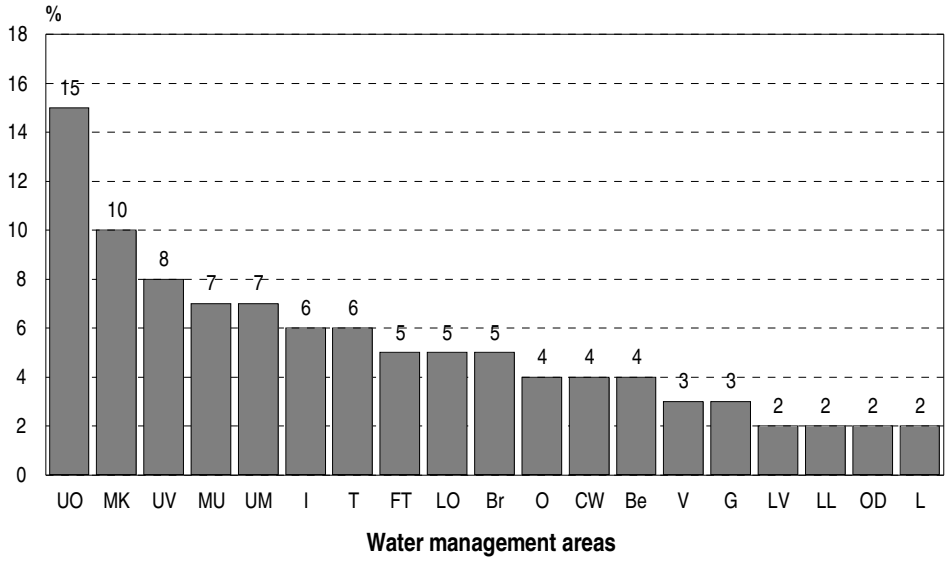


Figure 3 illustrates the composition of total water use in South Africa for the year 2000 in percentages. Sixty-two per cent of total water usage is composed of ecosystem input, 23,3% product and only 14,7% natural resource (see Table 40, page 55).

Figure 4: Total water use per WMA, 2000 (%)

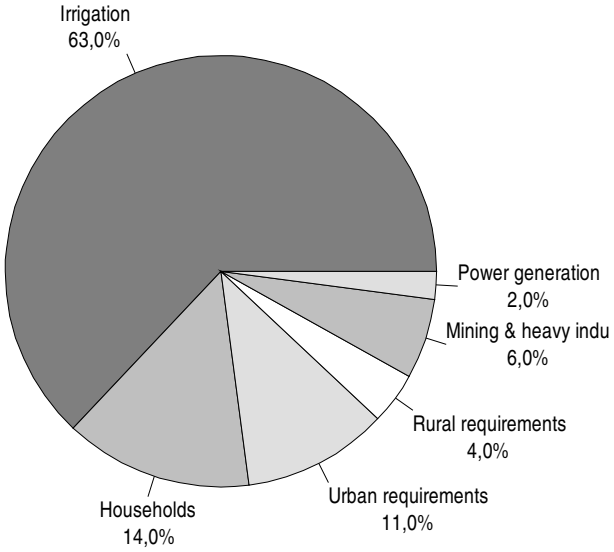


The percentage water use by each of the 19 water management areas is illustrated in Figure 4. The Upper Orange water management area was the highest contributor to water abstraction[7] (15%), followed by Mzimvubu/Keiskamma (10%).

[7] Removal of water from the environment to the economy.

Figure 5 below indicates that 63% of the total water abstracted is used by the agricultural sector, 14% by households, 11% by urban requirements, 6% by mining and heavy industry, 4% by rural requirements and 2% for power generation.

Figure 5: Water use by sectors and industry, 2000 (%)



Total water consumption is calculated as the difference between water use and water supply.

Figure 6:Water consumption by each WMA, 2000 (million cubic metres)

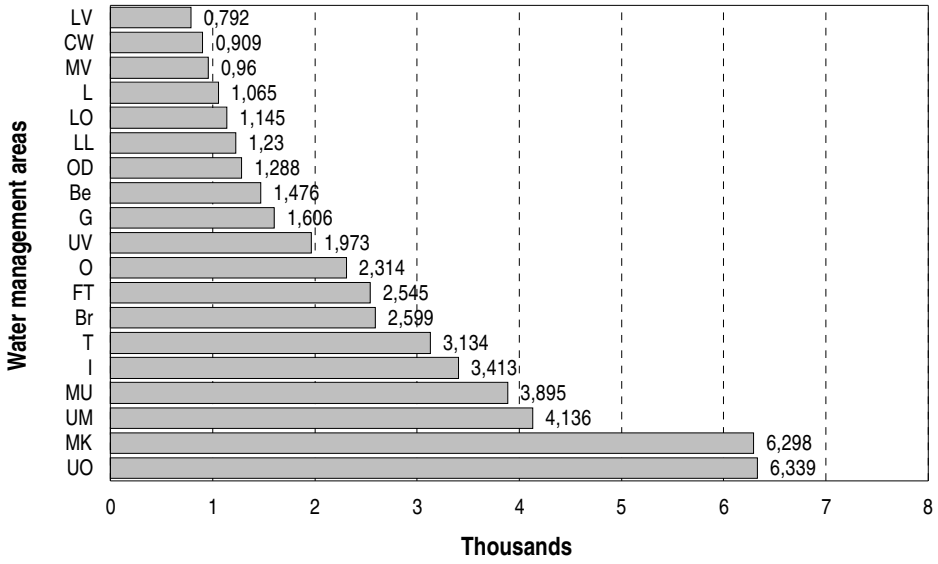


Figure 6 illustrates the water consumption in South Africa by each WMA for the year 2000. The highest water consumption occurred in the Upper Orange (6 339,0 million cubic metres) and Mzimvubu/Keiskamma (6 298,0 million cubic metres), whilst the Lower Vaal consumed the least (792,0 million cubic metres).

Table C: Water supply, water use and water consumption by WMAs, 2000 (million cubic metres and %)

	Water supply		Water use		Water consumption	
WMA	**million cubic metres**	**%**	**million cubic metres**	**%**	**million cubic metres**	**%**
Limpopo	110,1	0,7	1 175,1	1,8	1 065,0	2,3
Luvuvhu/Letaba	84,3	0,5	1 314,3	2,1	1 230,0	2,6
Crocodile West	1 512,9	9,0	2 421,9	3,8	909,0	1,9
Olifants	327,5	1,9	2 641,5	4,1	2 314,0	4,9
Inkomati	351,0	2,1	3 764,0	5,9	3 413,0	7,2
Usutu/Mhlatuze	289,8	1,7	4 425,8	6,9	4 136,0	8,8
Thukela	672,9	4,0	3 806,9	6,0	3 134,0	6,7
Upper Vaal	3 289,2	19,5	5 262,2	8,2	1 973,0	4,2
Middle Vaal	918,9	5,5	1 878,9	2,9	960,0	2,0
Lower Vaal	754,5	4,5	1 546,5	2,4	792,0	1,7
Mvoti/Umzimkulu	819,7	4,9	4 715,7	7,4	3 896,0	8,3
Mzimvubu/Keiskamma	253,0	1,5	6 551,0	10,2	6 298,0	13,4
Upper Orange	3 484,5	20,7	9 823,5	15,4	6 339,0	13,5
Lower Orange	1 979,0	11,7	3 124,0	4,9	1 145,0	2,4
Fish/Tsitsikamma	773,1	4,6	3 318,1	5,2	2 545,0	5,4
Gouritz	123,5	0,7	1 729,5	2,7	1 606,0	3,4
Olifants/Doring	41,0	0,2	1 329,0	2,1	1 288,0	2,7
Breede	353,5	2,1	2 952,5	4,6	2 599,0	5,5
Berg	715,1	4,2	2 191,1	3,4	1 476,0	3,1
South Africa (Total)	**16 853,5**	**100,0**	**63 971,5**	**100,0**	**47 118,0**	**100,0**

Table C above summarises the water supply, water use and water consumption in both million cubic metres and percentages.

METHODOLOGICAL NOTES

Background

"Recognition is growing that income is not being accurately calculated for economies based on natural resources. Some would even say that, for these economies, national accounting methods produce misleading calculations. They lead to measurements that neither faithfully described economic performance ex post, nor can they be used as a basis for useful policy proposals. For such economies, current accounting practices exaggerate income, encourage unsustainable levels of consumption, and obscure the necessity to implement greatly needed policy adjustments. The problem is relevant to practically all countries where non-renewable resources are being exploited and where renewable resources are being run down without being restored" (El Serafy, 1989: 10).

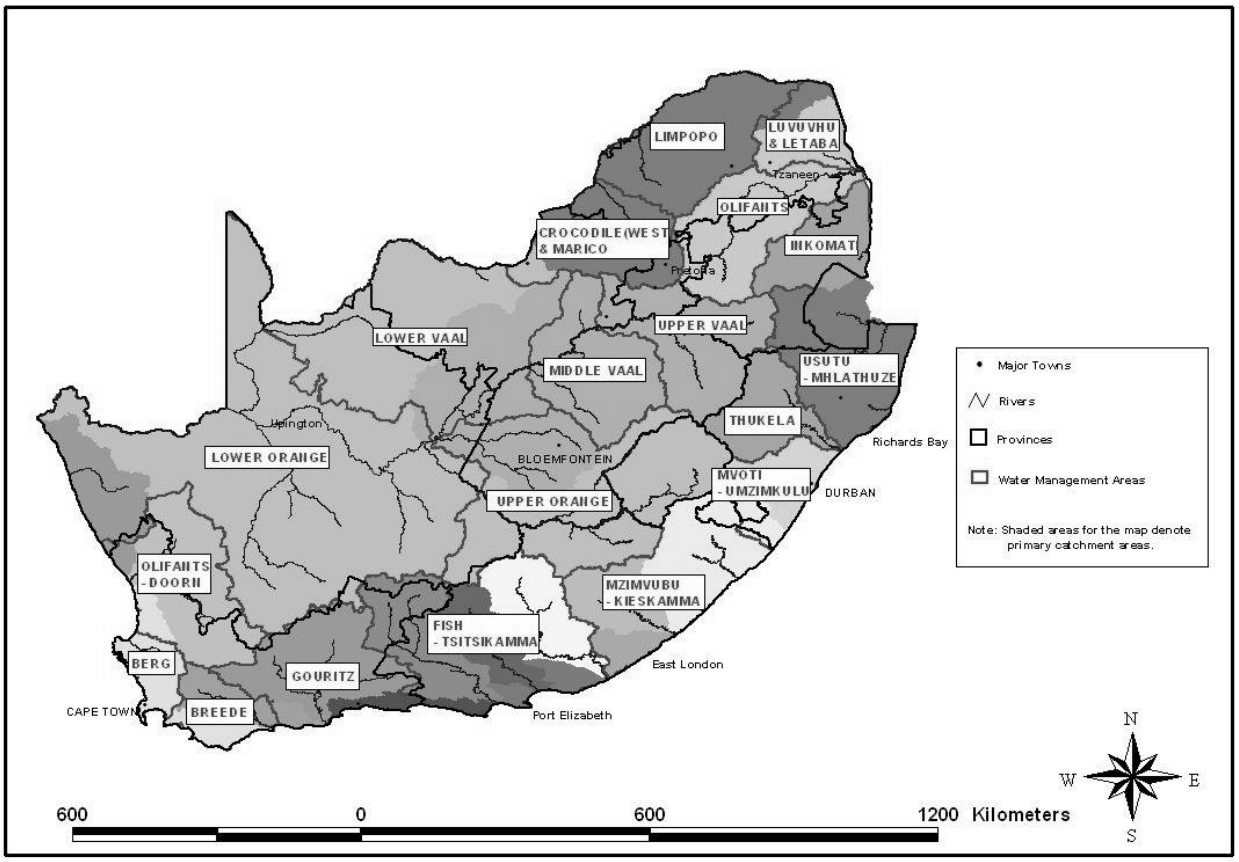
The concept of natural resource accounting refers to a holistic approach to national accounting in which all possible measures of wealth, and actions that have an impact on wealth, are included. The ultimate objective of this form of accounting is to improve policy-making on all levels for sustainable development.

