A FRAMEWORK FOR MONITORING AND REPORTING WATER SUPPLY GOALS AND TARGETS (2016-2030)

Moving from the Millennium Goals (MDGs) to Sustainable Development Goals (SDGs)

Report to the
WATER RESEARCH COMMISSION

by

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This report forms part of a series of four reports. The other reports are:

- Responding to New National and International Water Supply and Sanitation Monitoring and Evaluation Obligations (WRC Report No. 2588/1/18)
- A Framework for Monitoring and Reporting Sanitation Goals and Targets (2016-2030) (WRC Report No. 2588/3/18)
- A Framework for Monitoring and Reporting Hygiene Goals and Targets (2016-2030) (WRC Report No. 2588/4/18).

EXECUTIVE SUMMARY

The globe is moving into a new era of monitoring and reporting. After 20 years of focussing on monitoring and reporting the Millennium Development Goals (MDGs), the globe has shifted to monitoring the **sustainability** of development interventions.

In September 2015 United Nations member states adopted the 2030 Agenda for Sustainable Development (2030 Agenda). Progress with implementation of the 2030 Agenda will be monitored and reported by 17 interdependent thematic Sustainable Development Goals (SDGs), which have 169 specific targets and are measured through 232 indicators.

Implementation of the 2030 Agenda has begun, with the first round of reporting of the SDGs already passed. The clock is ticking!

Noteworthy of the SDGs is the formal adoption of **Sustainable Development Goal (SDG) 6** of ensuring *availability and sustainable management of water and sanitation for all*. This water SDG represented a monumental achievement for the water community.

SDG 6 contains eight targets. Three of these targets are i) a water supply, ii) a sanitation and iii) a hygiene (WASH) target, each monitored by a single outcome indicator.

This report focusses specifically on the water supply target and indicator of SDG 6. The report provides an overview of how the water supply target and indicator of SDG 6 should be measured, a 2016 baseline for South Africa for the water supply SDG indicator and recommendations on how South Africa can progressively improve its water supply monitoring and reporting in future.

The report also provides an overview and baseline (where possible) for the drinking water supply targets and indicators of SDG 1: End Poverty; SDG 4: Quality Education and SDG 11: Sustainable Cities and Communities.

This is the first in a series of three framework reports, namely:

a) **Framework 1 for Monitoring and Reporting Water Supply Services in South African (2016-2030)** (this framework) – focused specifically on monitoring and reporting *SDG Target 6.1*
b) **Framework 2 for Monitoring and Reporting Sanitation Services in South African (2016-2030)** – focused on monitoring and reporting the sanitation component of *Target 6.2 and Target 6.3* (WRC Report No. K2588/3)
c) **Framework 3 for Monitoring and Reporting Hygiene Services in South African (2016-2030)** – focused on monitoring and reporting the hygiene component of *Target 6.2* (WRC Report No. K2588/4)

The structure of this report includes 6 Sections:

- **Section 1:** Overview of the SGS
- **Section 2:** Overview of the water SDGs
- **Section 3:** Understanding of the water supply service SDGs
- **Section 4:** What can South Africa monitor and report for water supply services
- **Section 5:** What should South Africa monitor and report for water supply services
- **Section 6:** Summary of the 2016 baseline for SDG indicators in South Africa

The baseline provided for water supply in South Africa utilises data collected by StatsSA in the General Households Survey (GHS) of 2016.

After the 2011 Census data, the GHS survey, which is conducted annually, is the most accurate source of data on households in South Africa. The GHS uses a multi-stage stratified sample in the survey, drawn using probability proportional to size principles. The GHS generally includes sampling of approximately 30 000 dwelling units, which StatsSA then extrapolates to a nationally representative data set.

