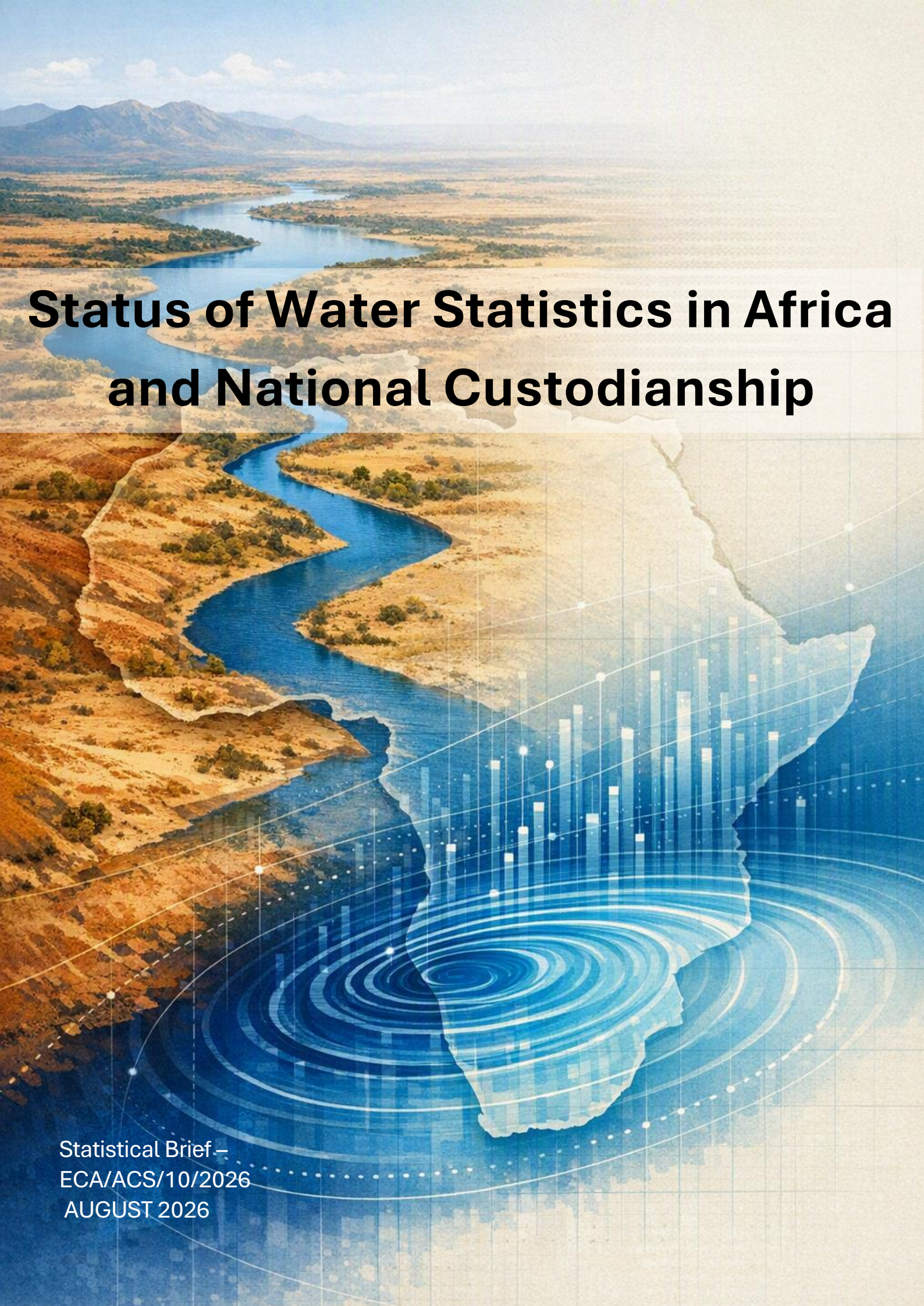




Status of Water Statistics in Africa and National Custodianship

Statistical Brief –
ECA/ACS/10/2026
AUGUST 2026

Table of Contents

1. INTRODUCTION.....	1
2. GLOBAL FRAMEWORKS ON WATER STATISTICS.....	3
2.1. Global Frameworks Shaping African Water Statistics	3
2.2. Water Indicators as a Statistical Block.....	4
3. DEFINITION OF CONCEPTS AND DATA SOURCES	7
3.1. Definition of Concepts.....	7
3.1.1. Water Resources.....	7
3.1.2. Abstraction and Use.....	7
3.1.3. Water Supply Services	7
3.1.4. Household Access to Water and Sanitation	7
3.1.5. Wastewater Generation and Treatment.....	7
3.1.6. Ambient Water Quality	7
3.1.7. Water Accounts and the Economic Value of Water	7
3.2. Data Sources.....	8
4. MEASUREMENT OF INDICATORS	9
4.1. Water Resources.....	9
4.2. Abstraction and Use.....	9
4.3. Water Supply Services	9
4.4. Household Access to Water and Sanitation.....	9
4.5. Wastewater Generation and Treatment.....	9
4.6. Ambient Water Quality	10
4.7. Water Accounts	10
5. KEY FINDINGS.....	11
5.1 Status of Water Statistics Generated and Shared by African Countries based on Global Reporting Frameworks	11
5.2 The International Substitutes and their Inconsistencies	18
5.3 What Mature National Water Statistics Systems Produce	22
6. IMPLICATIONS FOR PLANNING AND DECISION-MAKING.....	28
7. OPTIONS FOR FILLING THE GAP.....	29
7.1. Establish a Standing National Water Statistics Function	29
7.2. Restore What Has Already Been Built.....	29

7.3. Start from the Administrative Data Already Held	29
7.4. Adopt the Accounting Framework, in Stages	29
7.5. Use International and Satellite Sources as Inputs, Under National Control	30
8. COMMITMENTS AND ACTIONS.....	31
8.1. Roles for the African Centre for Statistics	31
8.2. Roles for Member States.....	31
8.3. Roles for National Statistical Offices and MDAs.....	31
8.4. Coordination with International Custodians	31
9. CONCLUSION AND WAY FORWARD.....	32
10. DATA SOURCES AND REFERENCES.....	33

List of Figures

- Figure 1: Interlinkages Between the Seven Domains of the Water Statistical Block
- Figure 2: When African Countries Last Reported Water Statistics Nationally
- Figure 3: Water Statistics Compiled Nationally, by African Countries
- Figure 4: Depth and Currency of National Water Reporting, by Country
- Figure 5: National Water Statistics Products and When They Last Appeared
- Figure 6: Stage of SEEA Implementation, by Region, 2025 Global Assessment
- Figure 7: National Measurement Capability by Statistic and Instrument
- Figure 8: Agreement Between Paired Custodian Series, African Countries
- Figure 9: Level of Water Stress Under Two Official Series, African Countries
- Figure 10: National Reported Abstraction Against Internationally Published Withdrawal
- Figure 11: Recency and Cadence of the International Series, African Countries
- Figure 12: Production Cycle for National Water Statistics, Selected Systems
- Figure 13: What Each Instrument Collects, by Measurement Domain

List of Tables

- Table 1: Frameworks Shaping African Water Statistics
- Table 2: The Seven Domains of the Water Statistical Block
- Table 3: National Water Statistics Products Published by African NSOs and MDAs
- Table 4: National Water Statistics Production in Selected Mature Systems
- Table 5: Variables Collected by the Full Joint OECD/Eurostat Questionnaire on Inland Waters
- Table 6: Value Addition of a Full National Water Account
- Table 7: The Supporting Apparatus That Accompanies the Indicator Set

1. INTRODUCTION

The African Union's 2026 call to legitimize water data across the continent comes at a time when many national statistical systems have yet to institutionalize the regular production and dissemination of water statistics. Although the economic benefits and the regional integration potential of legitimizing water data are compelling, the call also reflects three deeper concerns: limited national ownership of water statistics, Africa's underrepresentation in the global water statistics landscape, and conflicting estimates published by international sources. The continent's underrepresentation is evident in the biennial global data collection on water conducted by the United Nations Statistics Division (UNSD) and the United Nations Environment Programme (UNEP), to which 19 African countries have yet to submit data. Most African national statistical offices produce and disseminate only some water-related statistics through household surveys, notably the Demographic and Health Survey, which began in 1987 and has been implemented in 35 of the 54 African countries. This demonstrates an existing statistical foundation for water, the critical input for agricultural activities on the continent, but not yet a comprehensive and institutionalized national system for water data and statistics.

The scope of water indicators is very broad, including the number of people with access to safely managed drinking water, the level of water stress, renewable freshwater per capita, the proportion of wastewater safely treated, and the economic value of water. This broad scope requires a multi-agency approach, an interoperable system, and government commitment to producing, disseminating, and using water data and statistics. However, the lack of data- and statistics-sharing systems and the absence of roadmaps for data integration in most African national statistical systems mean that the value of water statistics in Africa remains underutilised. In recent years, water-related displacements, flooding, and climate concerns provide a more compelling rationale for producing and using water statistics.

These country-level gaps have led to heavy reliance on water estimates compiled by international custodian agencies. Such estimates are often modelled from sparse inputs and, in many cases, incorporate no recent national measurement. Although they fill an important data gap, their usefulness for national decision-making is constrained by three concerns: timeliness, relevance to country-level conditions and reliability when assessed against verifiable observations on the ground. These limitations are particularly consequential as mining-related pollution and hydrological drought increasingly affect water bodies across the continent, creating an urgent need for near-real-time data from diverse, verifiable sources.

The foregoing underscores the three objectives addressed in this brief. First, assess the production and dissemination of water statistics by African countries. Second, examine the status and differences in water statistics within and across international outlets. Third, review methods and institutional arrangements used by statistical systems that have institutionalized water statistics, as a reference for African countries.

The remaining sections of the brief is structured as follows: Section two presents the global frameworks on water statistics. This is followed in Section Three by a definition of concepts and data sources.

2. GLOBAL FRAMEWORKS ON WATER STATISTICS

2.1. Global Frameworks Shaping African Water Statistics

African water statistics do not operate in a vacuum. They are shaped by, and are expected to report into, a set of global and continental frameworks that establish measurement standards, reporting obligations and methodological guidance. Table 1 sets out the frameworks that matter for the water block and how far each has been taken up across the continent. Two features of that uptake shape everything that follows: frameworks that carry measurement standards have the weakest African adoption, while frameworks that carry reporting obligations are satisfied largely with figures countries did not produce.