Natural resource accounting incorporates environmental values in conventional accounting. It links environmental values to economic activities, and shows how these activities utilise natural resources and affect the environment. Natural Resource Accounts (NRA) are satellite accounts designed on System of National Accounts (SNA) principles, but wider in scope in order to address the shortcomings of the SNA with respect to the use of natural resources. NRAs in themselves are not policy documents, but data sets that need to be interpreted and acted upon.

The water accounts presented in this report are one example of a NRA. South Africa is demarcated into 19 water management areas for better management of this scarce resource (see map in Figure 7, see page 8). These WMAs cover the entire surface of South Africa, i.e. approximately 1 223 201 square kilometres. The 19 WMAs are listed below with their abbreviations in brackets:

- Limpopo (L)
- Luvuvhu/Letaba (LL)
- Crocodile West and Marico (CW)
- Olifants (O)
- Inkomati (I)
- Usutu to Mhlatuze (UM)
- Thukela (T)
- Upper Vaal (UV)
- Middle Vaal (MV)
- Lower Vaal (LV)
- Mvoti to Umzimkulu (MU)
- Mzimvubu to Keiskamma (MK)
- Upper Orange (UO)
- Lower Orange (LO)
- Fish to Tsitsikamma (FT)
- Gouritz (G)
- Olifants/Doring (OD)
- Breede (Br)
- Berg (Be)

Figure 7: The water management areas of South Africa



Source: CSIR

The accounts presented in this report make a comparison between different WMAs feasible. It is important to realise that water cannot be treated in a manner similar to other natural resources due to two particular characteristics. In the first instance, water travels under the influence of solar radiation and gravity and it is in continuous movement and transformation, partially escaping the control of humans. This elusive nature of water influences its potential economic and environmental usage. Secondly, water resources represent both an input into production and a 'sink' for liquid discharges. To take account of these characteristics, Water Accounts have been developed differently other from natural resource accounts.

The NRA for the 19 WMAs were constructed according to the framework developed by the United Nations and describes the physical flow of the water resource from the environment through various economic sectors.

The physical accounts for water comprise:

- water supply accounts;
- water use accounts; and
- water asset accounts.

This report covers the hydrology year 2000, i.e. 1 October 1999 to 30 September 2000, and does not attempt to measure or estimate how variable climatic conditions may have altered water resource and usage levels. It is important to note that the year 2000 is regarded as one of the wettest years in the last decade in climatologic terms, with approximately 16 517 mm (SA Atlas of Climatology and Hydrology, 2002) of rain for the year.

The understanding of both the hydrological cycle as well as the hydrological system is a basic requirement in the compilation of water accounts. According to the International Glossary of Hydrology (1992), the hydrological or water cycle is the "*succession of stages which water passes from the atmosphere to the earth and back to the atmosphere: evaporation from the land or sea or inland water, condensation from the clouds, precipitation, accumulation in the soil or in bodies of water, and re-evaporation*".

The simplest description of the hydrological system uses three repositories -

- water in the atmosphere;
- water in the oceans and seas; and
- water on land surface and subsurface.

For the compilation of these water accounts, the focus is on the part of the hydrological system which deals with water on the land surface and subsurface in the territory of reference: the inland water system.

The advantage of compiling and using water accounts as opposed to water statistics is as follows: the indicators that can be derived from the accounts result from an accounting system in which economic and environmental information are presented side by side, using common classifications and definitions. This enables users to link physical and monetary data in a consistent framework to study the impact of different sectors of the economy on the environment and the resource requirements by the economy as a result of structural changes.

The Water Accounts offer an integrated view of water supply and water use by industry and by purpose. They further assist in identifying water availability for various uses, stresses on water, and qualitative and quantitative water scarcity. They provide an information system which facilitates the formulation and evaluation of policies and strategies of sustainable development.

Physical water accounts describe the whole system of flows of water in physical terms between the environment and the economy and within the economy. In describing these flows, it is important to recall the difference between the ecosystem inputs (1), natural resources (2), products (3) and residuals (4). The *ecosystem inputs* are inputs from the environment into the economy (S1/U1) as defined below. Although they are not a result of human activity, they lead to biomass growth. Hence precipitation on agricultural land is treated as ecosystem input. S1 and U1 respectively refer to the water supply (S) ecosystem input (1) and the water use (U) ecosystem input (1) (see table D and table E respectively). Notation formulated in this fashion will be used for the rest of the water use and water supply structures.

Natural resources refer to the raw materials that are withdrawn from the environment (S2/U2). Hence all water abstracted from the environment is considered a natural resource. Part of abstracted water is then supplied to a third party. In this case, it becomes a *product* (S3/U3) as it enters into the economy. *Residuals* are the unwanted and undesired outputs from the production and consumption process within the economy (S4/U4)), which return to the environment. Hence when water is charged back into the environment, it is considered to be residual

Water supply accounts

Table D shows the structure of the water supply accounts. Water supply is given by industry, final consumer, other water management areas (WMAs) and environment. Shaded cells in this and the following tables indicate cells where entries are not possible. The abbreviation ISIC used in the tables below stands for International Standard Industrial Classification.

Table D: Schematic supply account for water

Source	ISIC	ISIC	Consumer	Other WMAs	Environment	Total
S1						
S2						
S3						
S4						
TWS(S3+S4)						

The abbreviation TWS stands for Total Water Supply and it is the sum of S3 (Product) and S4 (Residual).

Water use accounts

Table E shows the structure of the water use accounts. In these tables, the abstractors of water as a natural resource are shown by industry and sector.

Table E: Schematic use account for water

Source	ISIC	ISIC	Consumer	Other WMAs	Environment	Total
U1						
U2						
U3						
U4						
TWU (U1+U2+U3)						
Consumption (TWU-TWS)						

The abbreviation TWU stands for Total Water Use and it is the sum of U1, U2 and U3. Consumption is calculated as the difference between Total Water Use and Total Water Supply

Water asset accounts

Asset accounts for water describe how the stocks of water at the beginning of the accounting period are affected by transfers of water between the environment and the economy as well as transfers of water internal to the hydrological system, to reach the stocks of water at the end of the accounting period, which in the South African context is 1 October to 30 September.

The compilation of the water asset accounts poses problems due to the 'flowing' nature of this resource, which can result in double counting.

Table F: Schematic asset account for water

	Surface water			Ground-water	**Total**
	Reser-voirs	Lakes	Rivers		
Opening stocks					
Abstraction					
Residual					
Precipitation					
Inflows					
Net natural transfers					
Evapotranspiration					
Outflows					
Other volume Changes					
Closing stock					

NATURAL RESOURCE ACCOUNTS FOR WATER

Water supply accounts

Tables 1 to 20 illustrate the water supply accounts for South Africa for the year 2000. These tables cover the 19 WMAs and South Africa as a whole.

In each table, column F (mining and heavy industries) represents users such as Iscor, Sappi, Sasol and other large industries outside the municipal areas; column K (urban requirements) represents water used in urban areas for light industries and parks, but excludes domestic requirements; while column L (rural requirements) represents domestic use and stock watering.

Table 1: Water supply in the Limpopo Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															829,0	**829,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															260,0	**260,0**
		PERENNIAL SURFACE WATER															162,0	**162,0**
	2	**- Water abstracted for own use**															162,0	**162,0**
	2.1	**- of which for irrigation**															141,0	**141,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															98,0	**98,0**
	4	**- Water abstracted for own use**															98,0	**98,0**
	4.1	**- of which for irrigation**															98,0	**98,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									46,0		12,0	9,1		19,0		**86,1**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	8,0	8,0					0,0			16,0						**24,0**
	7	**- Irrigation water**	8,0	8,0														**8,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							0,0			16,0						**16,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**8,0**	**8,0**					**0,0**		**46,0**	**16,0**	**12,0**	**9,1**		**19,0**		**110,1**

Table 2: Water supply in the Luvuvhu/Letaba Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															961,0	**961,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															292,0	**292,0**
		PERENNIAL SURFACE WATER															248,0	**248,0**
	2	**- Water abstracted for own use**															248,0	**248,0**
	2.1	**- of which for irrigation**															248,0	**248,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															44,0	**44,0**
	4	**- Water abstracted for own use**															44,0	**44,0**
	4.1	**- of which for irrigation**															44,0	**44,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									55,0		3,6	2,7		0,0		**61,3**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	19,0	19,0					0,0			4,0						**23,0**
	7	**- Irrigation water**	19,0	19,0														**19,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							0,0			4,0						**4,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**19,0**	**19,0**					**0,0**		**55,0**	**4,0**	**3,6**	**2,7**		**0,0**		**84,3**

Table 3: Water supply in the Crocodile West and Marico Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															690,0	**690,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															599,0	**599,0**
		PERENNIAL SURFACE WATER															488,0	**488,0**
	2	**- Water abstracted for own use**															488,0	**488,0**
	2.1	**- of which for irrigation**															334,0	**334,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															111,0	**111,0**
	4	**- Water abstracted for own use**															111,0	**111,0**
	4.1	**- of which for irrigation**															111,0	**111,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									83,0		224,5	169,4		656,0		**1 132,9**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	44,0	44,0					41,0			295,0						**380,0**
	7	**- Irrigation water**	44,0	44,0														**44,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							41,0			295,0						**336,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**44,0**	**44,0**					**41,0**		**83,0**	**295,0**	**224,5**	**169,4**		**656,0**		**1 512,9**