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LIST OF ACRONYMS

AMCOW	African Ministers' Council on Water
BDS	Blue Drop System
DoBE	Department of Basic Education
DoH	Department of Health
DoW	Department of Women
DPLG	Department of Provincial and Local Government
DRDLR	Department of Rural Development and Land Reform
DWA	Department of Water Affairs (now DWS)
DWAF	Department of Water Affairs and Forestry (now DWS)
DWS	Department of Water and Sanitation
EMIS	Education Management Information System
GDS	Green Drop System
GEMI	Integrated Monitoring Initiative
GHS	General Household Survey
GLAAS	Global Analysis and Assessment of Sanitation and Drinking-Water
JMP	Joint Monitoring Programme
MDGs	Millennium Development Goals
MTSF	Medium-term Strategic Framework
NDP	National Development Plan
NDS	No Drop System
RPMS	Regulatory Performance Measurement System
RSA	Republic of South Africa
SALGA	South African Local Government Agency
SDGs	Sustainable Development Goals
SFWS	Strategic Framework for Water Services
SIDA	Swedish International Development Cooperation Agency
StatsSA	Statistics South Africa
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNICEF	United Nations International Children's Education Fund
UNICEF/WES	UNICEF Water, Environment and Sanitation (WES) Program
UNSD	United Nations Statistical Division
USAID	U.S. Agency for International Development
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
World Bank/WSP	World Banks Water and Sanitation Program
WSA	Water Services Authority
WSSCC	Water Supply and Sanitation Collaborative Council

1 THE SUSTAINABEL DEVELOPMENT GOALS (SDGS)

The globe is moving into a new era of monitoring and reporting. After 20 years of focussing on monitoring and reporting the Millennium Development Goals (MDGs), the globe has shifted to monitoring the **sustainability** of development interventions.

In September 2015 United Nations member states adopted the 2030 Agenda for Sustainable Development (2030 Agenda). Progress with implementation of the 2030 Agenda will be monitored and reported by 17 interdependent thematic Sustainable Development Goals (SDGs), which have 169 specific targets and are measured through 232 indicators.

The SDGs, which replaced the Millennium Development Goals, were developed based on the lessons learnt from implementing the MDGs between 1990 and 2015.

Unlike the MDGs, which had top-down prescriptive targets and indicators, the SDGs were developed through stakeholder engagement and consensus, allowing for flexibility in progressively adopting SDG goals, targets and indicators at a national and local level of monitoring and reporting[1].

The SDG are expected to be implemented progressively by countries, with more indicators being monitored and reported as data collection and analysis methods expand and improve.

Implementation of the 2030 Agenda for Sustainable Development has begun, with the first round of reporting of the SDGs already passed. The clock is ticking!

Figure 1: The 17 SDGs[2]

[1] Ps-Eau (2018). The Sustainable Development Goals for Water and Sanitation Services. Interpreting the Targets and Indicators. pS-Eau: Paris, France

[2] Taken from https://en.wikipedia.org/wiki/Sustainable_Development_Goals#/media/File:Sustainable_Development_Goals_chart.svg

2 A WATER SUSTAINABLE DEVELOPMENT GOAL

Noteworthy of the SDGs is the formal adoption of a water goal, namely **SDG 6: ensuring availability and sustainable management of water and sanitation for all**. Goal 6 focusses specifically on water sustainability issues, including ensuring sustainable access to water supply, sanitation and hygiene (WASH) services[3].

The water SDG represented a monumental achievement for the water community. The goal elevated water from a mere target within the MDGs to a specific goal in the SDGs.

SDG 6 contains eight targets: six on outcomes with regard to water and sanitation, and two on the means of implementation of the outcome targets (Figure 2).

These new targets are significantly more ambitious than the MDGs, calling for **universal access for all** and not just merely "halving the backlog" as was the case with the MDGs.

Figure 2: Targets and indicators for SDG 6

Apart from SDG 6, a number of SDGs have water imperatives that need to be addressed to attain the goal. These include water indicators for SDG 1: End poverty, SDG 3: Good health and well-being; SDG 4: Quality Education; SDG 11 Sustainable Cities and Communities and SDG 13: Climate Action (Figure 3).

SDG 1, SDG 4 and SDG 11 have targets and indicators specific to WASH (i.e. Target 1.4; Target 4.a and Target 11.1). It is necessary for the WASH sector of a country to also monitor and report progress with these targets and indicator between 2016 and 2030.