TABLE 1: FRAMEWORKS SHAPING AFRICAN WATER STATISTICS

Framework	Custodian	Relevant water domains	African uptake
System of Environmental-Economic Accounting for Water (SEEA-Water), 2012	UN Statistics Division	Physical supply and use, asset accounts, emission accounts, monetary accounts	19 African countries implement any SEEA module; only 6 at Stage III. 4 of the 6 countries that compiled water accounts have discontinued them
SDG 6 monitoring framework	IAEG-SDGs, with WHO/UNICEF JMP, FAO, UNEP, UNECE and UNESCO as custodians	Targets 6.1 to 6.6: drinking water, sanitation, water quality, water use efficiency and stress, IWRM, transboundary cooperation, ecosystems	Reporting is mandatory; most published African country values are modelled by the custodian rather than nationally measured
UNSD/UNEP Questionnaire on Environment Statistics, water section	UN Statistics Division with UNEP	Renewable resources, abstraction and use, water supply industry, wastewater generation and treatment, population connected	A simplified version is sent to African countries; 35 of 54 have ever responded, and 10 did so in the 2024 round.
Joint OECD/Eurostat Questionnaire on Inland Waters	OECD and Eurostat	The full water statistics set across 8 tables plus a water use balance	Not administered to African countries; it is the fuller instrument used by EU and OECD members
Framework for the Development of Environment Statistics (FDES 2013)	UN Statistics Division	Water within environmental resources and their use, and within residuals	The reference architecture for national environment statistics programmes; adoption is partial and rarely resourced
Africa Water Vision 2025	African Union, African Development Bank and UNECA	Continental policy targets across resource management, access and governance	Adopted continentally; sets policy goals but imposes no measurement standard or reporting obligation
Continental Africa Water Investment Programme (AIP), 2021–2030	AMCOW	Investment mobilisation and tracking across the water sector	Adopted in 2021; progress tracking depends on custodian-produced data rather than national statistics

2.2. Water Indicators as a Statistical Block

Africa Beyond the Numbers is part of the African Centre for Statistics' efforts to produce concise, policy-ready statistical products that communicate why the numbers matter, not just what they are. The aim is to present the status of the availability, production, and dissemination of relational development indicators to enhance policy uptake. This brief is one of nine statistical blocks in the series, and this edition examines the water block.

A statistical block is a set of complementary indicators used to measure and understand the multidimensional nature of an issue. Water qualifies clearly. No single number describes a country's water position: the resource base, the volumes abstracted and by whom, the service delivered to households and firms, the wastewater returned to the environment, and the institutional arrangements governing allocation are distinct measurement objects serving distinct policy purposes.

The international reference framework for organising these measures is the System of Environmental-Economic Accounting for Water (SEEA-Water), adopted by the UN Statistical Commission in 2012, which arranges water statistics into physical supply and use tables, asset accounts for water stocks, emission accounts, and the corresponding monetary accounts. The operational instrument most countries use to compile the underlying statistics is the questionnaire on environment statistics. Its water section covers only five of the seven domains set out below: renewable freshwater resources, freshwater abstraction and use, the water supply industry, wastewater generation and treatment, and the population connected to wastewater treatment, carrying roughly 96 individual variables between them. Household access and ambient water quality are collected through separate channels, a division that matters for the findings later in this brief.

TABLE 2: THE SEVEN DOMAINS OF THE WATER STATISTICAL BLOCK

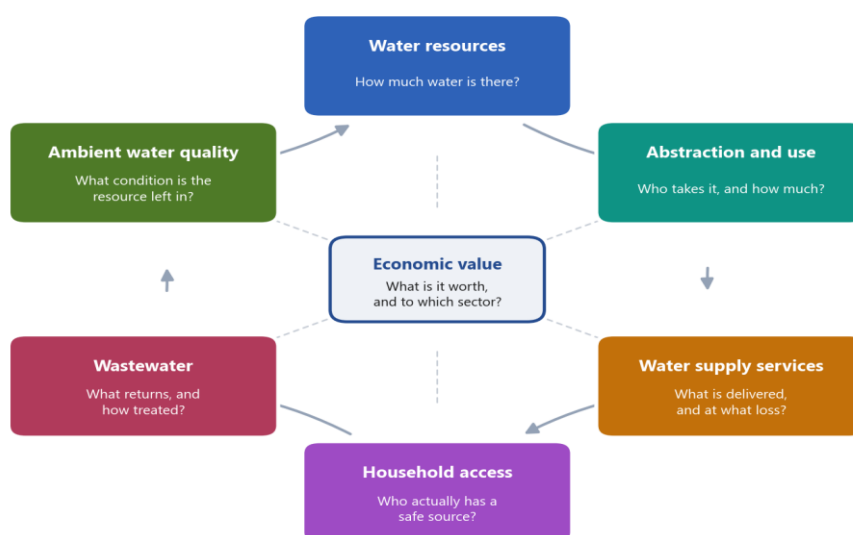
Domain	Policy question it answers	Core measures
Water resources	How much water is there, and how reliably?	Precipitation; evapotranspiration; internal flow; transboundary inflow and outflow; aquifer recharge; groundwater available for annual abstraction
Abstraction and use	Who takes water, and how much?	Abstraction by source and by economic sector; irrigation withdrawal; desalination; reuse; net abstraction after returns
Water supply services	What is delivered, and at what loss?	Volumes supplied by utilities; distribution losses; supply by customer class; population served by the utility, urban and rural
Household access	Who actually has a safe source?	Safely managed and basic drinking water (SDG 6.1.1); safely managed and basic sanitation (SDG 6.2.1); time to source; expenditure on water
Wastewater	What returns to the environment, and how treated?	Wastewater generated by sector; volumes treated by treatment level; untreated discharge; population connected to treatment; sludge

Ambient water quality	What condition is the resource left in?	Proportion of water bodies with good ambient quality (SDG 6.3.2), from dissolved oxygen, conductivity, acidification, nitrogen and phosphorus
Economic value of water	What is water worth, and to which sector?	Monetary supply and use; expenditure and prices; water productivity and intensity by industry

These seven domains are not independent. Water abstracted from the resource base is delivered as a service, reaches households as access, returns to the environment as wastewater, and determines the ambient quality of the resource from which the next abstraction is taken, while the economic domain values every flow in the cycle. A change in one is therefore mechanically a change in another, and an error in one propagates. This is why the block must be compiled as a set rather than as separate indicators: the reconciliation between the domains is itself the principal check on whether any of the numbers are right.

Two of the domains are worth distinguishing carefully because they are often conflated. Water supply services measure what a utility delivers and who it connects. Household access measures whether a household has a safe source at all, including sources the utility does not provide. A country can have low utility coverage and comparatively high access, and the two are produced by entirely different instruments, administrative records in the first case and household surveys in the second.

FIGURE 1: INTERLINKAGES BETWEEN THE SEVEN DOMAINS OF THE WATER STATISTICAL BLOCK



ECA's construct, 2026.

Two features of this block are worth noting at the outset. It is production-heavy: unlike many development statistics, water statistics cannot be obtained from a household survey alone, but require hydrological monitoring, utility administrative records, and industrial reporting to be brought together. It is institutionally dispersed: resource data typically sit with a water ministry

or hydrological service, service-delivery data with utilities and their regulator, and economic data with the statistical office. Producing the block therefore requires inter-institutional coordination, which is precisely what is often missing.

Treating water as a block in this way departs from the usual framing of water data in Africa. Rather than asking what the continent's water indicators show, this brief asks a prior and more consequential question: which of these statistics do African countries produce themselves, through their own national statistical offices and ministries, departments and agencies, and are they adequate to plan with? The answer documented in the sections that follow is that they largely are not. National production is thin, intermittent and shallow, and the gap is filled by international estimates that are widely used as though they were national statistics, but that disagree with one another, disagree with the countries' own figures, and move on cycles that do not match national budget and planning calendars. Where the brief later draws on systems that compile water accounts on a fixed cycle, the purpose is not to rank Africa against them but to identify the specific indicators, methods and institutional arrangements that make regular national water statistics possible.

3. DEFINITION OF CONCEPTS AND DATA SOURCES

3.1. Definition of Concepts

3.1.1. Water Resources

Water resources are the volumes of freshwater available to a territory in a year, made up of internal flow, which is precipitation less evapotranspiration, plus inflow from neighbouring territories. It answers how much water there is and how much may be taken without depleting the resource.

3.1.2. Abstraction and Use

Abstraction, also termed withdrawal, is the volume of water removed from surface water or groundwater for use, measured gross and, after deducting water returned unused, net. It answers who takes water from the resource, how much, and for which economic activity.

3.1.3. Water Supply Services

Water supply services are the volumes of water delivered by the water supply industry, whether publicly or privately operated, together with distribution losses and the population served. It answers what is delivered to users, to how many, and at what loss.

3.1.4. Household Access to Water and Sanitation

Household access is whether a household has a safe drinking water source and safe sanitation, irrespective of who supplies it, graded on the service ladder used for SDG 6.1.1 and 6.2.1 from surface water through basic to safely managed. It answers the question of who actually has a safe source, including from sources with no utility records.

3.1.5. Wastewater Generation and Treatment

Wastewater is water whose quality has been adversely affected by use and which is discharged, measured as volumes generated, volumes treated by level of treatment, volumes discharged untreated, and the population connected to collection and treatment. It answers the question of what returns to the environment, and in what condition.

3.1.6. Ambient Water Quality

Ambient water quality is the condition of the resource itself, rivers, lakes and aquifers, rather than of the water delivered to users. SDG indicator 6.3.2 expresses it as the proportion of a country's water bodies with good ambient quality, assessed on dissolved oxygen, conductivity, acidification, nitrogen and phosphorus. It answers the question of what condition the resource is left in.

3.1.7. Water Accounts and the Economic Value of Water

A water account organises the preceding concepts into the SEEA-Water framework, in which physical supply must equal physical use plus losses, and attaches expenditure, prices and value added to those physical flows. It answers what water is worth, and to which sector.

3.2. Data Sources

The brief draws on four bodies of evidence. National production is measured from the UNSD/UNEP questionnaire on environment statistics, water section, run about every two years since 1999 and sent directly to national statistical offices and ministries of environment; every African country file on record was parsed variable by variable, yielding 9,640 reported values. National publications are assessed through a direct review of water accounts, environment statistics compendia, statistical yearbooks, and sector surveys issued by African statistical offices and water ministries. International estimates are drawn from 29,230 African records held by FAO AQUASTAT, the World Bank World Development Indicators, the WHO/UNICEF Joint Monitoring Programme, the FAO SDG series, OECD Development Assistance Committee statistics and the DHS Programme. Ambient water quality is taken from the UNEP GEMS/Water country returns for SDG 6.3.2.