Table 4: Water supply in the Olifants Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															1 582,0	**1 582,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															835,0	**835,0**
		PERENNIAL SURFACE WATER															736,0	**736,0**
	2	**- Water abstracted for own use**															736,0	**736,0**
	2.1	**- of which for irrigation**															461,0	**461,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															99,0	**99,0**
	4	**- Water abstracted for own use**															99,0	**99,0**
	4.1	**- of which for irrigation**																
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**											29,9	22,6		172,0		**224,5**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	44,0	44,0					14,0			45,0						**103,0**
	7	**- Irrigation water**	44,0	44,0														**44,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**																
	11	**- Losses/leakages**							14,0			45,0						**59,0**
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**44,0**	**44,0**					**14,0**			**45,0**	**29,9**	**22,6**		**172,0**		**327,5**

Table 5: Water supply in the Inkomati Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															2 531,0	**2 531,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															959,0	**959,0**
		PERENNIAL SURFACE WATER															950,0	**950,0**
	2	**- Water abstracted for own use**															950,0	**950,0**
	2.1	**- of which for irrigation**															926,0	**926,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															9,0	**9,0**
	4	**- Water abstracted for own use**															9,0	**9,0**
	4.1	**- of which for irrigation**															9,0	**9,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									237,0		21,1	15,9		0,0		**274,0**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	58,0	58,0					11,0			8,0						**77,0**
	7	**- Irrigation water**	58,0	58,0														**58,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							11,0			8,0						**19,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**58,0**	**58,0**					**11,0**		**237,0**	**8,0**	**21,1**	**15,9**		**0,0**		**351,0**

Table 6: Water supply in the Usutu to Mhlatuze Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															3 588,0	**3 588,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															599,0	**599,0**
		PERENNIAL SURFACE WATER															560,0	**560,0**
	2	**- Water abstracted for own use**															560,0	**560,0**
	2.1	**- of which for irrigation**															469,0	**469,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															39,0	**39,0**
	4	**- Water abstracted for own use**															39,0	**39,0**
	4.1	**- of which for irrigation**															39,0	**39,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									176,0		17,6	13,2		32,0		**238,8**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	39,0	39,0					1,0			11,0						**51,0**
	7	**- Irrigation water**	39,0	39,0														**39,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							1,0			11,0						**12,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**39,0**	**39,0**					**1,0**		**176,0**	**11,0**	**17,6**	**13,2**		**32,0**		**289,8**

Table 7: Water supply in the Thukela Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															2 940,0	**2 940,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															251,0	**251,0**
		PERENNIAL SURFACE WATER															236,0	**236,0**
	2	**- Water abstracted for own use**															236,0	**236,0**
	2.1	**- of which for irrigation**															189,0	**189,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															15,0	**15,0**
	4	**- Water abstracted for own use**															15,0	**15,0**
	4.1	**- of which for irrigation**															15,0	**15,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									584,0		18,2	13,7		0,0		615,9
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	23,0	23,0					9,0			25,0						57,0
	7	**- Irrigation water**	23,0	23,0														23,0
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							9,0			25,0						34,0
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**23,0**	**23,0**					**9,0**		**584,0**	**25,0**	**18,2**	**13,7**		**0,0**		**672,9**

Table 8: Water supply in the Upper Vaal Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															2 124,0	**2 124,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															367,0	**367,0**
		PERENNIAL SURFACE WATER															335,0	**335,0**
	2	**- Water abstracted for own use**															335,0	**335,0**
	2.1	**- of which for irrigation**															335,0	**335,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															32,0	**32,0**
	4	**- Water abstracted for own use**															32,0	**32,0**
	4.1	**- of which for irrigation**															32,0	**32,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									875,0		258,3	194,9		1 443,0		**2 771,2**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	11,0	11,0					146,0			361,0						**518,0**
	7	**- Irrigation water**	11,0	11,0														**11,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							146,0			361,0						**507,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**11,0**	**11,0**					**146,0**		**875,0**	**361,0**	**258,3**	**194,9**		**1 443,0**		**3 289,2**

Table 9: Water supply in the Middle Vaal Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															779,0	**779,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															245,0	**245,0**
		PERENNIAL SURFACE WATER															191,0	**191,0**
	2	**- Water abstracted for own use**															191,0	**191,0**
	2.1	**- of which for irrigation**															191,0	**191,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															54,0	**54,0**
	4	**- Water abstracted for own use**															54,0	**54,0**
	4.1	**- of which for irrigation**															54,0	**54,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**											36,4	27,5		791,0		**854,9**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	16,0	16,0					18,0			30,0						**64,0**
	7	**- Irrigation water**	16,0	16,0														**16,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							18,0			30,0						**48,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**16,0**	**16,0**					**18,0**			**30,0**	**36,4**	**27,5**		**791,0**		**918,9**

Table 10: Water supply in the Lower Vaal Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															320,0	**320,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															531,0	**531,0**
		PERENNIAL SURFACE WATER															405,0	**405,0**
	2	**- Water abstracted for own use**															405,0	**405,0**
	2.1	**- of which for irrigation**															399,0	**399,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															126,0	**126,0**
	4	**- Water abstracted for own use**															126,0	**126,0**
	4.1	**- of which for irrigation**															126,0	**126,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**											25,3	19,2		651,0		**695,5**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	52,0	52,0					2,0			5,0						**59,0**
	7	**- Irrigation water**	52,0	52,0														**52,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							2,0			5,0						**7,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**52,0**	**52,0**					**2,0**			**5,0**	**25,3**	**19,2**		**651,0**		**754,5**

Table 11: Water supply in the Mvoti to Umzimkulu Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															3 638,0	**3 638,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															346,0	**346,0**
		PERENNIAL SURFACE WATER															340,0	**340,0**
	2	**- Water abstracted for own use**															340,0	**340,0**
	2.1	**- of which for irrigation**															340,0	**340,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															6,0	**6,0**
	4	**- Water abstracted for own use**															6,0	**6,0**
	4.1	**- of which for irrigation**															6,0	**6,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									448,0		142,3	107,4		34,0		**731,7**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	21,0	21,0					6,0			61,0						**88,0**
	7	**- Irrigation water**	21,0	21,0														**21,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							6,0			61,0						**67,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**21,0**	**21,0**					**6,0**		**448,0**	**61,0**	**142,3**	**107,4**		**34,0**		**819,7**

Table 12: Water supply in the Mzimvubu to Keiskamma Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															6 119,0	**6 119,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															236,0	**236,0**
		PERENNIAL SURFACE WATER															215,0	**215,0**
	2	**- Water abstracted for own use**															215,0	**215,0**
	2.1	**- of which for irrigation**															215,0	**215,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															21,0	**21,0**
	4	**- Water abstracted for own use**															21,0	**21,0**
	4.1	**- of which for irrigation**															21,0	**21,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									139,0		32,5	24,5		0,0		**196,0**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	17,0	17,0					0,0			40,0						**57,0**
	7	**- Irrigation water**	17,0	17,0														**17,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							0,0			40,0						**40,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**17,0**	**17,0**					**0,0**		**139,0**	**40,0**	**32,5**	**24,5**		**0,0**		**253,0**

Table 13: Water supply in the Upper Orange Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															5 632,0	**5 632,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															779,0	**779,0**
		PERENNIAL SURFACE WATER															714,0	**714,0**
	2	**- Water abstracted for own use**															714,0	**714,0**
	2.1	**- of which for irrigation**															714,0	**714,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															65,0	**65,0**
	4	**- Water abstracted for own use**															65,0	**65,0**
	4.1	**- of which for irrigation**															65,0	**65,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									3 337,0		41,9	31,6		2,0		**3 412,5**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	34,0	34,0					0,0			38,0						**72,0**
	7	**- Irrigation water**	34,0	34,0														**34,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							0,0			38,0						**38,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**34,0**	**34,0**					**0,0**		**3 337,0**	**38,0**	**41,9**	**31,6**		**2,0**		**3 484,5**

Table 14: Water supply in the Lower Orange Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															433,0	**433,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															789,0	**789,0**
		PERENNIAL SURFACE WATER															765,0	**765,0**
	2	**- Water abstracted for own use**															765,0	**765,0**
	2.1	**- of which for irrigation**															765,0	**765,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															24,0	**24,0**
	4	**- Water abstracted for own use**															24,0	**24,0**
	4.1	**- of which for irrigation**															24,0	**24,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**											9,1	6,9		1 886,0		**1 902,0**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	76,0	76,0					0,0			1,0						**77,0**
	7	**- Irrigation water**	76,0	76,0														**76,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							0,0			1,0						**1,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**76,0**	**76,0**					**0,0**			**1,0**	**9,1**	**6,9**		**1 886,0**		**1 979,0**

Table 15: Water supply in the Fish to Tsitsikamma Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															1 911,0	**1 911,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															770,0	**770,0**
		PERENNIAL SURFACE WATER															734,0	**734,0**
	2	**- Water abstracted for own use**															734,0	**734,0**
	2.1	**- of which for irrigation**															734,0	**734,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															36,0	**36,0**
	4	**- Water abstracted for own use**															36,0	**36,0**
	4.1	**- of which for irrigation**															36,0	**36,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**											37,7	28,4		571,0		**637,1**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	115,0	115,0					0,0			21,0						**136,0**
	7	**- Irrigation water**	115,0	115,0														**115,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							0,0			21,0						**21,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**115,0**	**115,0**					**0,0**			**21,0**	**37,7**	**28,4**		**571,0**		**773,1**

Table 16: Water supply in the Gouritz Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															1 354,0	**1 354,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															274,0	**274,0**
		PERENNIAL SURFACE WATER															210,0	**210,0**
	2	**- Water abstracted for own use**															210,0	**210,0**
	2.1	**- of which for irrigation**															210,0	**210,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															64,0	**64,0**
	4	**- Water abstracted for own use**															64,0	**64,0**
	4.1	**- of which for irrigation**															64,0	**64,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									69,0		18,5	14,0		0,0		**101,5**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	8,0	8,0					6,0			8,0						**22,0**
	7	**- Irrigation water**	8,0	8,0														**8,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							6,0			8,0						**14,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**8,0**	**8,0**					**6,0**		**69,0**	**8,0**	**18,5**	**14,0**		**0,0**		**123,5**