[3] UN, 2015. The 2030 agenda for sustainable development. A/RES/70/1. United Nations General Assembly: New York

Figure 3: Water-related indicators for other SDGs[4]

In order to monitor and report progress towards achieving the SDGs by 2030, the global indicators (i.e. those which applicable to all countries) will be monitored at a number of different levels (global, regional, national).

Unlike the water supply and sanitation MDG targets and indicators which were monitored and reported by a single programme, the WHO and UNCEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation, the intention with monitoring of SDG 6 indicators is that the JMP, the Integrated Monitoring initiative (GEMI) and UN-Water Global Analysis and Assessment for Sanitation and Drinking-Water (GLAAS) would be progressively aligned to ensure a coherent monitoring framework for SDG 6.

Collectively, these institutions are expected to monitor progress towards the entirety of SDG 6[5], with indicators for SDG Target 6.1 and 6.2 monitored and reported by the JMP, indicators for Targets 6.3-6.6 being the responsibility of GEMI and indicators for Targets 6a and 6b the responsibility of GLAAS (Figure 4).

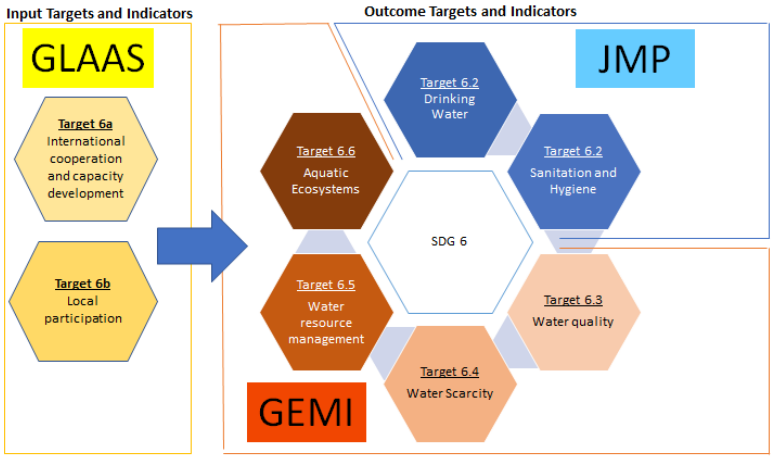


Figure 4: Organization responsible for reporting SDG 6 targets[6]

[4] Adapted from http://www.edf-feph.org/newsroom/news/resolution-disability-inclusive-sustainable-development-goals

[5] UN WATER, 2015. A Compilation of Expert Advice on Water and Sanitation Related Indicators Covering Targets 6.1 to 6.6 and 11.5. [Online]. Available:http://www.pseta.gov.za/index.php/npu-articles/download/165-water/517-a-compilation-of-expert-advice-on-water-and-sanitation-related-indicators

[6] Adapted from UN WATER, 2016b. Integrated Monitoring Guide for SDG 6 Targets and global indicators. U[Online]. Available: http://www.unwater.org/publications/integrated-monitoring-guide-sdg-6/

3 UNDERSTANDING THE WATER SUPPLY SDGS

This report focusses specifically on providing a framework for monitoring and reporting the drinking water supply targets and indicator of the water SDG.

3.1 SDG TARGET 6.1 – WATER SUPPLY

3.1.1 Target 6.1 Explained

Availability of potable drinking water is one of the fundamental requirements for the health and survival of individuals[7]. This indispensable requirement is captured in SDG Target 6.1, which has the aspiration of, **by 2030, achieving *universal and equitable access to safe and affordable drinking water for all*[7].**

Target 6.1 is more ambitious than the MDG Target 7.C of halving, by 2015, the proportion of people without sustainable access to safe drinking water. SDG Target 6.1 focusses not only on achieving access to a drinking water source, but aspires to achieve universal access, equitable access and a safely managed supply to the entire population of a country by 2030.