Coverage is the 54 African countries. Comparisons between sources are matched by country and reference year before reporting any differences. Variable-level coverage is computed on the questionnaire form in use from 2016 onward, and on the 34 returns that are machine-readable out of the 35 filed. Coverage is for the 54 African countries. Comparisons between sources are matched on country and reference year before reporting any differences, and variable-level coverage is computed on the questionnaire form in use from 2016 onward.¹

¹ Thirty-five African countries have filed a water return at some point. Thirty-four of those files are machine-readable and form the variable-level dataset used here; the exception is Cote d'Ivoire, whose only return dates from 2004.

4. MEASUREMENT OF INDICATORS

A different instrument measures each domain, and the instruments differ sharply in how demanding they are to operate.

4.1. Water Resources

Three approaches dominate. Ground-based hydrological monitoring uses rainfall gauges, stream gauging stations and piezometers to observe precipitation, discharge and groundwater levels directly. Water-balance modelling derives internal flow as precipitation less evapotranspiration, with long-term averages computed over at least 30 consecutive years. Earth observation supplies satellite altimetry for surface water levels and gravimetric measurement of total water storage. Ground networks give the most defensible national figures but have contracted across much of the continent.

4.2. Abstraction and Use

Abstraction is measured from administrative registers where they exist: abstraction licences and permits, utility production records, industrial self-supply returns and irrigation scheme records. Where metering is partial, it is estimated from documented coefficients, such as irrigated area multiplied by crop water requirement. International manuals treat such estimation as a legitimate method, provided the coefficients are published. Allocating abstraction to sectors requires classifying abstractors by economic activity, the step that most often fails.

4.3. Water Supply Services

Two instruments are used, and they measure different things. Utility administrative records give volumes produced and billed, losses and connections, but cover only the utility's service area. Household surveys report the population's drinking water source. A utility record cannot describe self-supplied households, and a survey cannot measure distribution losses.

4.4. Household Access to Water and Sanitation

Access is measured by household survey, and this is the one domain whose primary instrument is already routine in African statistical systems. Demographic and Health Surveys, Multiple Indicator Cluster Surveys, and living-standards surveys include a water and sanitation module that records the household's main source, its location, and availability. The WHO/UNICEF Joint Monitoring Programme harmonises those survey points onto the service ladder. It interpolates between them, so the published annual figure is only as current as the last survey fielded.

4.5. Wastewater Generation and Treatment

Treatment volumes and capacity come from treatment plant operating records, and discharge from consented discharge returns where a permitting regime operates. Wastewater generated is commonly estimated as a fixed return coefficient applied to water supplied, which

propagates any error in the supply figure. Untreated discharge is normally obtained residually, as generation less treatment, which makes it the most fragile figure in the domain.

4.6. Ambient Water Quality

Ambient quality is the most infrastructure-dependent measurement in the block, requiring monitoring stations on rivers, lakes, and aquifers, regular sampling, and laboratory capacity. Countries report through a periodic data drive coordinated by UNEP GEMS/Water, aggregating station readings to water bodies and water bodies to a national score. That score is calculated over monitored water bodies only, so a small network can return a favourable figure precisely because little is measured. In the European Union, the Water Framework Directive obliges member states to monitor and classify every surface water body on a six-year cycle, whereas for African countries reporting is voluntary.

4.7. Water Accounts

A water account is compiled rather than collected. It assembles the outputs of the six measurement domains into physical supply and use tables and reconciles them so that supply equals use plus losses. That reconciliation is the method: discrepancies invisible in a list of indicators become explicit residuals that must be explained or corrected. Monetary accounts attach expenditure, tariff and value-added data from the national accounts to the same physical flows.

5. KEY FINDINGS

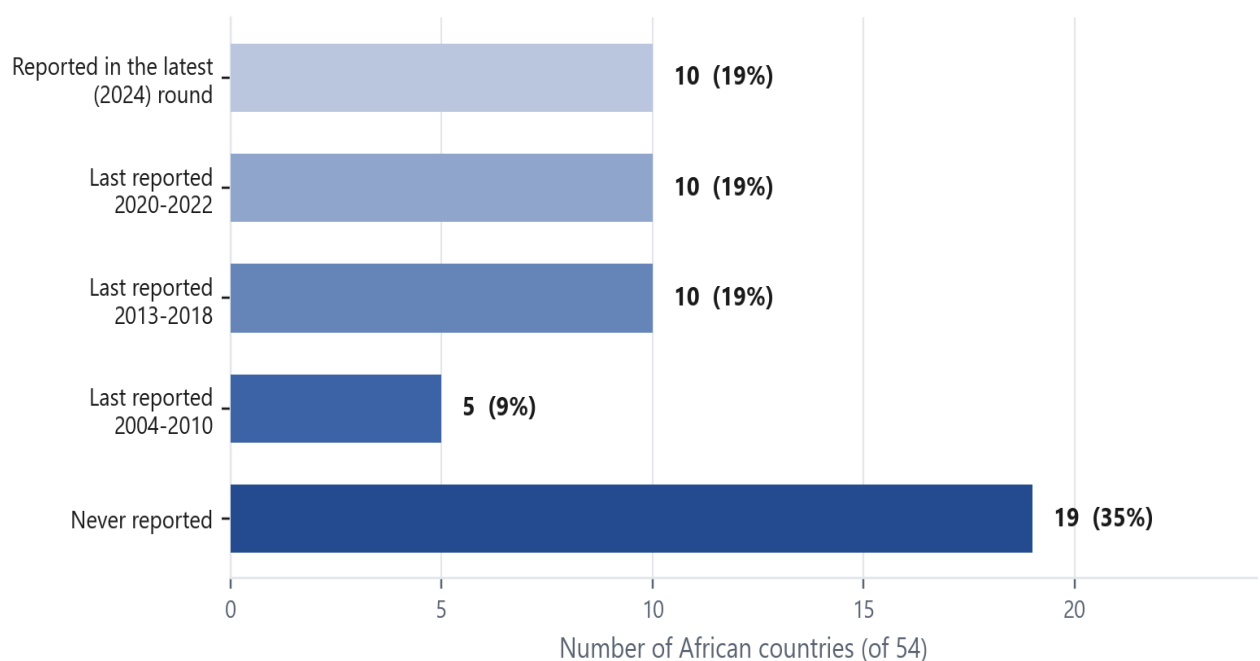
The findings cover three areas of the status of water statistics in Africa. First is the status of water statistics generated and shared by African countries based on global reporting templates. Second is the consistency of Africa's water statistics reporting by international agencies. Third is the reporting of water statistics by African countries based on national efforts.

5.1 Status of Water Statistics Generated and Shared by African Countries based on Global Reporting Frameworks

Nineteen African countries are yet to generate and share water statistics with UNSD/UNEP since its inception in 1999.

Of the 35 countries producing water statistics and submitting their data to UNSD/UNEP, fifteen have their most recent data from before 2018, and the median recent data for the continent is 2020.

FIGURE 5.1: AFRICAN COUNTRIES GENERATING AND SHARING WATER STATISTICS

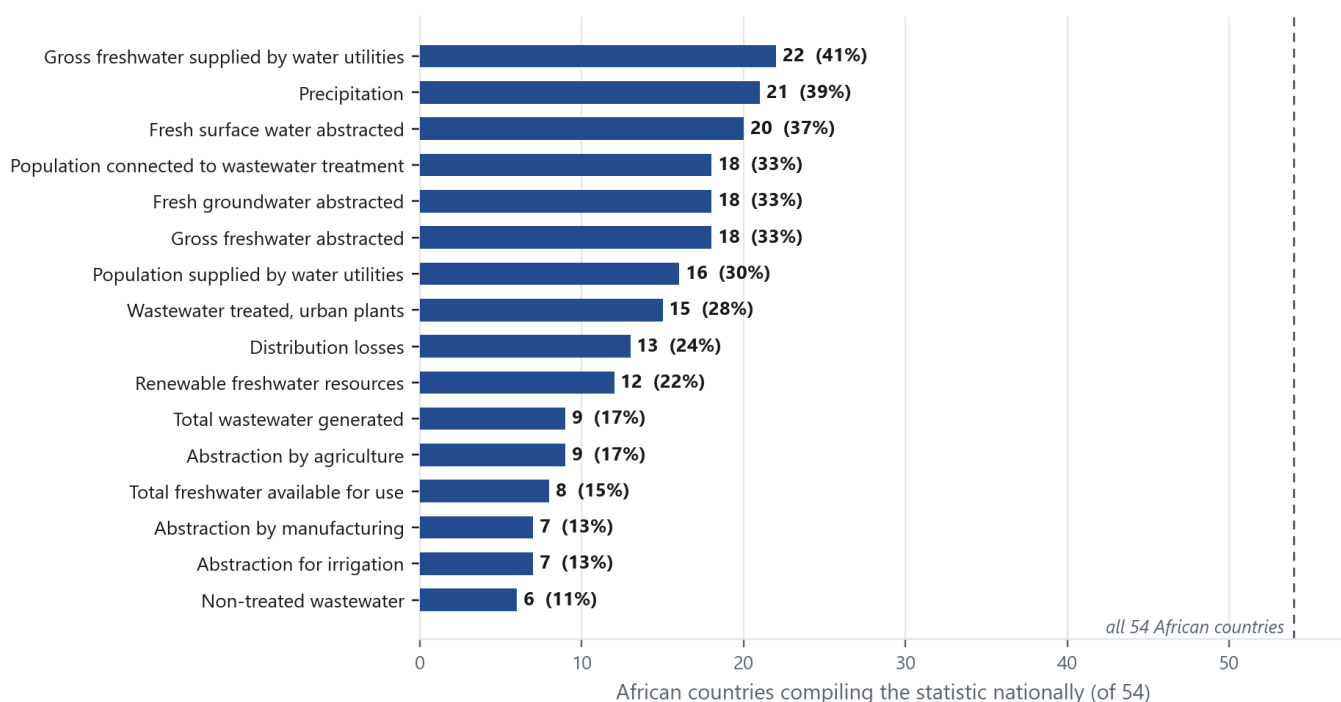


The number of African countries producing water statistics across the different uses of water ranges from a high of 22 member states for gross freshwater supplied by water utilities to a low of six nations for untreated wastewater.

Abstraction of water for agriculture, the sector that dominates African water use, is compiled by nine countries, while only seven nations report abstraction for purposes of irrigation.