Table 17: Water supply in the Olifants/ Doring Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															952,0	**952,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															360,0	**360,0**
		PERENNIAL SURFACE WATER															315,0	**315,0**
	2	**- Water abstracted for own use**															315,0	**315,0**
	2.1	**- of which for irrigation**															315,0	**315,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															45,0	**45,0**
	4	**- Water abstracted for own use**															45,0	**45,0**
	4.1	**- of which for irrigation**															45,0	**45,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									10,0		2,3	1,7		3,0		**17,0**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	22,0	22,0					0,0			2,0						**24,0**
	7	**- Irrigation water**	22,0	22,0														**22,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							0,0			2,0						**2,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**22,0**	**22,0**					**0,0**		**10,0**	**2,0**	**2,3**	**1,7**		**3,0**		**41,0**

Table 18: Water supply in the Breede Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															2 088,0	**2 088,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															583,0	**583,0**
		PERENNIAL SURFACE WATER															474,0	**474,0**
	2	**- Water abstracted for own use**															474,0	**474,0**
	2.1	**- of which for irrigation**															474,0	**474,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															109,0	**109,0**
	4	**- Water abstracted for own use**															109,0	**109,0**
	4.1	**- of which for irrigation**															109,0	**109,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									256,0		14,0	10,5		1,0		**281,5**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	54,0	54,0					0,0			18,0						**72,0**
	7	**- Irrigation water**	54,0	54,0														**54,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							0,0			18,0						**18,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**54,0**	**54,0**					**0,0**		**256,0**	**18,0**	**14,0**	**10,5**		**1,0**		**353,5**

Table 19:Water supply in the Berg Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															1 212,0	**1 212,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															301,0	**301,0**
		PERENNIAL SURFACE WATER															256,0	256,0
	2	**- Water abstracted for own use**															256,0	256,0
	2.1	**- of which for irrigation**															256,0	256,0
	3	**- Water abstracted for delivery**																
		GROUNDWATER															45,0	**45,0**
	4	**- Water abstracted for own use**															45,0	**45,0**
	4.1	**- of which for irrigation**															45,0	**45,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									234,0		137,4	103,7		203,0		**678,1**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (S4)**	11,0	11,0					0,0			26,0						**37,0**
	7	**- Irrigation water**	11,0	11,0														**11,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							0,0			26,0						**26,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**11,0**	**11,0**					**0,0**		**234,0**	**26,0**	**137,4**	**103,7**		**203,0**		**715,1**

Table 20: Water supply in South Africa for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	Other WMAs	ENVIRONMENT	TOTAL WATER SUPPLY
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (S1)**															39 683,0	**39 683,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (S2)**															9 376,0	**9 376,0**
		PERENNIAL SURFACE WATER															8 334,0	**8 334,0**
	2	**- Water abstracted for own use**															8 334,0	**8 334,0**
	2.1	**- of which for irrigation**															7 358,0	**7 358,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER															1 042,0	**1 042,0**
	4	**- Water abstracted for own use**															1 042,0	**1 042,0**
	4.1	**- of which for irrigation**															1 042,0	**1 042,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER SUPPLIED TO OTHER SECTORS (S3)**									6 549,0		1 082,6	816,9		6 464,0		**14 912,5**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED)(S4)**	672,0	672,0					254,0			1 015,0						**1 941,0**
	7	**- Irrigation water**	672,0	672,0														**672,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**							254,0			1 015,0						**1 269,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER SUPPLY		**(S3+S4)**	**672,0**	**672,0**					**254,0**		**6 549,0**	**1 015,0**	**1 082,6**	**816,9**		**6 464,0**		**16 853,5**

Water use accounts

Tables 21 to 40 illustrate the water use accounts for South Africa for the year 2000. These tables cover the 19 WMAs and South Africa as a whole.

Once again in each table column F (mining and heavy industries) represents users such as Iscor, Sappi, Sasol and other large industries outside the municipal areas; column K (urban requirements) represents water used in urban areas for light industries and parks, but excludes domestic requirements; while column L (rural requirements) represents domestic use and stock watering.

Table 21: Water use in the Limpopo Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B+C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															829,0	**829,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	239,0	238,0		1,0		7,0	14,0									**260,0**
		PERENNIAL SURFACE WATER	141,0	140,0		1,0		7,0	14,0									**162,0**
	2	- Water abstracted for own use	141,0	140,0		1,0		7,0	14,0									**162,0**
	2.1	- of which for irrigation	141,0	140,0		1,0												**141,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	98,0	98,0														**98,0**
	4	- Water abstracted for own use	98,0	98,0														**98,0**
	4.1	- of which for irrigation	98,0	98,0														**98,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										21,1	21,1	15,9	28,0	0,0		**86,1**
	6.1	- of which : Wastewater										21,1						**21,1**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**24,0**
	7	- Irrigation water																**8,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**16,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**239,0**	**238,0**		**1,0**		**7,0**	**14,0**			**21,1**	**21,1**	**15,9**	**28,0**	**0,0**	**829,0**	**1 175,1**
CONSUMPTION (U - S)			**231,0**	**230,0**		**1,0**		**7,0**	**14,0**		**-46,0**	**5,1**	**9,1**	**6,8**	**28,0**	**-19,0**	**829,0**	**1 065,0**

Table 22: Water use in the Luvuvhu/Letaba Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															961,0	**961,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	291,0	248,0		43,0		0,0	1,0									**292,0**
		PERENNIAL SURFACE WATER	247,0	204,0		43,0		0,0	1,0									**248,0**
	2	- Water abstracted for own use	247,0	204,0		43,0		0,0	1,0									**248,0**
	2.1	- of which for irrigation	247,0	204,0		43,0												**247,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	44,0	44,0														**44,0**
	4	- Water abstracted for own use	44,0	44,0														**44,0**
	4.1	- of which for irrigation	44,0	44,0														**44,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										6,3	6,3	4,7	31,0	13,0		**61,3**
	6.1	- of which : Wastewater										6,3						**6,3**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**23,0**
	7	- Irrigation water																**19,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**4,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**291,0**	**248,0**		**43,0**		**0,0**	**1,0**			**6,3**	**6,3**	**4,7**	**31,0**	**13,0**	**961,0**	**1 314,3**
CONSUMPTION (U - S)			**272,0**	**229,0**		**43,0**		**0,0**	**1,0**		**-55,0**	**2,3**	**2,7**	**2,0**	**31,0**	**13,0**	**961,0**	**1 230,0**

Table 23: Water use in the Crocodile and Marico Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															690,0	**690,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	445,0	445,0		0,0		27,0	127,0									**599,0**
		PERENNIAL SURFACE WATER	334,0	334,0		0,0		27,0	127,0									**488,0**
	2	- Water abstracted for own use	334,0	334,0		0,0		27,0	127,0									**488,0**
	2.1	- of which for irrigation	334,0	334,0		0,0												**334,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	111,0	111,0														**111,0**
	4	- Water abstracted for own use	111,0	111,0														**111,0**
	4.1	- of which for irrigation	111,0	111,0														**111,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										393,9	393,9	297,1	38,0	10,0		**1 132,9**
	6.1	- of which : Wastewater										393,9						**393,9**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**380,0**
	7	- Irrigation water																**44,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**336,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**445,0**	**445,0**		**0,0**		**27,0**	**127,0**			**393,9**	**393,9**	**297,1**	**38,0**	**10,0**	**690,0**	**2 421,9**
CONSUMPTION (U - S)			**401,0**	**401,0**		**0,0**		**27,0**	**86,0**		**-83,0**	**98,9**	**169,4**	**127,8**	**38,0**	**-646,0**	**690,0**	**909,0**

Table 24: Water use in the Olifants Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															1 582,0	**1 582,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	560,0	557,0		3,0		181,0	94,0									**835,0**
		PERENNIAL SURFACE WATER	461,0	458,0		3,0		181,0	94,0									**736,0**
	2	- Water abstracted for own use	461,0	458,0		3,0		181,0	94,0									**736,0**
	2.1	- of which for irrigation	461,0	458,0		3,0												**461,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	99,0	99,0														**99,0**
	4	- Water abstracted for own use	99,0	99,0														**99,0**
	4.1	- of which for irrigation	99,0	99,0														**99,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)									28,1	52,4	52,4	39,6	44,0	8,0		**224,5**
	6.1	- of which : Wastewater										52,4						**52,4**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**103,0**
	7	- Irrigation water																**44,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**59,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**560,0**	**557,0**		**3,0**		**181,0**	**94,0**		**28,1**	**52,4**	**52,4**	**39,6**	**44,0**	**8,0**	**1 582,0**	**2 641,5**
CONSUMPTION (U - S)			**516,0**	**513,0**		**3,0**		**181,0**	**80,0**		**28,1**	**7,4**	**22,6**	**17,0**	**44,0**	**-164,0**	**1 582,0**	**2 314,0**

Table 25: Water use in the Inkomati Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															2 531,0	**2 531,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	935,0	737,0		198,0		0,0	24,0									**959,0**
		PERENNIAL SURFACE WATER	926,0	728,0		198,0		0,0	24,0									**950,0**
	2	- Water abstracted for own use	926,0	728,0		198,0		0,0	24,0									**950,0**
	2.1	- of which for irrigation	926,0	728,0		198,0												**926,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	9,0	9,0														**9,0**
	4	- Water abstracted for own use	9,0	9,0														**9,0**
	4.1	- of which for irrigation	9,0	9,0														**9,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										37,0	37,0	28,0	24,0	148,0		**274,0**
	6.1	- of which : Wastewater										37,0						**37,0**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**77,0**
	7	- Irrigation water																**58,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**19,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**935,0**	**737,0**		**198,0**		**0,0**	**24,0**			**37,0**	**37,0**	**28,0**	**24,0**	**148,0**	**2 531,0**	**3 764,0**
CONSUMPTION (U - S)			**877,0**	**679,0**		**198,0**		**0,0**	**13,0**		**-237,0**	**29,0**	**16,0**	**12,0**	**24,0**	**148,0**	**2 531,0**	**3 413,0**

Table 26: Water use in the Usutu to Mhlatuze Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															3 588,0	**3 588,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	508,0	404,0		104,0		0,0	91,0									**599,0**
		PERENNIAL SURFACE WATER	469,0	365,0		104,0		0,0	91,0									**560,0**
	2	- Water abstracted for own use	469,0	365,0		104,0		0,0	91,0									**560,0**
	2.1	- of which for irrigation	469,0	365,0		104,0												**469,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	39,0															**39,0**
	4	- Water abstracted for own use	39,0															**39,0**
	4.1	- of which for irrigation	39,0															**39,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										30,8	30,8	23,2	40,0	114,0		**238,8**
	6.1	- of which : Wastewater										30,8						**30,8**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**51,0**
	7	- Irrigation water																**39,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**12,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**508,0**	**404,0**		**104,0**		**0,0**	**91,0**			**30,8**	**30,8**	**23,2**	**40,0**	**114,0**	**3 588,0**	**4 425,8**
CONSUMPTION (U - S)			**469,0**	**365,0**		**104,0**		**0,0**	**90,0**		**-176,0**	**19,8**	**13,2**	**10,0**	**40,0**	**82,0**	**3 588,0**	**4 136,0**