The criteria for the SDG target can be explained as:

Table 1: Normative interpretation of SDG target 6.1[6]

By 2030, achieve	Normative interpretation
universal	Implies all exposure and settings including households, schools, health-care facilities and workplaces
And **equitable**	Implies progressive reduction and elimination of inequalities among population subgroups
Access	Implies sufficient water to meet domestic needs is reliable available close to home
To safe	Safe drinking water is free from pathogens and elevated levels of toxic chemicals at all times
An affordable	Payment for services does not present a barrier to access to or prevent people from meeting basic human needs
Drinking water	Water used for drinking, cooking, food preparation and personal hygiene
For all	Suitable for use by men, women, girls and boys of all ages, including people with disabilities

3.1.2 Indicator 6.1.1 Explained

To track progress towards achieving SDG Target 6.1, one global indicator has been proposed, ***SDG Indicator 6.1.1 proportion of population using safely managed drinking water services***.

SDG Indicator 6.1.1 is made up of a number of measurement criteria that govern the drinking water supply characteristics that need to be monitored and reported by all countries (Table 2).

Table 2: Normative interpretation of SDG Indicator 6.1.1[7]

Target text	Measurement criteria
Proportion of the population	Requirements measurement of the proportion of the population that has access to safely managed drinking water at all exposure and settings, i.e. safely managed drinking water in the **households**, at **schools**, at **health-care facilities** and in the **workplaces**
Using safely managed drinking water services	Requires measurement of the proportion of the population that are: a) using an **improved drinking water source** b) which is **located on premises** c) **available when needed** and d) **free of faecal (and priority chemical) contamination**

SDG indicator 6.1.1 builds on the MDG indicator "proportion of population using an **improved drinking water source**", adding aspects of:

- **quality** of the water ("safe" = free of contamination),
- **accessibility** of the source ("located on premises") and
- **availability** of the source[7].

The JMP indicated that the WASH targets (6.1.-6.3) for SDG 6 would be monitored and reported based

[7] WATER, 2016b. Integrated Monitoring Guide for SDG 6 Targets and global indicators. U[Online]. Available: http://www.unwater.org/publications/integrated-monitoring-guide-sdg-6/

on service 'ladders', enabling benchmarking and comparison of progress across countries at different stages of development[8] (Figure 5). The JMP water supply service ladder defines each level of service that a country needs to monitor and report, with the purpose of moving the population up the ladder until Target 6.1 is achieved and the entire population has access to a safely managed water supply service (Figure 5).

Countries will be expected to monitor and report progress with all levels on the water ladder, with a particular focus on those levels that relate to the SDG global targets and indicator, i.e. safely managed water supply.

Each country will need to set intermediate objectives (i.e. basic, limited levels of service) for drinking water supply services that are adapted to the specific situation found in the various geographic areas, etc. (i.e. various local , district municipalities; provinces, etc.

To monitor and report the international SDG Indicator 6.1.1 will require a country to collect and report data on the number of individuals:

a) using an **improved drinking water source**
b) which is **located on premises**
c) **available when needed** and
d) **free of faecal (and priority chemical) contamination**

Each of these four measurement criteria are explained below.