Fewer than ten African countries report six of the 16 domains of water use.

FIGURE 5.2: STATUS OF GENERATING AND SHARING STATISTICS ON THE USE OF WATER BY AFRICAN COUNTRIES

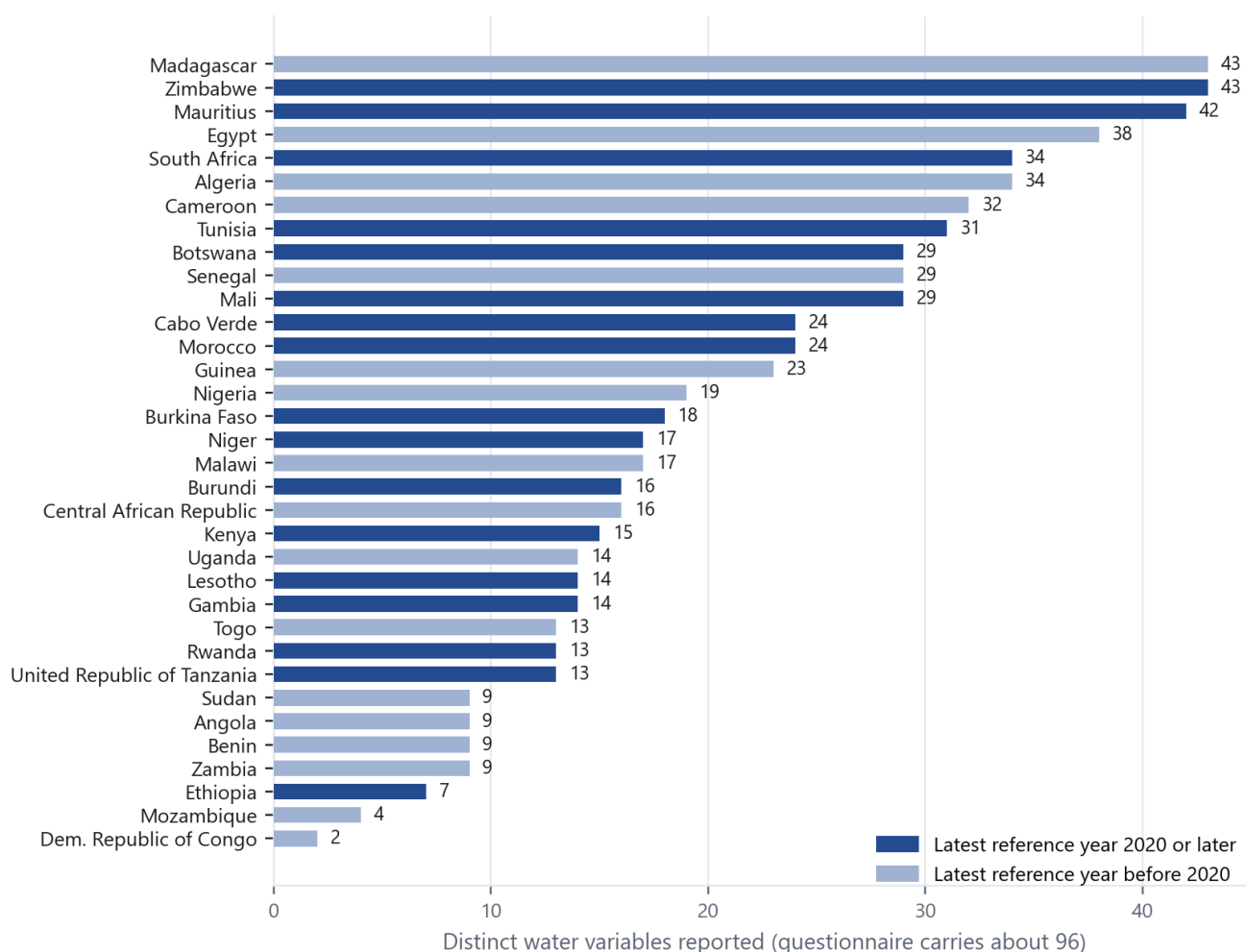


Three countries, namely Zimbabwe (2021), Mauritius (2023) and Madagascar (2007), produce at least two-fifths of the expected water statistics, with the continent submitting a median of only 17 of the 96 variables.

Seven countries, including the Democratic Republic of Congo, Mozambique, and Ethiopia, generate and report on less than 10.0 per cent of the expected (96) water statistics variables.

Only 14 countries publish an identifiable national water statistics product, including Uganda, Egypt, Kenya, Ghana, and Senegal. The recency and frequency of standalone water statistics publications in these countries vary significantly, with four countries (Botswana, Rwanda, Zambia, and Namibia) dating back a decade and six countries recording only one publication.

FIGURE 5.3: BREADTH OF WATER STATISTICS GENERATED AND SHARED BY AFRICAN COUNTRY



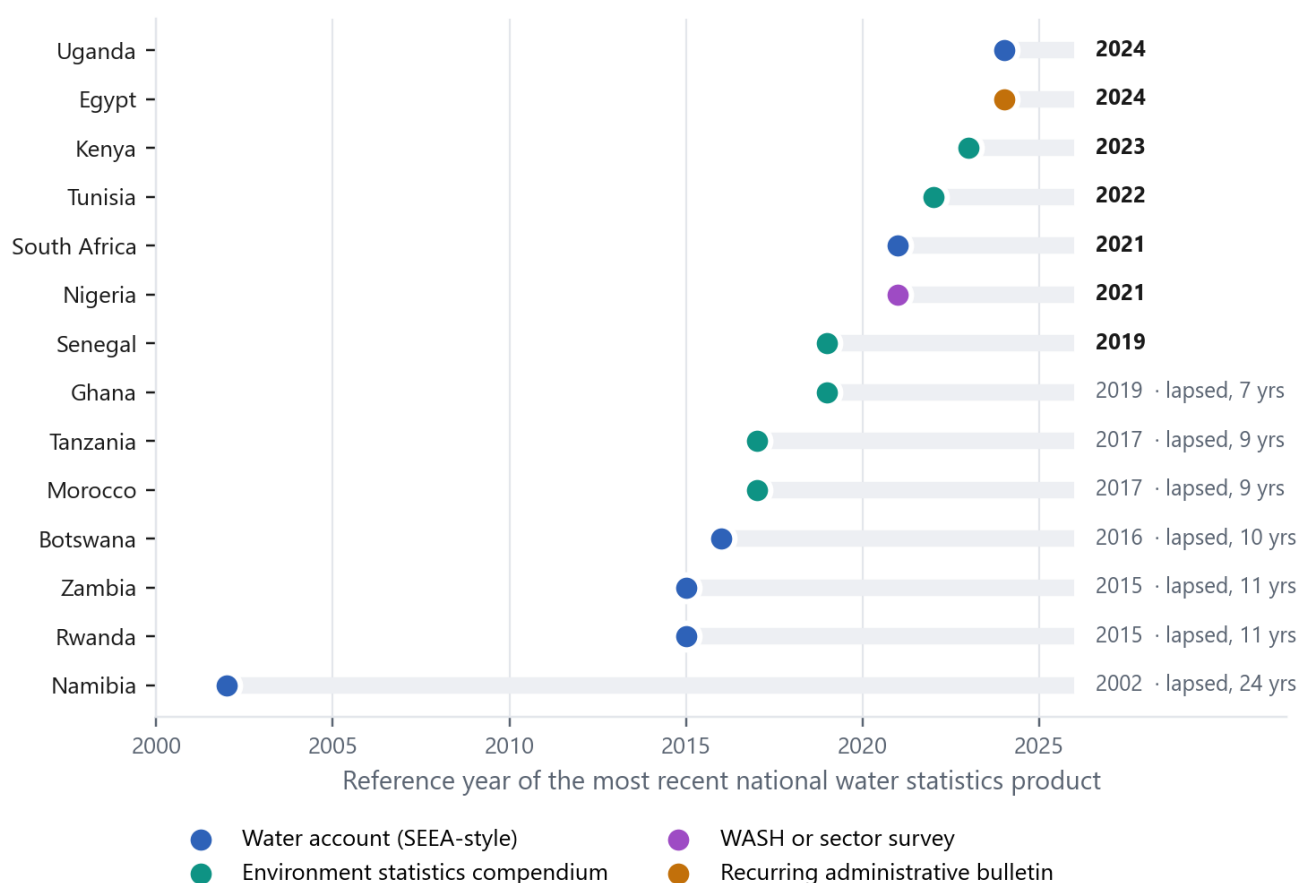
Only 14 countries publish an identifiable national water statistics product, including Uganda, Egypt, Kenya, Ghana, and Senegal. The recency and frequency of standalone water statistics publications in these countries vary significantly, with four countries (Botswana, Rwanda, Zambia, and Namibia) dating back a decade and six countries recording only one publication.

TABLE 3: NATIONAL WATER STATISTICS PRODUCTS PUBLISHED BY AFRICAN NSOs AND MDAs

Country and producer	Most recent national water product	Reference year	Status
Uganda — Bureau of Statistics	Uganda Water Accounts Report (SEEA-Water)	2024	Annual since 2022
Egypt — CAPMAS	Annual Bulletin of Water Purification and Sanitation Statistics	2023/24	Annual
Kenya — National Bureau of Statistics	Compendium of Environment Statistics	2023	First edition
Tunisia — Institut National de la Statistique	Statistical yearbook, water chapter	2022	Annual chapter
South Africa — Statistics South Africa	Natural Capital Series: sub-national water resource accounts	2015–2021	Irregular since 2000
Nigeria — NBS with Ministry of Water Resources	WASH National Outcome Routine Mapping	2021	Roughly biennial
Senegal — ANSD	Situation économique et sociale, water chapter	2019	Annual chapter
Ghana — Statistical Service with EPA	National Compendium of Environment Statistics	2019	One edition only
Tanzania — National Bureau of Statistics	National Environment Statistics Report	2017	Lapsed
Morocco — Haut-Commissariat au Plan	Statistiques environnementales au Maroc	2017	Lapsed
Botswana — Statistics Botswana with Dept. of Water Affairs	Botswana Water Accounting Report	2015/16	Lapsed
Rwanda — National Institute of Statistics	Natural Capital Accounts — Water	2015	Pilot, not continued
Zambia — ZamStats with Ministry of Water Development	SEEA-Water pilot application	2015	Pilot, not institutionalised
Namibia — Ministry of Agriculture, Water and Forestry	Natural resource accounts — water	2002	Lapsed