Table 27: Water use in the Thukela Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															2 940,0	**2 940,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	204,0	204,0		0,0		1,0	46,0									**251,0**
		PERENNIAL SURFACE WATER	189,0	189,0		0,0		1,0	46,0									**236,0**
	2	- Water abstracted for own use	189,0	189,0		0,0		1,0	46,0									**236,0**
	2.1	- of which for irrigation	189,0	189,0														**189,0**
	3	- Water abstracted for delivery	0,0	0,0														
		GROUNDWATER	15,0	15,0														**15,0**
	4	- Water abstracted for own use	15,0	15,0														**15,0**
	4.1	- of which for irrigation	15,0	15,0														**15,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										31,9	31,9	24,1	31,0	497,0		**615,9**
	6.1	- of which : Wastewater										31,9						**31,9**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**57,0**
	7	- Irrigation water																**23,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**34,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		**(U1+U2+U3)**	**204,0**	**204,0**		**0,0**		**1,0**	**46,0**		**0,0**	**31,9**	**31,9**	**24,1**	**31,0**	**497,0**	**2 940,0**	**3 806,9**
CONSUMPTION (U - S)			**181,0**	**181,0**		**0,0**		**1,0**	**37,0**		**-584,0**	**6,9**	**13,7**	**10,4**	**31,0**	**497,0**	**2 940,0**	**3 134,0**

Table 28: Water use in the Upper Vaal Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															2 124,0	2 124,0
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	114,0	114,0		0,0		80,0	173,0									367,0
		PERENNIAL SURFACE WATER	82,0	82,0		0,0		80,0	173,0									335,0
	2	- Water abstracted for own use	82,0	82,0		0,0		80,0	173,0									335,0
	2.1	- of which for irrigation	82,0	82,0		0,0												82,0
	3	- Water abstracted for delivery																
		GROUNDWATER	32,0	32,0														32,0
	4	- Water abstracted for own use	32,0	32,0														32,0
	4.1	- of which for irrigation	32,0	32,0														32,0
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										453,1	453,2	341,9	42,0	1 481,0		2 771,2
	6.1	- of which : Wastewater										453,1						453,2
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																518,0
	7	- Irrigation water																11,0
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																507,0
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	114,0	114,0		0,0		80,0	173,0			453,1	453,2	341,9	42,0	1 481,0	2 124,0	5 262,2
CONSUMPTION (U - S)			103,0	103,0		0,0		80,0	27,0		-875,0	92,1	194,9	147,0	42,0	38,0	2 124,0	1 973,0

Table 29: Water use in the Middle Vaal Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															779,0	**779,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	159,0	159,0		0,0		0,0	86,0									**245,0**
		PERENNIAL SURFACE WATER	105,0	105,0		0,0		0,0	86,0									**191,0**
	2	- Water abstracted for own use	105,0	105,0		0,0		0,0	86,0									**191,0**
	2.1	- of which for irrigation	105,0	105,0		0,0												**105,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	54,0	54,0														**54,0**
	4	- Water abstracted for own use	54,0	54,0														**54,0**
	4.1	- of which for irrigation	54,0	54,0														**54,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)									42,1	63,8	63,8	48,2	32,0	605,0		**854,9**
	6.1	- of which : Wastewater										63,8						**63,8**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**64,0**
	7	- Irrigation water																**16,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**48,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**159,0**	**159,0**		**0,0**		**0,0**	**86,0**		**42,1**	**63,8**	**63,8**	**48,2**	**32,0**	**605,0**	**779,0**	**1 878,9**
CONSUMPTION (U - S)			**143,0**	**143,0**		**0,0**		**0,0**	**68,0**		**42,1**	**33,8**	**27,5**	**20,7**	**32,0**	**-186,0**	**779,0**	**960,0**

Table 30: Water use in the Lower Vaal Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															320,0	320,0
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	525,0	525,0		0,0		0,0	6,0									531,0
		PERENNIAL SURFACE WATER	399,0	399,0		0,0		0,0	6,0									405,0
	2	- Water abstracted for own use	399,0	399,0		0,0		0,0	6,0									405,0
	2.1	- of which for irrigation	399,0	399,0		0,0												399,0
	3	- Water abstracted for delivery																
		GROUNDWATER	126,0	126,0														126,0
	4	- Water abstracted for own use	126,0	126,0														126,0
	4.1	- of which for irrigation	126,0	126,0														126,0
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)									529,0	44,5	44,5	33,5	44,0	0,0		695,5
	6.1	- of which : Wastewater										44,5						44,5
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																59,0
	7	- Irrigation water																52,0
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																7,0
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	525,0	525,0		0,0		0,0	6,0		529,0	44,5	44,5	33,5	44,0	0,0	320,0	1 546,5
CONSUMPTION (U - S)			473,0	473,0		0,0		0,0	4,0		529,0	39,5	19,1	14,4	44,0	-651,0	320,0	792,0

Table 31: Water use in the Mvoti to Umzimkhulu Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															3 638,0	**3638,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	272,0	207,0		65,0		0,0	74,0									**346,0**
		PERENNIAL SURFACE WATER	266,0	201,0		65,0		0,0	74,0									**340,0**
	2	- Water abstracted for own use	266,0	201,0		65,0		0,0	74,0									**340,0**
	2.1	- of which for irrigation	266,0	201,0		65,0												**340,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	6,0	6,0														**6,0**
	4	- Water abstracted for own use	6,0	6,0														**6,0**
	4.1	- of which for irrigation	6,0	6,0														**6,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										249,7	249,7	188,3	44,0	0,0		**731,7**
	6.1	- of which : Wastewater										249,7						**249,7**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**88,0**
	7	- Irrigation water																**21,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**67,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**272,0**	**207,0**		**65,0**		**0,0**	**74,0**			**249,7**	**249,7**	**188,3**	**44,0**	**0,0**	**3 638,0**	**4 715,7**
CONSUMPTION (U - S)			**251,0**	**186,0**		**65,0**		**0,0**	**68,0**		**-448,0**	**188,7**	**107,3**	**81,0**	**44,0**	**-34,0**	**3 638,0**	**3 896,0**

Table 32: Water use in the Mzimvubu Water Management Area for 2000 (millions of cubic metres

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															6 119,0	6 119,0
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	236,0	190,0		46,0		0,0	0,0									236,0
		PERENNIAL SURFACE WATER	215,0	169,0		46,0		0,0	0,0									215,0
	2	- Water abstracted for own use	215,0	169,0		46,0		0,0	0,0									215,0
	2.1	- of which for irrigation	215,0	169,0		46,0												215,0
	3	- Water abstracted for delivery																
		GROUNDWATER	21,0	21,0														21,0
	4	- Water abstracted for own use	21,0	21,0														21,0
	4.1	- of which for irrigation	21,0	21,0														21,0
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										57,0	57,0	43,0	39,0	0,0		196,0
	6.1	- of which : Wastewater										57,0						57,0
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																57,0
	7	- Irrigation water																17,0
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																40,0
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	236,0	190,0		46,0		0,0	0,0			57,0	57,0	43,0	39,0	0,0	6 119,0	6 551,0
CONSUMPTION (U - S)			219,0	173,0		46,0		0,0	0,0		-139,0	17,0	24,5	18,5	39,0	0,0	6 119,0	6 298,0

Table 33: Water use in the Upper Orange Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															5 632,0	**5 632,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	777,0	777,0		0,0		0,0	2,0									**779,0**
		PERENNIAL SURFACE WATER	712,0	712,0		0,0		0,0	2,0									**714,0**
	2	- Water abstracted for own use	712,0	712,0		0,0		0,0	2,0									**714,0**
	2.1	- of which for irrigation	712,0	712,0		0,0												**714,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	65,0	65,0														**65,0**
	4	- Water abstracted for own use	65,0	65,0														**65,0**
	4.1	- of which for irrigation	65,0	65,0														**65,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										73,5	73,5	55,5	60,0	3 150,0		**3 412,5**
	6.1	- of which : Wastewater										73,5						**73,5**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**72,0**
	7	- Irrigation water																**34,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**38,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**777,0**	**777,0**		**0,0**		**0,0**	**2,0**			**73,5**	**73,5**	**55,5**	**60,0**	**3 150,0**	**5 632,0**	**9 823,5**
CONSUMPTION (U - S)			**743,0**	**743,0**		**0,0**		**0,0**	**2,0**		**-3 337,0**	**35,5**	**31,6**	**23,9**	**60,0**	**3 148,0**	**5 632,0**	**6 339,0**

Table 34: Water use in the Lower Orange Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															433,0	**433,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	780,0	780,0		0,0		0,0	9,0									**789,0**
		PERENNIAL SURFACE WATER	756,0	756,0		0,0		0,0	9,0									**765,0**
	2	- Water abstracted for own use	756,0	756,0		0,0		0,0	9,0									**765,0**
	2.1	- of which for irrigation	756,0	756,0		0,0												**756,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	24,0	24,0														**24,0**
	4	- Water abstracted for own use	24,0	24,0														**24,0**
	4.1	- of which for irrigation	24,0	24,0														**24,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)									1 787,0	16,0	16,0	12,0	17,0	54,0		**1 902,0**
	6.1	- of which : Wastewater										16,0						**16,0**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**77,0**
	7	- Irrigation water																**76,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**1,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**780,0**	**780,0**		**0,0**		**0,0**	**9,0**		**1 787,0**	**16,0**	**16,0**	**12,0**	**17,0**	**54,0**	**433,0**	**3 124,0**
CONSUMPTION (U - S)			**704,0**	**704,0**		**0,0**		**0,0**	**9,0**		**1 787,0**	**15,0**	**6,9**	**5,2**	**17,0**	**-1 832,0**	**433,0**	**1 145,0**

Table 35: Water use in the Fish to Tsitsikamma Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (U1)**															1 911,0	**1 911,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (U2)**	770,0	763,0		7,0		0,0	0,0									**770,0**
		PERENNIAL SURFACE WATER	734,0	727,0		7,0		0,0	0,0									**734,0**
	2	**- Water abstracted for own use**	734,0	727,0		7,0		0,0	0,0									
	2.1	**- of which for irrigation**	734,0	727,0		7,0												**734,0**
	3	**- Water abstracted for delivery**																**734,0**
		GROUNDWATER	36,0	36,0														**36,0**
	4	**- Water abstracted for own use**	36,0	36,0														**36,0**
	4.1	**- of which for irrigation**	36,0	36,0														**36,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER DELIVERED THROUGH MAINS (U3)**									439,0	66,1	66,1	49,9	16,0	0,0		**637,1**
	6.1	**- of which : Wastewater**										66,1						**66,1**
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (U4)**																**136,0**
	7	**- Irrigation water**																**115,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**																**21,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER USE		**(U1+U2+U3)**	**770,0**	**763,0**		**7,0**		**0,0**	**0,0**		**439,0**	**66,1**	**66,1**	**49,9**	**16,0**	**0,0**	**1 911,0**	**3 318,1**
CONSUMPTION (U - S)			**655,0**	**648,0**		**7,0**		**0,0**	**0,0**		**439,0**	**45,1**	**28,4**	**21,5**	**16,0**	**-571,0**	**1 911,0**	**2 545,0**

Table 36: Water use in the Gouritz Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	1	RAIN (U1)															1 354,0	**1 354,0**
NATURAL RESOURCES		TOTAL WATER ABSTRACTED (U2)	268,0	254,0		14,0		0,0	6,0									**274,0**
		PERENNIAL SURFACE WATER	204,0	190,0		14,0		0,0	6,0									**210,0**
	2	- Water abstracted for own use	204,0	190,0		14,0		0,0	6,0									**210,0**
	2.1	- of which for irrigation	204,0	190,0		14,0												**204,0**
	3	- Water abstracted for delivery																
		GROUNDWATER	64,0	64,0														**64,0**
	4	- Water abstracted for own use	64,0	64,0														**64,0**
	4.1	- of which for irrigation	64,0	64,0														**64,0**
	5	- Water abstracted for delivery																
PRODUCTS	6	WATER DELIVERED THROUGH MAINS (U3)										32,5	32,5	24,5	11,0	1,0		**101,5**
	6.1	- of which : Wastewater										32,5						**32,5**
RESIDUALS		WATER RETURNED (WATER DISCHARGED) (U4)																**22,0**
	7	- Irrigation water																**8,0**
	8	- Cooling water																
	9	- Wastewater treated																
	10	- Wastewater untreated																**14,0**
	11	- Losses/leakages																
	12	- Other returns																
TOTAL WATER USE		(U1+U2+U3)	**268,0**	**254,0**		**14,0**		**0,0**	**6,0**			**32,5**	**32,5**	**24,5**	**11,0**	**1,0**	**1 354,0**	**1 729,5**
CONSUMPTION (U - S)			**260,0**	**246,0**		**14,0**		**0,0**	**0,0**		**-69,0**	**24,5**	**14,0**	**10,5**	**11,0**	**1,0**	**1 354,0**	**1 606,0**

Table 37: Water use in the Olifants/Doring anagement Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (U1)**															952,0	**952,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (U2)**	357,0	356,0		1,0		0,0	3,0									**360,0**
		PERENNIAL SURFACE WATER	312,0	311,0		1,0		0,0	3,0									**315,0**
	2	**- Water abstracted for own use**	312,0	311,0		1,0		0,0	3,0									**315,0**
	2.1	**- of which for irrigation**	312,0	311,0		1,0												**312,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER	45,0	45,0														**45,0**
	4	**- Water abstracted for own use**	45,0	45,0														**45,0**
	4.1	**- of which for irrigation**	45,0	45,0														**45,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER DELIVERED THROUGH MAINS (U3)**										4,0	4,0	3,0	6,0	0,0		**17,0**
	6.1	**- of which : Wastewater**										4,0						**4,0**
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (U4)**																**24,0**
	7	**- Irrigation water**																**22,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**																**2,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER USE		**(U1+U2+U3)**	**357,0**	**356,0**		**1,0**		**0,0**	**3,0**		**0,0**	**4,0**	**4,0**	**3,0**	**6,0**	**0,0**	**952,0**	**1 329,0**
CONSUMPTION (U - S)			**335,0**	**334,0**		**1,0**		**0,0**	**3,0**		**-10,0**	**2,0**	**1,7**	**1,3**	**6,0**	**-3,0**	**952,0**	**1 288,0**

Table 38: Water use in the Berg Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (U1)**															1 212,0	**1 212,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (U2)**	301,0	301,0		0,0		0,0	0,0									**301,0**
		PERENNIAL SURFACE WATER	256,0	256,0		0,0		0,0	0,0									**256,0**
	2	**- Water abstracted for own use**	256,0	256,0		0,0		0,0	0,0									**256,0**
	2.1	**- of which for irrigation**	256,0	256,0		0,0												**256,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER	45,0	45,0														**45,0**
	4	**- Water abstracted for own use**	45,0	45,0														**45,0**
	4.1	**- of which for irrigation**	45,0	45,0														**45,0**
	5	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER DELIVERED THROUGH MAINS (U3)**										241,1	241,1	181,9	14,0	0,0		**678,1**
	6.1	**- of which : Wastewater**										241,1						**241,1**
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (U4)**																**37,0**
	7	**- Irrigation water**																**11,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**																**26,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER USE		**(U1+U2+U3)**	**301,0**	**301,0**		**0,0**		**0,0**	**0,0**			**241,1**	**241,1**	**181,9**	**14,0**	**0,0**	**1 212,0**	**2 191,1**
CONSUMPTION (U - S)			**290,0**	**290,0**		**0,0**		**0,0**	**0,0**		**-234,0**	**215,1**	**103,7**	**78,2**	**14,0**	**-203,0**	**1 212,0**	**1 476,0**

Table 39: Water use in the Breede Water Management Area for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (U1)**															2 088,0	**2 088,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (U2)**	583,0	577,0		6,0		0,0	0,0									**583,0**
		PERENNIAL SURFACE WATER	474,0	468,0		6,0		0,0	0,0									**474,0**
	2	**- Water abstracted for own use**	474,0	468,0		6,0		0,0	0,0									**474,0**
	2.1	**- of which for irrigation**	474,0	468,0		6,0												**474,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER	109,0	109,0														**109,0**
	4	**- Water abstracted for own use**	109,0	109,0														**109,0**
	4.1	**- of which for irrigation**	109,0	109,0														**109,0**
10	**5**	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER DELIVERED THROUGH MAINS (U3)**										24,5	24,5	18,5	11,0	203,0		**281,5**
	6.1	**- of which : Wastewater**										24,5						**24,5**
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (U4)**																**72,0**
	7	**- Irrigation water**																**54,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**																**18,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER USE		**(U1+U2+U3)**	**583,0**	**577,0**		**6,0**		**0,0**	**0,0**		**0,0**	**24,5**	**24,5**	**18,5**	**11,0**	**203,0**	**2 088,0**	**2 952,5**
CONSUMPTION (U - S)			**529,0**	**523,0**		**6,0**		**0,0**	**0,0**		**-256,0**	**6,5**	**10,5**	**8,0**	**11,0**	**202,0**	**2 088,0**	**2 599,0**

Table 40: Water use in South Africa for 2000 (millions of cubic metres)

SOURCE			TOTAL AGRICULTURE	IRRIGATION AGRICULTURE	LIVESTOCK	AFFORESTATION & ALIEN PLANTS	FISHERIES	ENERGY	MINING AND HEAVY INDUSTRIES	DISTRIBUTION OF IRRIGATION WATER	COLLECTION AND DISTRIBUTION OF WATER	SEWERAGE	HOUSEHOLDS	URBAN REQUIREMENTS	RURAL REQUIREMENTS	OTHER WMAs	ENVIRONMENT	TOTAL WATER USE
			A+B +C	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
ECOSYSTEM INPUTS	**1**	**RAIN (U1)**															39 683,0	**39 683,0**
NATURAL RESOURCES		**TOTAL WATER ABSTRACTED (U2)**	8 324,0	7 836,0		488,0		296,0	756,0									**9 376,0**
		PERENNIAL SURFACE WATER	7 282,0	6 794,0		488,0		296,0	756,0									**8 334,0**
	2	**- Water abstracted for own use**	7 282,0	6 794,0		488,0		296,0	756,0									**8 334,0**
	2.1	**- of which for irrigation**	7 282,0	6 794,0		488,0												**7 282,0**
	3	**- Water abstracted for delivery**																
		GROUNDWATER	1 042,0															**1 042,0**
	4	**- Water abstracted for own use**	1 042,0															**1 042,0**
	4.1	**- of which for irrigation**	1 042,0															**1 042,0**
10	**5**	**- Water abstracted for delivery**																
PRODUCTS	**6**	**WATER DELIVERED THROUGH MAINS (U3)**									2 825,2	1899,3	1899,2	1 432,8	572,0	6 284,0		**14 912,5**
	6.1	**- of which : Wastewater**																
RESIDUALS		**WATER RETURNED (WATER DISCHARGED) (U4)**																**1 941,0**
	7	**- Irrigation water**																**672,0**
	8	**- Cooling water**																
	9	**- Wastewater treated**																
	10	**- Wastewater untreated**																**1 269,0**
	11	**- Losses/leakages**																
	12	**- Other returns**																
TOTAL WATER USE		**(U1+U2+U3)**	**8 324,0**	**7 836,0**		**488,0**		**296,0**	**756,0**		**2 825,2**	**1 899,3**	**1 899,2**	**1 432,8**	**572,0**	**6 284,0**	**39 683,0**	**63 971,5**
CONSUMPTION (U - S)			**7 652,0**	**7 164,0**		**488,0**		**296,0**	**502,0**		**-3 724,0**	**884,2**	**816,7**	**616,1**	**572,0**	**-180,0**	**39 683,0**	**47 118,0**

Water asset accounts

Tables 41 to 59 illustrate the water asset accounts for the 19 WMAs and for South Africa for the year 2000.