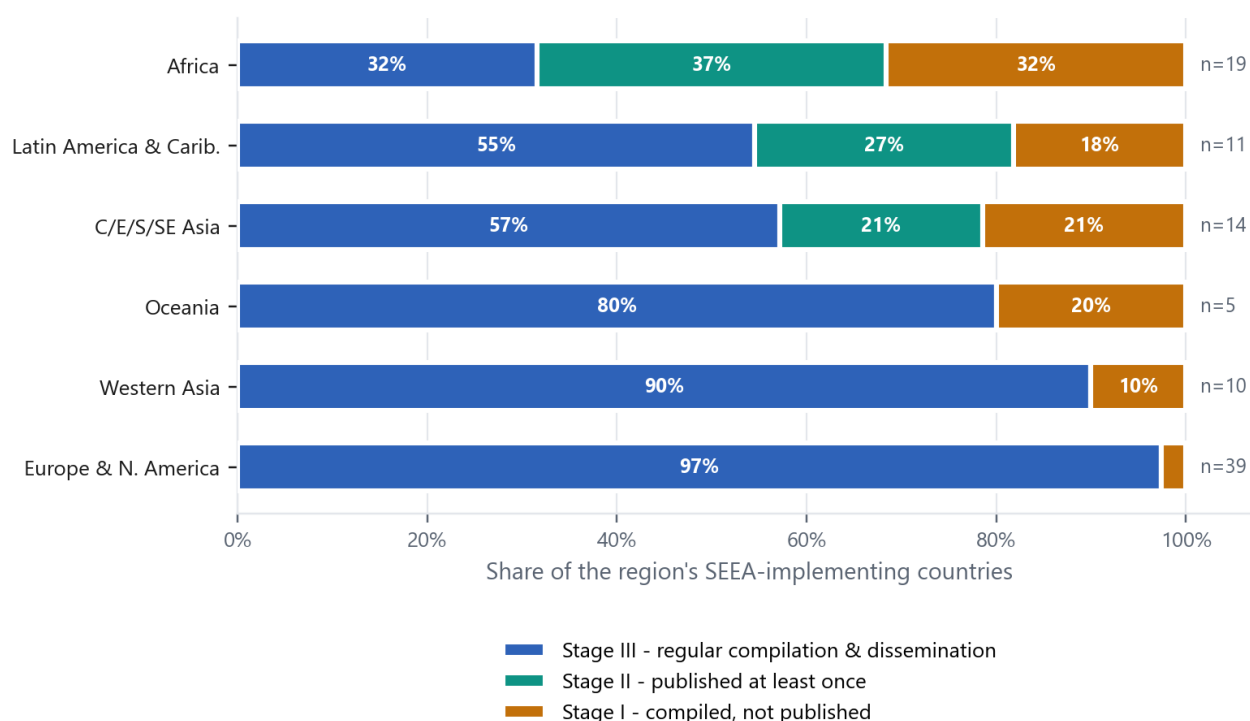
Only seven of the 14 countries with a national water statistics product are still producing, while the other seven published once or for a few years and stopped. Of the six countries that have compiled a water account, four have discontinued it: Namibia's last was produced 24 years ago, Rwanda's and Zambia's 11 years ago, and Botswana's 10 years ago. Uganda is the only country combining a water account with an annual production cycle.

FIGURE 5.4: NATIONAL WATER STATISTICS PRODUCTS AND WHEN THEY LAST APPEARED



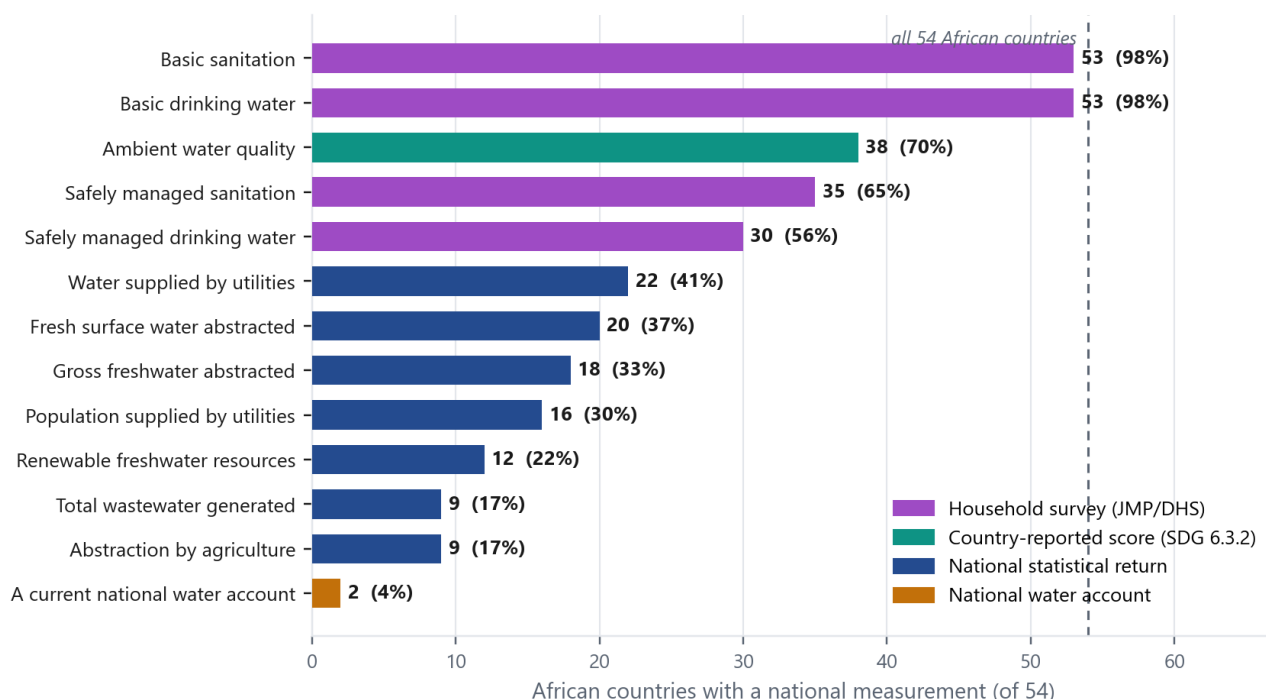
Of the 98 countries compiling the System of Environmental-Economic Accounting globally, only 19 are African, and just six of those have reached Stage III, meaning regular scheduled compilation. That is 32 per cent of African implementers, compared with 95 per cent in Europe and Northern America. Water accounts are the sixth most compiled module worldwide, produced by 39 countries, compared with 68 for energy accounts.

FIGURE 5.5: STAGE OF SEEA IMPLEMENTATION, BY REGION, 2025 GLOBAL ASSESSMENT



Water statistics carried by household surveys reach almost every African country, with basic drinking water and basic sanitation available for 53 of the 54. Those requiring a national statistical return fall away sharply, from 22 countries for water supplied by utilities to 12 for renewable freshwater resources and nine each for agricultural abstraction and wastewater generated. Only two countries maintain a current national water account.