Table 41: Asset account for water resources in the Limpopo Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]							
2	ABSTRACTION	Sustainable use (-)	162,0				98,0	**260,0**
2.1		of which WMA transfer	0,0					
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	24,0					**24,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	8,0					**8,0**
4		Cooling water						
5		Wastewater treated						
6		Wastewater untreated	16,0					**16,0**
7		Other returns						
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	4 494,0	985,0			98,0	**5 577,0**
	TOTAL TRANSFERS IN	(+)	19,0					**19,0**
9	TRANSFERS IN	Levuvhu/Letaba	8,0					**8,0**
10		Olifants	8,0					**8,0**
11		Crocodile	3,0					**3,0**
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(-)	1 576,0					**1 576,0**
14	TRANSFERS OUT	Flood release	1 420,0					**1 420,0**
15		Ecological Reserve	156,0					**156,0**
16								
17								
18								
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**2 799,0**	**985,0**				**3 784,0**

Table 42:Asset account for water resources in the Luvuvhu/ Letaba Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]							
2	ABSTRACTION	Sustainable use (-)	248,0				44,0	**292,0**
2.1		of which WMA transfer	13,0					**13,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	23,0					**23,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	19,0					**19,0**
4		Cooling water						
5		Wastewater treated	4,0					**4,0**
6		Wastewater untreated						
7		Other returns						
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	5 462,0	1 185,0			44,0	**6 691,0**
	TOTAL TRANSFERS IN	(+)						
9	TRANSFERS IN							
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(-)	2 271,0					**2 271,0**
14	TRANSFERS OUT	Olifants	1,0					**1,0**
15		Levuvhu/Letaba	8,0					**8,0**
16		Flood release	2 038,0					**2 038,0**
17		Ecological Reserve	224,0					**224,0**
18								
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**2 966,0**	**1 185,0**				**4 151,0**

Table 43: Asset account for water resources in the Crocodile West and Marico Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]							
2	ABSTRACTION	Sustainable use (-)	488,0				111,0	**599,0**
2.1		of which WMA transfer	10,0					**10,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	380,0					**380,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	44,0					**44,0**
4		Cooling water						
5		Wastewater treated						
6		Wastewater untreated	336,0					**336,0**
7		Other returns						
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	6 331,0	855,0			111,0	**7 297,0**
	TOTAL TRANSFERS IN	(+)	901,0					**901,0**
9	TRANSFERS IN	Olifants	5,0					**5,0**
10		Upper Vaal	896,0					**896,0**
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(-)	1 677,0					**1 677,0**
14	TRANSFERS OUT	Limpopo	3,0					**3,0**
15		Botswana	7,0					**7,0**
16		Flood Release	1 502,0					**1 502,0**
17		Ecological Reserve	165,0					**165,0**
18								
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**5 447,0**	**855,0**				**6 302,0**

Table 44: Asset account for water resources in the Olifants Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]							
2	ABSTRACTION	Sustainable use (-)	736,0				99,0	**835,0**
2.1		of which WMA transfer	8,0					**8,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	103,0					**103,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	44,0					**44,0**
4		Cooling water						
5		Wastewater treated						
6		Wastewater untreated	59,0					**59,0**
7		Other returns						
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	9 676,0	2 042,0			99,0	**11 817,0**
	TOTAL TRANSFERS IN	(+)	210,0					**210,0**
9	TRANSFERS IN	Inkomati	102,0					**102,0**
10		Usuthu-Umhlatuze	63,0					**63,0**
11		Upper Vaal	44,0					**44,0**
		Luvuvhu/Letaba	1,0					**1,0**
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(--)	4 654,0					**4 654,0**
14	TRANSFERS OUT	Limpopo	8,0					**8,0**
15								
16								
17		Flood release	4 186,0					**4 186,0**
18		Ecological Reserve	460,0					**460,0**
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**4 599,0**	**2 042,0**				**6 641,0**

Table 45: Asset account for water resources in the Inkomati Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]							
2	ABSTRACTION	Sustainable use (-)	950,0				9,0	**959,0**
2.1		of which WMA transfer	148,0					**148,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	77,0					**77,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	58,0					**58,0**
4		Cooling water						
5		Wastewater treated						
6		Wastewater untreated	19,0					**19,0**
7		Other returns						
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	14 615,0	3 539,0			9,0	**18 163,0**
	TOTAL TRANSFERS IN	(+)						
9	TRANSFERS IN							
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(-)	10 732,0					**10 732,0**
14	TRANSFERS OUT	Olifants	148,0					**148,0**
15		Flood release	9 576,0					**9 576,0**
16		Ecological Reserve	1 008,0					**1 008,0**
17								
18								
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**3 010,0**	**3 539,0**				**6 549,0**

Table 46: Asset account for water resources in the Usutu to Mhlatuze Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]							
2	ABSTRACTION	Sustainable use (-)	560,0				39,0	**599,0**
2.1		of which WMA transfer	114,0					**114,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	51,0					**51,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	39,0					**39,0**
4		Cooling water						
5		Wastewater treated						
6		Wastewater untreated	12,0					**12,0**
7		Other returns						
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	6 800,0	4 780,0			39,0	**11 619,0**
	TOTAL TRANSFERS IN	(+)	32,0					**32,0**
9	TRANSFERS IN	Tukela	32,0					**32,0**
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(-)	1 306,0					**1 306,0**
14	TRANSFERS OUT	Olifants	51,0					**51,0**
15		Upper Vaal	63,0					**63,0**
16								
17		Flood release						
18		Ecological Reserve	1 192,0					**1 192,0**
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**5 017,0**	**4 780,0**				**9 797,0**

Table 47: Asset account for water resources in the Thukela Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]							
2	ABSTRACTION	Sustainable use (-)	236,0				15,0	**251,0**
2.1		of which Crocodile WMA transfer	497,0					**497,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	57,0					**57,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	23,0					**23,0**
4		Cooling water						
5		Wastewater treated						
6		Wastewater untreated	34,0					**34,0**
7		Other returns						
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	8 188,7	3 799,0			15,0	**12 002,7**
	TOTAL TRANSFERS IN							
9	TRANSFERS IN							
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(-)	1 356,0					**1 356,0**
14	TRANSFERS OUT	Upper Vaal	431,0					**431,0**
15		Mvoti-Mzimkulu	32,0					**32,0**
16		Usutu-Mhlatuze	34,0					**34,0**
17		Flood release	0,0					**0,0**
18		Ecological Reserve	859,0					**859,0**
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**6 653,7**	**3 799,0**				**10 452,7**

Table 48: Asset account for water resources in the Upper Vaal Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]							
2	ABSTRACTION	Sustainable use (-)	335,0				32,0	**367,0**
2.1		of which Crocodile WMA transfer	1 481,0					**1 481,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	518,0					**518,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	11,0					**11,0**
4		Cooling water						
5		Wastewater treated						
6		Wastewater untreated	507,0					**507,0**
7		Other returns						
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	2 872,0	2 423,0			32,0	**5 327,0**
	TOTAL TRANSFERS IN	(+)	798,0					**798,0**
9	TRANSFERS IN	- Tugela - Sterkfontein	411,0					**411,0**
10		- Usuthu	117,0					**117,0**
11		- Lesotho Highlands	270,0					**270,0**
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(-)	2 401,0					**2 401,0**
14	TRANSFERS OUT	- Olifants	36,0					**36,0**
15								
16		- Middle Vaal	799,0					**799,0**
17		- Flood release	1 267,0					**1 267,0**
18		- Ecological Reserve	299,0					**299,0**
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**1 452,0**	**2 423,0**				**3 875,0**

Table 49: Asset account for water resources in the Middle Vaal Water Management Area for 2000 (millions of cubic metres)

				SURFACE WATER				GROUNDWATER	TOTAL
				DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
				A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]		(+)						
2	ABSTRACTION	Sustainable use	(-)	191,0				54,0	**245,0**
2.1		of which WMA transfer		605,0					**605,0**
		Depletion of groundwater stocks							
3	TOTAL RETURN FLOWS		(+)	64,0					**64,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water		16,0					**16,0**
4		Cooling water							
5		Wastewater treated							
6		Wastewater untreated		48,0					**48,0**
7		Other returns							
8	PRECIPITATION (ANNUAL RUN OFF)		(+)	8 564,0	888,0			54,0	**9 506,0**
	TOTAL TRANSFERS IN		(+)	793,0					**793,0**
9	TRANSFERS IN	Upper Vaal		793,0					**793,0**
10									
11									
12	NET NATURAL TRANSFERS		(+\-)						
13	EVAPOTRANSPIRATION		(-)						**0,0**
	TOTAL TRANSFERS OUT		(-)	1 749,0					**1 749,0**
14	TRANSFERS OUT	Lower Vaal		603,0					**603,0**
15		Upper Orange		2,0					**2,0**
16		Flood release		1 035,0					**1 035,0**
17		Ecological Reserve		109,0					**109,0**
18									
	TOTAL VOLUME CHANGE		(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster							
20		Discovery							
21		Others							
	CLOSING STOCK [as at 30 September 2000]			**7 481,0**	**888,0**				**8 369,0**

Table 50: Asset account for water resources in the Lower Vaal Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]	(+)						
2	ABSTRACTION	Sustainable use (-)	256,0				126,0	**382,0**
2.1		of which Crocodile WMA transfer	0,0					**0,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	59,0					**59,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	52,0					**52,0**
4		Cooling water						
5		Wastewater treated						
6		Wastewater untreated	7,0					**7,0**
7		Other returns						
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	13 766,0	368,0			126,0	**14 260,0**
	TOTAL TRANSFERS IN	(+)	651,0					**651,0**
9	TRANSFERS IN	Upper Orange	19,0					**19,0**
10		Middle Vaal	632,0					**632,0**
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(-)	504,0					**504,0**
14	TRANSFERS OUT	Flood release	456,0					**456,0**
15		Ecological Reserve	48,0					**48,0**
16								
17								
18								
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**13 716,0**	**368,0**				**14 084,0**

Table 51: Asset account for water resources in the Mvoti to Umzimkulu Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999] (+)							
2	ABSTRACTION	Sustainable use (-)	433,0				6,0	**439,0**
2.1		of which WMA transfer						
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	88,0				0,0	**88,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	21,0					**21,0**
4		Cooling water	0,0					**0,0**
5		Wastewater treated	0,0					**0,0**
6		Wastewater untreated	67,0					**67,0**
7		Other returns	0,0					**0,0**
8	PRECIPITATION (ANNUAL RUN OFF) (+)		4 417,5	4 798,0			6,0	**9 221,5**
	TOTAL TRANSFERS IN	(+)	34,0					**34,0**
9	TRANSFERS IN	Thukela	34,0					**34,0**
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION (-)							
	TOTAL TRANSFERS OUT	(-)	1 160,0					**1 160,0**
14	TRANSFERS OUT	Flood release						
15		Ecological Reserve	1 160,0					**1 160,0**
16								
17								
18								
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**2 946,5**	**4 798,0**				**7 744,5**

Table 52: Asset account for water resources in the Mzimvubu to Keiskamma Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]	(+)						
2	ABSTRACTION	Sustainable use (-)	777,0				21,0	**798,0**
2.1		of which WMA transfer						
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	57,0					**57,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	17,0					**17,0**
4		Cooling water	0,0					**0,0**
5		Wastewater treated	0,0					**0,0**
6		Wastewater untreated	40,0					**40,0**
7		Other returns	0,0					**0,0**
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	11 186,8	7 241,0			21,0	**18 448,8**
	TOTAL TRANSFERS IN	(+)						
9	TRANSFERS IN							
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(-)	1 122,0					**1 122,0**
14	TRANSFERS OUT	Flood release						
15		Ecological Reserve	1 122,0					**1 122,0**
16								
17								
18								
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**9 344,8**	**7 241,0**				**16 585,8**

Table 53: Asset account for water resources in the Upper Orange Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999] (+)							
2	ABSTRACTION	Sustainable use (-)	714,0				65,0	**779,0**
2.1		of which WMA transfer	3 105,0					**3 105,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	72,0					**72,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	34,0					**34,0**
4		Cooling water	0,0					**0,0**
5		Wastewater treated	0,0					**0,0**
6		Wastewater untreated	38,0					**38,0**
7		Other returns	0,0					**0,0**
8	PRECIPITATION (ANNUAL RUN OFF) (+)		17 152,6	6 981,0			65,0	**24 198,6**
	TOTAL TRANSFERS IN	(+)	2,0					**2,0**
9	TRANSFERS IN	Middle Vaal	2,0					**2,0**
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION (-)							
	TOTAL TRANSFERS OUT	(-)	4 454,0					**4 454,0**
14	TRANSFERS OUT	Fish-Tsitsikamma	714,2					**714,2**
15		Lower Orange	2 359,8					**2 359,8**
16		Lower Vaal	31,1					**31,1**
17		Flood release	0,0					**0,0**
18		Ecological Reserve	1 349,0					**1 349,0**
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**12 058,6**	**6 981,0**				**19 040,0**

Table 54: Asset account for water resources in the Lower Orange Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999] (+)							
2	ABSTRACTION	Sustainable use (-)	765,0				24,0	**789,0**
2.1		of which WMA transfer	54,0					**54,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	77,0					**77,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	76,0					**76,0**
4		Cooling water	0,0					**0,0**
5		Wastewater treated	0,0					**0,0**
6		Wastewater untreated	1,0					**1,0**
7		Other returns	0,0					**0,0**
8	PRECIPITATION (ANNUAL RUN OFF) (+)		52 270,6	502,0			24,0	**52 796,6**
	TOTAL TRANSFERS IN	(+)	1 886,0					**1 886,0**
9	TRANSFERS IN	Upper Orange	1 886,0					**1 886,0**
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION (-)							
	TOTAL TRANSFERS OUT	(-)	778,5					**778,5**
14	TRANSFERS OUT	Namibia	54,0					**54,0**
15		- Flood release	655,5					**655,5**
16		- Ecological Reserve	69,0					**69,0**
17			,					
18								
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**52 690,1**	**502,0**				**53 192,1**

Table 55: Asset account for water resources in the Fish to Tsitsikamma Water Management Area for 2000 (millions of cubic metres)								
			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999]	(+)						
2	ABSTRACTION	Sustainable use (-)	265,0				36,0	**301,0**
2.1		: of which WMA transfer	0,0					
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	115,0					**115,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	115,0					**115,0**
4		Cooling water	0,0					**0,0**
5		Wastewater treated	0,0					**0,0**
6		Wastewater untreated	0,0					**0,0**
7		Other returns	0,0					**0,0**
8	PRECIPITATION (ANNUAL RUN OFF)	(+)	62,4	2 154,0			36,0	**2 252,4**
	TOTAL TRANSFERS IN	(+)	571,0					**571,0**
9	TRANSFERS IN	Fish-Tsitsikamma	571,0					**571,0**
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION	(-)						
	TOTAL TRANSFERS OUT	(-)	243,0					**243,0**
14	TRANSFERS OUT							
15								
16								
17		- Flood release	243,0					**243,0**
18		- Ecological Reserve						
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**240,4**	**2 154,0**				**2 394,4**

Table 56: Asset account for water resources in the Gouritz Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999] (+)							
2	ABSTRACTION	Sustainable use (-)	191,0				64,0	**255,0**
2.1		of which WMA transfer	1,0					**1,0**
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	22,0					**22,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	8,0					**8,0**
4		Cooling water	0,0					**0,0**
5		Wastewater treated	0,0					**0,0**
6		Wastewater untreated	14,0					**14,0**
7		Other returns	0,0					**0,0**
8	PRECIPITATION (ANNUAL RUN OFF) (+)		946,9	1 679,0			64,0	**2 689,9**
	TOTAL TRANSFERS IN	(+)						
9	TRANSFERS IN							
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION (-)							
	TOTAL TRANSFERS OUT	(-)	326,0					**326,0**
14	TRANSFERS OUT	Breede	1,0					**1,0**
15		Floor Release						**0,0**
16		Ecological Reserve	325,0					**325,0**
17								
18								
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**451,9**	**1 679,0**				**2 130,9**

Table 57: Asset account for water resources in the Olifants/ Doring Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999] (+)							
2	ABSTRACTION	Sustainable use (-)	266,0				45,0	**311,0**
2.1		of which WMA transfer	0,0					
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	24,0					**24,0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	22,0					**22,0**
4		Cooling water	0,0					**0,0**
5		Wastewater treated	0,0					**0,0**
6		Wastewater untreated	2,0					**2,0**
7		Other returns	0,0					**0,0**
8	PRECIPITATION (ANNUAL RUN OFF) (+)		488,7	1 108,0			45,0	**1 641,7**
	TOTAL TRANSFERS IN	(+)	3,0					**3,0**
9	TRANSFERS IN	Breede	3,0					**3,0**
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION (-)							
	TOTAL TRANSFERS OUT	(-)	156,0					**156,0**
14	TRANSFERS OUT							
16								
17		- Flood release						
18		- Ecological Reserve	156,0					**156,0**
	TOTAL VOLUME CHANGE	(+)						
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**93,7**	**1 108,0**				**1 201,7**

Table 58: Asset account for water resources in the Breede Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999] (+)			0				
2	ABSTRACTION	Sustainable use (-)	474,0				109,0	583,0
2.1		of which WMA transfer	203,0					203,0
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	72,0					72,0
3	RETURN FLOWS / RESIDUALS	Irrigation water	54,0					54,0
4		Cooling water	0,0					0,0
5		Wastewater treated	0,0					0.0
6		Wastewater untreated	18,0					18,0
7		Other returns	0,0					0,0
8	PRECIPITATION (ANNUAL RUN OFF) (+)		3 389,5	2 472,0			109,0	5 970,5
	TOTAL TRANSFERS IN	(+)	1,0					1,0
9	TRANSFERS IN	Gouritz	1,0					1,0
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION (-)							
	TOTAL TRANSFERS OUT	(-)	587,0					587,0
14	TRANSFERS OUT	Olifants/Doring	3,0					3,0
15		Berg	200,0					200,0
16		Flood Release						0,0
17		Ecological Reserve	384,0					384,0
18								
	TOTAL VOLUME CHANGE	(+)	0,0					
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others	0,0					
	CLOSING STOCK [as at 30 September 2000]		2 401,5	2 472,0				4 873,5

Table 59: Asset account for water resources in the Berg Water Management Area for 2000 (millions of cubic metres)

			SURFACE WATER				GROUNDWATER	TOTAL
			DAMS AND OTHER INTERMEDIATE STORAGE CAPACITY	TOTAL RIVER	PERENNIAL RIVER	EPHEMERAL RIVER		
			A	B + C	B	C	D	A+B+C+D
1	OPENING STOCK [AS AT 1st OCTOBER 1999] (+)							
2	ABSTRACTION	Sustainable use (-)	419,0				45.0	**464.0**
2.1		of which WMA transfer	0,0					
		Depletion of groundwater stocks						
3	TOTAL RETURN FLOWS	(+)	37,0					**37.0**
3	RETURN FLOWS / RESIDUALS	Irrigation water	11,0					**11.**
4		Cooling water	0,0					**0.0**
5		Wastewater treated	0,0					**0.0**
6		Wastewater untreated	26,0					**26.0**
7		Other returns	0,0					**0.0**
8	PRECIPITATION (ANNUAL RUN OFF) (+)		1592,0	1 429,0			45.0	**3066.0**
	TOTAL TRANSFERS IN	(+)	200,0					**200**
9	TRANSFERS IN	Breede	200,0					**200**
10								
11								
12	NET NATURAL TRANSFERS	(+\-)						
13	EVAPOTRANSPIRATION (-)		409,4					**409.4**
	TOTAL TRANSFERS OUT	(-)	217,0					**217.0**
14	TRANSFERS OUT							
15								
16								
17		- Flood release	217,0					**217.0**
18		- Ecological Reserve	0,0					**0.0**
	TOTAL VOLUME CHANGE	(+)	0,0					**0.0**
19	OTHER VOLUME CHANGES	Due to natural disaster						
20		Discovery						
21		Others						
	CLOSING STOCK [as at 30 September 2000]		**1 193,0**	**1 429,0**				**2622.0**

ADDITIONAL INFORMATION

Explanatory notes

Throughout the water accounts the urban figure is split as follows: 57% households: 43% urban requirements. This is as a result of the studies done for the Upper Vaal Water Management Area for the year 2000.

The Water Accounts for South Africa are as a result of aggregation of the Water Accounts for various Water Management Areas.

Glossary

Account
An account is a tool which records, for a given aspects of economic life, (a) the uses and resources or (b) the changes in assets and the changes in liabilities and\or (c) the stock of assets and liabilities existing at a certain time; the transaction accounts include a balancing item which is used to equate the two sides of the accounts (e.g. resources and uses) and which is meaningful measure of economic performance in itself.

Catchment
A catchment is an area on which rain falls and the water thus run into a particular river.

Evapotranspiration
Evapotranspiration is the combined loss of water by evaporation from the soil or surface water and transpiration from the plants and animals.

Groundwater
Freshwater beneath the earth's surface (usually in aquifers) supplying wells and springs.

Mean annual runoff
Average annual flow under natural conditions. (This definition is dependent on the runoff regime for each river basin).

Natural Resource Accounting (NRA)
Accounting system that deals with stocks and stock changes of natural assets, comprising biota (produced or wild), subsoil assets (proved reserves), water and land with their aquatic and terrestrial ecosystems. It is frequently used in the sense of physical accounting as distinguished from monetary (environmental) accounting.

Precipitation
Rain or snow falling from the atmosphere and deposited on land or water surfaces.

Residual
Amount of pollutant that remain in the environment after a natural or technological process has taken place.

Run-off
Portion of rainfall, melted snow or irrigation water that flows across the ground's surface and is eventually returned to streams. Run-off can pick up pollutants from air or land and carry them to receiving waters.

Satellite accounts or systems
Additional or parallel accounting system that expands the analytical capacity of national accounts, without overburdening or disrupting the central system. It may provide additional information, apply

complementary or alternative concepts, extend the coverage of costs and benefits of human activities and link physical with monetary data.

Water management area
An area defined for specific water management purposes.

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