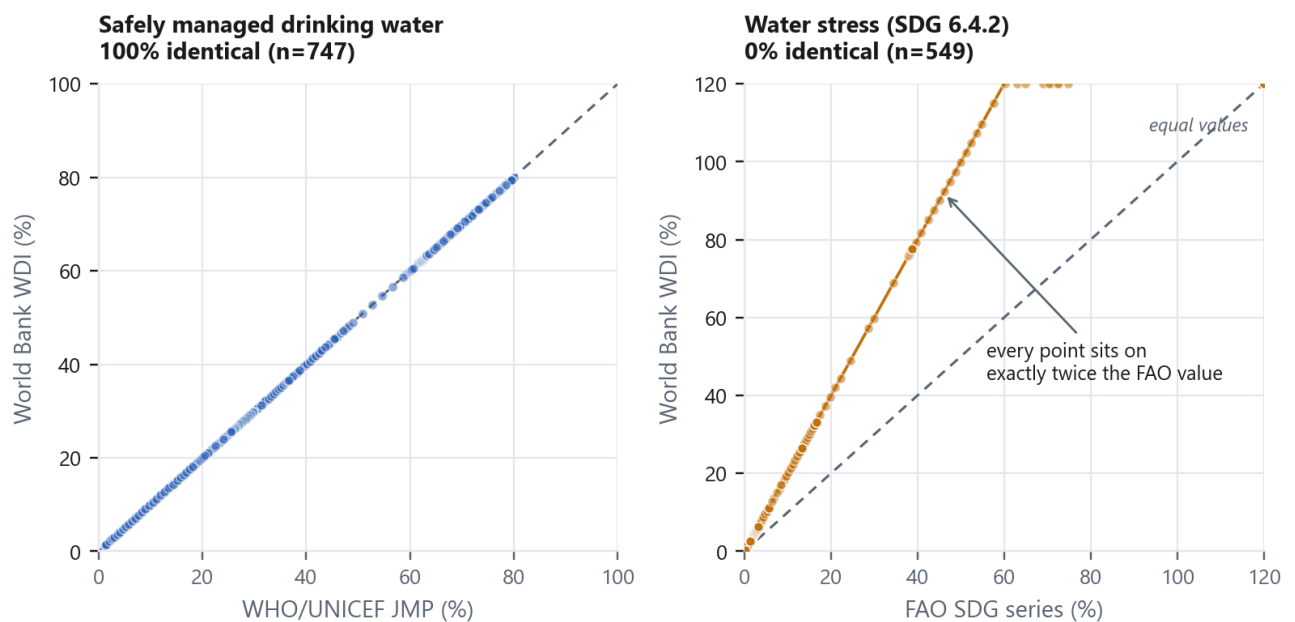
FIGURE 5.6: NATIONAL MEASUREMENT CAPABILITY BY STATISTIC AND INSTRUMENT



5.2 The International Substitutes and their Inconsistencies

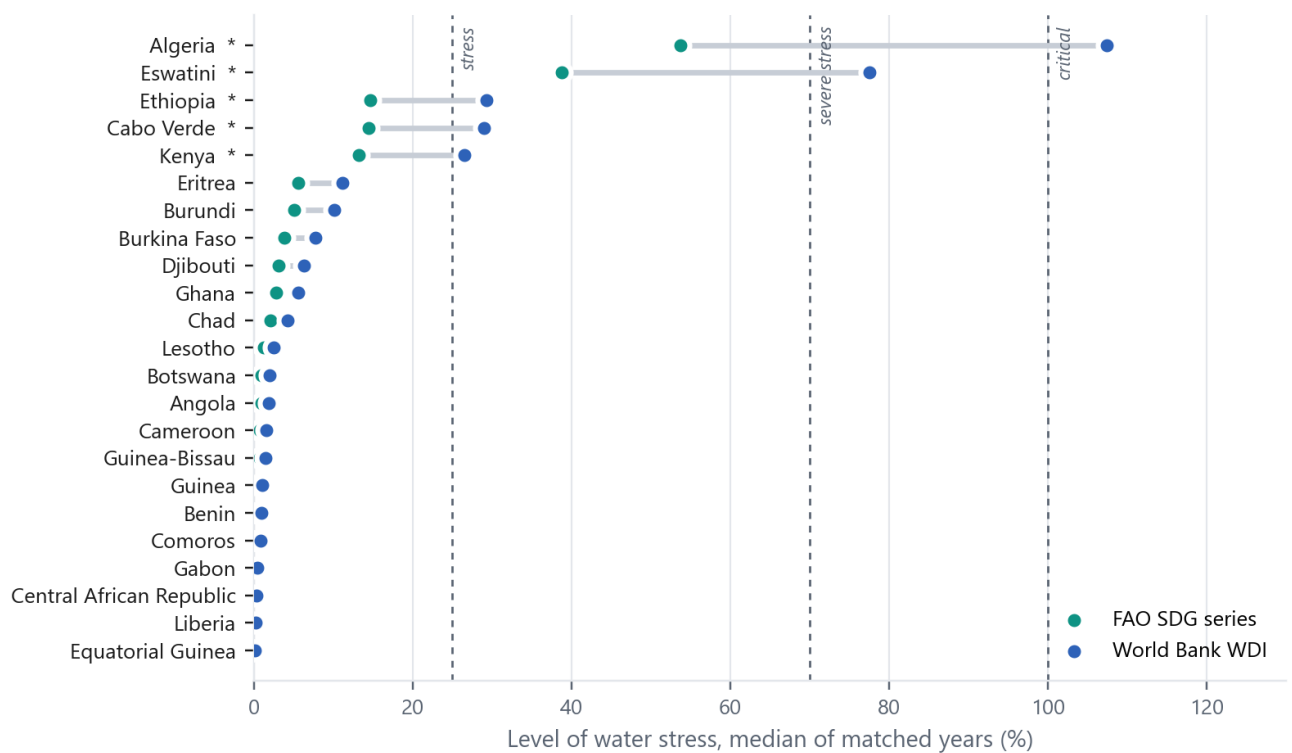
Across 4,250 matched country-year observations of drinking water and sanitation, the WHO/UNICEF Joint Monitoring Programme and the World Development Indicators are 100 per cent identical, making two apparently independent databases one source counted twice. Where the two sources are genuinely independent, not one of 549 matched observations of water stress agrees.

FIGURE 5.7: AGREEMENT BETWEEN PAIRED CUSTODIAN SERIES, AFRICAN COUNTRIES



In 87 per cent of 549 matched country-year observations across 24 African countries, the World Bank water stress value is exactly twice the FAO value, because the two series apply the environmental flow deduction in SDG 6.4.2 differently without stating which convention is used. For five countries, the choice of series changes the classification, with Algeria moving from critical at 107 per cent to moderate at 54 per cent and Eswatini from severe at 78 per cent to moderate at 39 per cent.

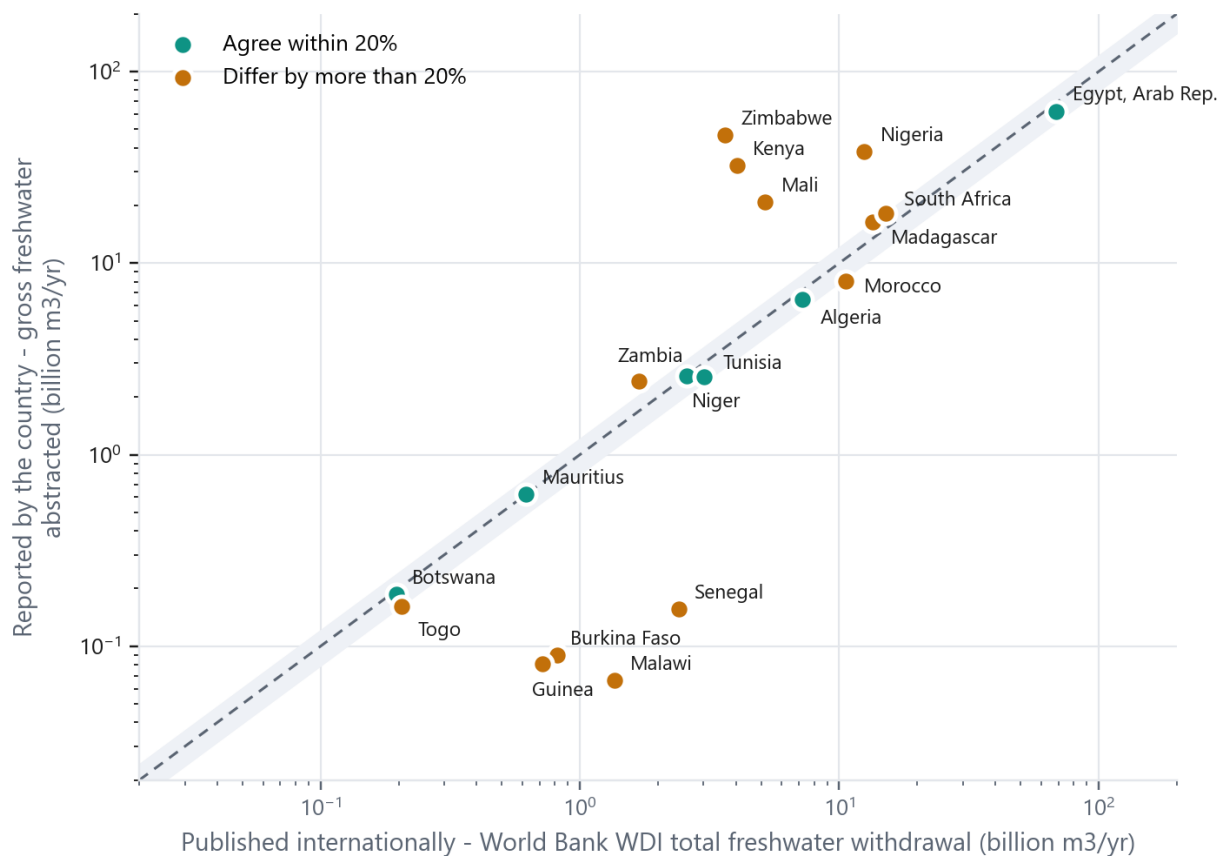
FIGURE 5.8: LEVEL OF WATER STRESS UNDER TWO OFFICIAL SERIES, AFRICAN COUNTRIES



* marks a country that falls in a different stress class depending on which official series is used

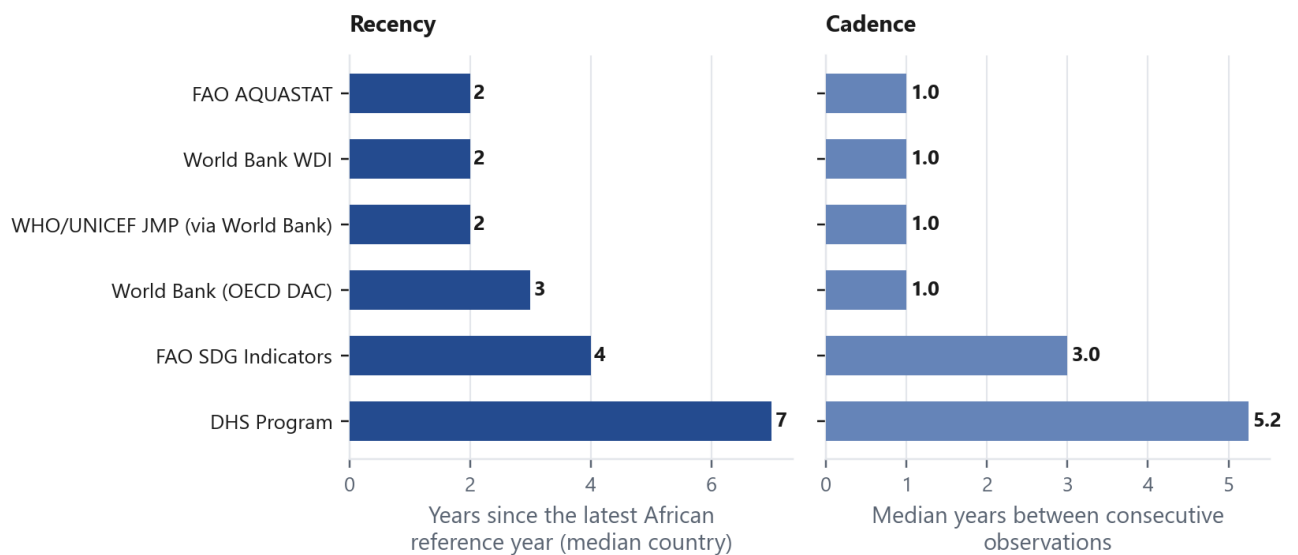
Across 232 matched country-year observations in 19 African countries, the median difference between nationally reported freshwater abstraction and the internationally published figure is 25 per cent, and 54 per cent of country-years differ by more than 20 per cent. The divergence runs both ways, with Malawi, Senegal, Guinea and Burkina Faso reporting below the international figure and Zimbabwe, Kenya, Mali and Nigeria above it. No reconciliation between the two is published.

FIGURE 5.9: NATIONAL REPORTED ABSTRACTION AGAINST INTERNATIONALLY PUBLISHED WITHDRAWAL



Three international series carry a value for essentially every African country for every year, with a median gap of one year between observations. That regularity is a property of the modelling rather than of measurement, since the national returns underlying them arrive far less often and, for 19 countries, have never arrived. The Demographic and Health Survey, a genuinely periodic instrument, shows a median interval of 5.25 years and a median latest observation of 2019.

FIGURE 5.10: RECENCY AND CADENCE OF THE INTERNATIONAL SERIES, AFRICAN COUNTRIES



5.3 What Mature National Water Statistics Systems Produce

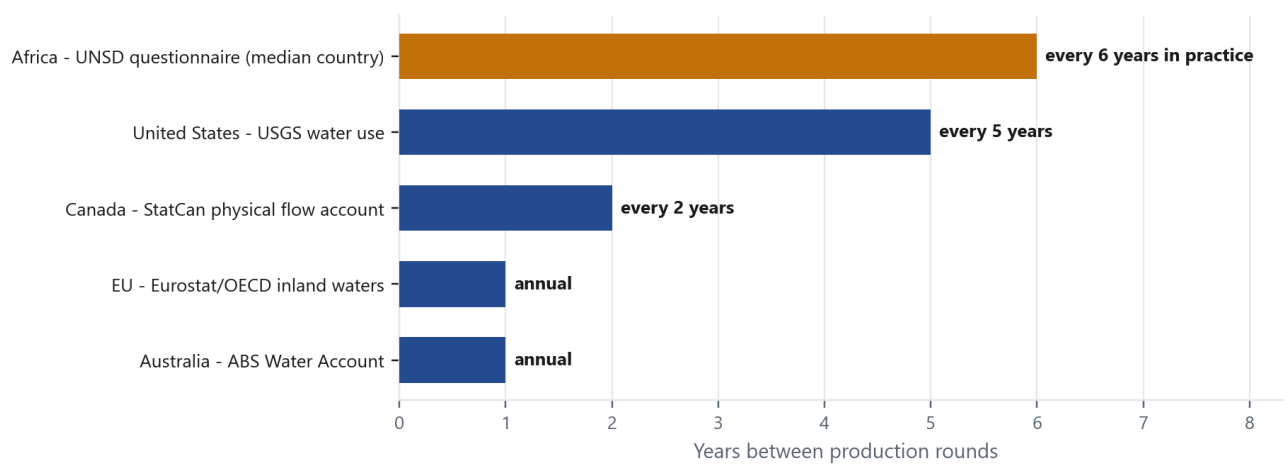
Four national systems publish water statistics as official statistics on a fixed cycle: Australia annually, the European Union annually since 1988, Canada every two years, and the United States every five years since 1950. Australia's 2023-24 account was published in December 2025, under six months after the reference period closed. None is uniformly complete, as the European collection is voluntary and leaves acknowledged data gaps.

TABLE 4: NATIONAL WATER STATISTICS PRODUCTION IN SELECTED MATURE SYSTEMS

System and producer	What is produced	Standard	Cycle and lag
Australia — Australian Bureau of Statistics, Water Account Australia	Physical supply and use of water by industry and households; distributed water volumes; expenditure and average prices	SEEA-Water	Annual; 2023–24 reference year published December 2025
European Union — national statistical institutes with Eurostat, Joint OECD/Eurostat Questionnaire on Inland Waters	Freshwater resources, abstraction, use by supply category and activity, population connected to treatment, sewage sludge, wastewater discharge	SEEA-aligned; framed by the Water Framework Directive	Annual collection, established since 1988; reporting voluntary, which leaves acknowledged gaps
Canada — Statistics Canada, Physical Flow Account for Water Use	Water use by industry, government and households within the Canadian System of Environmental-Economic Accounts	SEEA Central Framework	Every two years
United States — US Geological Survey, Estimated Use of Water in the United States	Withdrawals and consumptive use by source, sector and county	National programme methodology	Every five years since 1950; county-level detail

Four features distinguish these systems, and none is primarily a matter of wealth. Each has a named producer with a standing mandate and a recurring budget line, publishes on a fixed and known cycle, compiles within an accounting framework in which supply must equal use plus losses, and integrates water with the national accounts.

FIGURE 5.11: PRODUCTION CYCLE FOR NATIONAL WATER STATISTICS, SELECTED SYSTEMS



The full Joint OECD/Eurostat Questionnaire on Inland Waters is organised into eight tables and a summary water use balance. Its first table alone requests 11 resource variables, of which three, aquifer recharge, groundwater available for annual abstraction and freshwater resources available 95 per cent of the time, are not requested of African countries at all. The nine components together form a target specification that an African country can adopt and populate incrementally.

TABLE 5: VARIABLES COLLECTED BY THE FULL JOINT OECD/EUROSTAT QUESTIONNAIRE ON INLAND WATERS

JQ-IW table	Variables collected
1. Renewable freshwater resources	Precipitation; actual evapotranspiration; internal flow; actual external inflow; total actual outflow; outflow to the sea; outflow to neighbouring territories; total renewable freshwater resources; aquifer recharge; groundwater available for annual abstraction; freshwater resources available 95 per cent of the time
2. Annual freshwater abstraction by source and sector	Fresh surface water; fresh groundwater; gross abstraction (withdrawal); abstraction for public water supply, irrigation, aquaculture and cooling; water returned without use; net abstraction
3. Water made available for use	Gross abstraction; supply to public water supply, irrigation, aquaculture and cooling; non-freshwater sources; desalinated water; reused water; imports; exports; water losses
4. Water use by supply category and sector	Water use from public water supply, self-supply and other supply; cooling water; use by economic sector and by households
5. Population connected to wastewater treatment	Resident population; population connected to collecting systems; connected to urban wastewater treatment by primary, secondary and tertiary level; other treatment; independent treatment
6. Treatment capacity of wastewater treatment plants	Capacity in BOD5 terms by treatment level, including capacity for nitrogen removal and phosphorus removal
7. Sewage sludge production and disposal	Sludge produced in dry substance by plant type, and the disposal route taken
8. Generation and discharge of wastewater	Urban and industrial process wastewater generated; effluents of urban wastewater treatment plants; wastewater discharge; chemical oxygen demand load in the discharge
Summary: water use balance	A reconciliation of resources, abstraction, supply, use and discharge, used as an internal consistency check on the whole return

A national water account adds an economic layer that neither questionnaire carries. The Australian Bureau of Statistics publishes 14 data tables covering physical supply and use for the nation and its eight states and territories, then reports monetary supply and use, expenditure, prices and water productivity. The United States Geological Survey reports withdrawals for eight use categories and, unusually, consumptive use alongside withdrawal, at state level since 1950 and county level since 1985.

TABLE 6: Value Addition of a Full National Water Account

Element	Australia: ABS Water Account	United States: USGS water use
Published outputs	14 data tables: physical supply and use for the nation and each of 8 states and territories, monetary supply and use, and an industry highlight for water supply, sewerage and drainage	Circular series with supporting county-level datasets
Physical measures	Self-extracted water by source (surface water, groundwater, seawater); distributed water supplied; water reuse; in-stream use for hydroelectricity; return flows to the environment	Withdrawals by source, separating surface water from groundwater and fresh from saline; consumptive use reported alongside withdrawal.
Use categories	Industry divisions under the ANZSIC classification, plus households	8 categories: public supply, domestic self-supplied, irrigation, livestock, aquaculture, industrial, mining, thermoelectric power
Economic measures	Expenditure on distributed water; average prices paid by industry and by households	Not reported
Derived indicators	Water productivity (gross value added per megalitre); water intensity (megalitres per million dollars of gross value added)	Not reported
Geographic detail	National, state and territory	State level since 1950; county level since 1985
Link to national accounts	Water use classified by ANZSIC division, aligning directly with the national accounts	Not integrated with the national accounts

The simplified questionnaire sent to African countries covers seven of 20 measurement domains in full and four partially, against 15 of 20 for the full OECD/Eurostat questionnaire. Four resource and discharge variables are absent from the simplified form entirely, including groundwater available for annual abstraction, the one variable that determines whether an abstraction license is sustainable.

Household access and ambient water quality sit outside all three instruments. Still, they are collected separately, and 42 of 43 EU and OECD countries reported an ambient water quality score, compared with 38 of the 54 African countries.

FIGURE 5.12: WHAT EACH INSTRUMENT COLLECTS, BY MEASUREMENT DOMAIN

	Simplified questionnaire sent to African countries	Full OECD/Eurostat questionnaire	National water account (ABS Australia model)
Precipitation, evapotranspiration, internal flow	full	full	partial
Transboundary inflow and outflow	full	full	–
Aquifer recharge	–	full	partial
Groundwater available for annual abstraction	–	full	partial
Freshwater resources available 95% of the time	–	full	–
Abstraction by source (surface, ground)	full	full	full
Abstraction by economic sector	full	full	full
Water returned without use / net abstraction	partial	full	full
Desalination, reuse, imports and exports	full	full	full
Distribution losses	full	full	full
Water made available for use (full balance)	partial	full	full
Household access to drinking water and sanitation	elsewhere	elsewhere	elsewhere
Ambient water quality of rivers, lakes, aquifers	elsewhere	elsewhere	elsewhere
Population connected to treatment	full	full	–
Treatment capacity (BOD, nitrogen, phosphorus)	partial	full	–
Sewage sludge production and disposal route	partial	full	–
Wastewater discharge and pollutant load (COD)	–	full	–
Monetary supply and use of water	–	–	full
Water prices paid by industry and households	–	–	full
Water productivity and intensity (GVA per ML)	–	–	full

collected
 not collected
 partial
 collected through a separate instrument

Four supporting arrangements convert an indicator list into a production system, and each is documentation rather than infrastructure. The Joint Questionnaire's manual sets out estimation methods sector by sector, carries a decision tree for each of its eight tables, attaches a quality code to every reported value, and specifies long-term averages over at least 30 consecutive years. All four are published and freely available and require no new measurement capacity.

TABLE 7: THE SUPPORTING APPARATUS THAT ACCOMPANIES THE INDICATOR SET

Supporting arrangement	What it provides	Why it matters for African countries
Documented estimation methodologies	Sector-by-sector accepted methods for collecting, calculating and estimating each variable, covering public water supply, agricultural use, manufacturing use and cooling water.	Treats estimation as a legitimate documented method where metering is incomplete, rather than as a failure to measure
Decision trees	One route per table telling the compiler what to do given whichever source data exist	A country with only partial administrative coverage still arrives at a defensible figure.
Data quality flags	A quality code attached to every reported value	Makes measured, modelled and estimated values distinguishable to the user; the cheapest transparency measure available, and the one whose absence makes the international series hardest to interpret.
Defined reference periods and rounding rules	Long-term averages specified as at least 30 consecutive years, with reference periods stated explicitly.	Makes values comparable across countries and over time

6. IMPLICATIONS FOR PLANNING AND DECISION-MAKING

African governments are, for the most part, planning water investments on numbers that their own statistical systems did not produce, cannot verify, and, in several cases, contradict.

Investment appraisal depends on the resource base, current abstraction and projected demand. Renewable freshwater resources are compiled nationally by 12 African countries, abstraction by 18, and sectoral abstraction by fewer than 10. For the rest, the appraisal relies on modelled estimates that differ from national figures by a median of a quarter.

Allocating water between sectors, or setting abstraction charges, requires sectoral abstraction, which nine countries compile. Without it, a regulator cannot show that an allocation is efficient or equitable, nor can it measure sustainable groundwater yield, which the questionnaire does not request.

Pollution control requires a measure of the quantity being controlled, and six countries compile data on untreated discharge. Thirty-eight have returned an ambient quality score, but it is computed only over monitored water bodies, so a sparse network can report good quality without covering the rivers receiving the discharge.

Capability does exist in one domain. Household access is measured for 53 of the 54 countries because the instrument is the household survey, which national statistical offices already run. The constraint is therefore not a general incapacity but rather the domains that require a hydrological network, an administrative return, or an account.

Where a country's water performance is described entirely by external figures, its government responds to an account it did not compile. Where two such accounts disagree, it has no basis on which to adjudicate. Country-led interpretation of a country's own evidence is not possible without country-produced evidence.

Because no African country compiles full water accounts, water is invisible to fiscal and investment decisions. It competes for budget against sectors whose returns are quantified in conventional national-accounts terms, without an equivalent quantification of its own.

7. OPTIONS FOR FILLING THE GAP

Closing the gap requires building national production capability, not procuring better estimates. Five lines of action follow directly from the diagnosis.

7.1. Establish a Standing National Water Statistics Function

The most consequential change is institutional rather than technical: assigning the water statistical block to a named unit with a recurring budget and a published production calendar, jointly staffed by the national statistical office and the water ministry. Table 3 shows why this comes first, since four countries built water accounts and lost them when the supporting project closed.

7.2. Restore What Has Already Been Built

For Namibia, Botswana, Rwanda and Zambia, the task is to revive a discontinued account rather than build one. The methodology exists and has been applied to national data, so re-establishing these series is cheaper than a first compilation. It would take the number of African countries with current water accounts from two to six.

7.3. Start from the Administrative Data Already Held

The variables African countries do report are those already generated by administration, such as utility supply volumes and meteorological records. Utility billing systems, abstraction license registers, irrigation scheme records, treatment plant logs and discharge permits hold much of what the block requires. The task is to secure routine access to them and to the methods for converting them into national aggregates.

7.4. Adopt the Accounting Framework, in Stages

Table 5 and Figure 13 give the staged specification. Stage one is to complete the domains already on the simplified questionnaire. Stage two adds the four variables included in the full international instrument. Still, the simplified one does not include aquifer recharge, groundwater available for annual abstraction, freshwater resources available 95 per cent of the time, and the pollutant load in wastewater discharge—which together make sustainable abstraction limits calculable. Stage three is the economic layer: monetary supply and use, water prices, and water productivity by industry, which is what places water in front of a finance ministry.

Table 5 and Figure 13 give the staged specification. Stage one completes the domains already on the questionnaire; stage two adds the four variables the full instrument carries, which the simplified one does not, and together they make sustainable abstraction limits calculable; stage three adds the economic layer. A physical supply-and-use table, compiled annually, would place a country ahead of most of the continent.

7.5. Use International and Satellite Sources as Inputs, Under National Control

Nothing here argues for dispensing with international or Earth observation data, which is valuable and, in some domains, irreplaceable. The argument is about who controls the compilation. These sources should be entered into national water statistics as documented inputs to a nationally owned account, with the statistical office determining and publishing the methodology.

8. COMMITMENTS AND ACTIONS

8.1. Roles for the African Centre for Statistics

The African Centre for Statistics should maintain a continental baseline of national water statistics production so that progress is measurable, issue compilation guidance for a minimum national water statistics set prioritising the least-produced variables, convene a continental working group under StatCom-Africa, and lead the reconciliation dialogue with international custodians.

8.2. Roles for Member States

Member States should assign the water statistical block to a named institution with a standing mandate and a recurring budget line, place it in the national statistical calendar, complete the international questionnaire in every round, and establish the legal basis for the statistical office to obtain water administrative data as a matter of routine.

8.3. Roles for National Statistical Offices and MDAs

National statistical offices should lead compilation and own the methodology. Water ministries and hydrological services should maintain resource monitoring and share abstraction licence data; utilities and regulators should report supply, losses and connections on a standard schedule; irrigation agencies should report scheme withdrawals. A formal inter-agency protocol is what makes this work in mature systems.

8.4. Coordination with International Custodians

International custodians should be asked for three things: a provenance flag on every published country value showing whether it was nationally reported, carried forward or modelled; reconciliation notes where a custodian figure differs materially from the country's own; and resolution of the water stress discrepancy, with both series stating the environmental flow convention applied.

9. CONCLUSION AND WAY FORWARD

This brief set out to establish what water statistics African countries produce themselves, whether the international substitutes can carry the weight placed on them, and what a working national system looks like. The findings are consistent and, taken together, they describe a continent planning a critical resource with borrowed numbers.

Nineteen African countries have never reported a national water statistic to the international questionnaire, and only ten did so in the latest round. No statistic on that questionnaire is compiled by even half the continent, and renewable freshwater resources, the most cited figure of all, by twelve countries. Six African countries have institutionalised regular environmental-economic accounting, against thirty-eight in Europe and Northern America.

The weakness is not uniform, and the exception is instructive. Household access is measured for almost every African country because the household survey that produces it is already run nationally. The pattern therefore follows the instrument rather than the subject: where a routine national instrument exists, the statistics exist; where the domain needs a hydrological network, a statistical return, or an account, they largely do not.

Of the fourteen African countries with an identifiable national water statistics product, only seven are still producing, and four of the six that once compiled a water account have discontinued it. The problem is therefore not only that capability is missing but that it has repeatedly been created and allowed to lapse, because it was funded as a project rather than established as a function.

The international series cannot be treated as substitutes. Where two custodian series appear to corroborate one another, they are frequently the same source repeated, as 4,250 identical observations show; where they are genuinely independent, they diverge by a fixed factor of two, moving five countries across classification thresholds. National and international figures for the same quantity differ by a median of a quarter, with no published reconciliation.

The way forward is to rebuild the national production capability those sources were only ever intended to supplement. The requirements are institutional before they are technical, and the specification is already written: eight questionnaire tables, a defined set of estimation methods, quality flags and reference periods, and an accounting framework onto which the economic layer can later be added.

Water is among the largest categories of public capital expenditure African countries will undertake over the coming decades, and among the most exposed to climate variability. The statistical basis for those decisions rests on figures the countries did not produce, cannot verify, and in a substantial number of cases contradict. Correcting that is a small expenditure against the decisions it would inform.

10. DATA SOURCES AND REFERENCES

Primary evidence base

- United Nations Statistics Division and United Nations Environment Programme, Questionnaire on Environment Statistics, water section: validated country files, all African returns, collection cycles 2004–2024. https://unstats.un.org/unsd/envstats/country_files
- United Nations Committee of Experts on Environmental-Economic Accounting, Results of the 2025 Global Assessment of Environmental-Economic Accounting and Supporting Statistics, background document to the fifty-seventh session of the Statistical Commission, 2026.
- FAO AQUASTAT, WHO/UNICEF Joint Monitoring Programme, World Bank World Development Indicators, FAO SDG indicator series, OECD Development Assistance Committee statistics and the DHS Programme, as compiled in the water statistics dataset accompanying this brief (29,230 African records).
- United Nations Statistics Division and FAO, SDG Indicator Metadata 6.4.2 — Level of water stress. <https://unstats.un.org/sdgs/metadata/files/Metadata-06-04-02.pdf>

National publications reviewed (Table 1)

- Uganda Bureau of Statistics, The 2024 Uganda Water Accounts Report; and earlier editions for 2022 and 2021–22.
- Central Agency for Public Mobilization and Statistics (Egypt), Annual Bulletin for Water Purification and Sanitation Statistics 2023/2024.
- Statistics South Africa, Natural Capital Series 4: Sub-national Water Resource Accounts, 2015 to 2021, discussion document D0401.4, March 2024.
- Kenya National Bureau of Statistics, Compendium of Environment Statistics 2023.
- Institut National de la Statistique (Tunisia), Annuaire statistique de la Tunisie 2018–2022.
- Agence Nationale de la Statistique et de la Démographie (Sénégal), Situation économique et sociale, chapitre « Eau et assainissement ».
- National Bureau of Statistics (Nigeria) and Federal Ministry of Water Resources, Water, Sanitation and Hygiene National Outcome Routine Mapping 2021.
- Ghana Statistical Service and Environmental Protection Agency, National Compendium of Environment Statistics 2019.
- National Bureau of Statistics (United Republic of Tanzania), National Environment Statistics Report 2017.
- Haut-Commissariat au Plan (Morocco), Statistiques environnementales au Maroc.
- Statistics Botswana and Department of Water Affairs, Botswana Water Accounting Report 2015/16.
- National Institute of Statistics of Rwanda, Rwanda Natural Capital Accounts — Water.
- Ministry of Agriculture, Water and Forestry (Namibia), Technical Summary of Water Accounts.

Benchmark systems

- OECD and Eurostat, Data Collection Manual for the OECD/Eurostat Joint Questionnaire on Inland Waters, version 3.0, September 2014 — source for Table 5, the variable definitions, the decision trees, the sector-by-sector estimation methodologies and the data quality flags.
- Australian Bureau of Statistics, Water Account Australia, 2023–24, released 11 December 2025 — source for the fourteen published data tables, the ANZSIC industry classification, and the monetary and productivity measures.
- Eurostat, Water statistics, Statistics Explained — source for the collection instrument and for the statement that reporting is voluntary and leaves considerable data gaps.
- Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy (Water Framework Directive), Article 8 and Annex V — source for the monitoring and classification obligation and the six-year river basin management planning cycle.
- UNEP GEMS/Water and UN-Water, Progress on Ambient Water Quality: Mid-term Status of SDG Indicator 6.3.2, 2024 — source for the country reporting annex and for the caveat on national coverage of monitoring programmes.
- Statistics Canada, Physical Flow Account for Water Use, Canadian System of Environmental-Economic Accounts.
- United States Geological Survey, Estimated Use of Water in the United States, Circular series — source for the eight use categories, the fresh/saline and surface/groundwater splits, and the consumptive-use measure.

Frameworks

- United Nations (2012). System of Environmental-Economic Accounting for Water (SEEA-Water). New York: United Nations Statistics Division.
- United Nations (2015). Transforming our world: the 2030 Agenda for Sustainable Development, A/RES/70/1.
- African Union and AMCOW (2003). The Africa Water Vision for 2025.
- AMCOW (2021). Continental Africa Water Investment Programme 2021–2030.