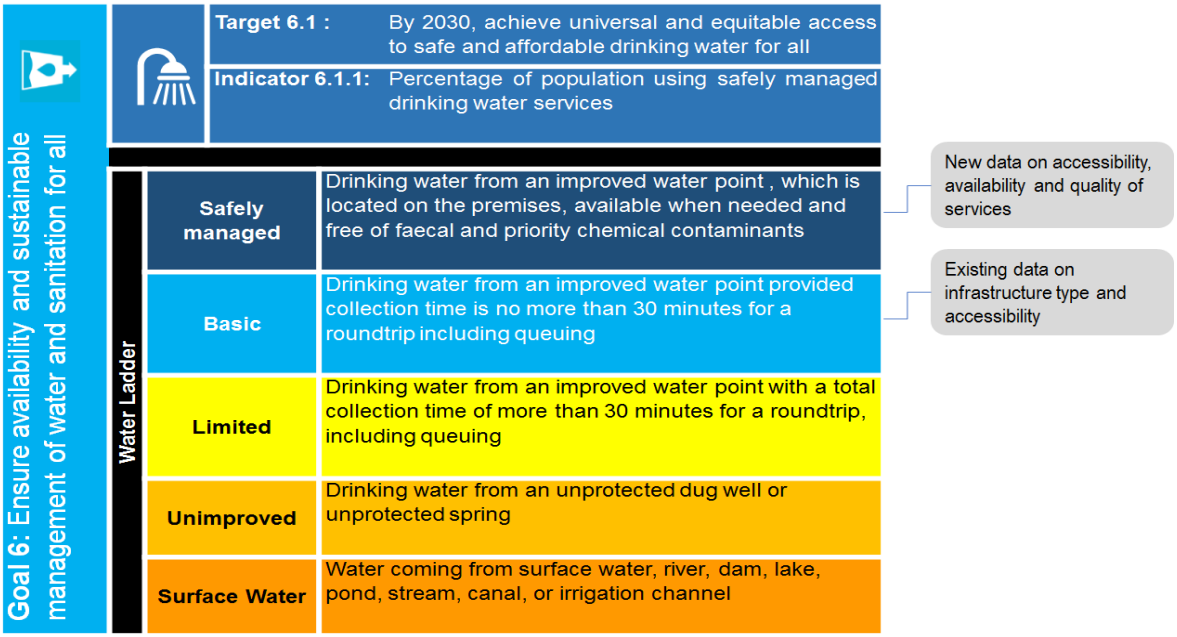


Figure 5: JMP Water Supply Ladder[8]

3.1.3 Access: What is an improved drinking water source?

Within the new service level ladder, the first criteria for a safely managed water service (top rung of the ladder) is having access to an **improved drinking water source**.

In the context of the service provided, the top rung of a 'safely managed water supply" is not the only level which would have individuals using an improved water supply source. In fact, the three top rungs of the water ladder in Figure 5 all require individuals to

[8] WHO and UNICEF, 2017. Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and SDG Baselines. Geneva: World Health Organization, WHO) and the United Nations Children's Fund (UNICEF), 2017. Licence: CC BY-NC-SA 3.0 IGO.

have access to an improved water source. Individuals will be classified as having:

1) **Safely managed water supply** if these individuals have access to an improved drinking water supply source that meet all the criteria for a safely managed source, i.e. (b) within the premises; (c) which is available when needed AND (d) is free of faecal contamination.
2) **Basic water supply** if individuals have access to an improved drinking water supply that does not meet one or more of the criteria for a safely managed water supply services but the source is within 30 minutes of the home.
3) **Limited water supply** if individuals have access to an improved drinking water supply that does not meet one or more of the criteria for a safely managed water supply services but the improved source is greater than 30 minutes from the home (round-trip).

What does an improved drinking water source mean?

An improved drinking water source on these rungs of the ladder would include an individual which has access to[8]:

a) Piped water into dwelling
b) Piped water into yard/plot
c) Public tap/standpipes
d) Tubewell/boreholes
e) Protected dug wells
f) Protected springs
g) Rainwater collection
h) Bottled water

The JMP has indicated that bottled water and tanker truck water could also potentially deliver safe water to individuals. Due to challenges with gathering data on accessibility, availability and quality of these water supply sources, these source will for now be assumed to be improved water sources and individuals with access to these water supply sources will be classified as having access to a 'limited', 'basic' or 'safely managed' water supply source, based on the criteria outlined above[8].

To monitor and reported the proportion of individuals in a country with access to improved drinking water sources, the country will need to monitor and report the number of individuals in the country which have access to each of the various types of water sources (bullet a-h above). For example, the number of individual with access to piped water, with access to a borehole or tubewell, etc.

3.1.4 Access: What is an improved drinking water service located on premises?

The second JMP criteria for a safely managed drinking water supply service is an improved water source which is **located on the premises**.

What does an improved drinking water source "located on the premises" mean?

To meet the second criteria for a safely managed drinking water supply services, an individuals would need to have access to an improved drinking water source (outline in bullet a-h) which is *within the dwelling, yard or plot,* i.e. piped water, borehole, tubewell, protected dug well or spring, bottled water or tanker truck delivering water *within the dwelling, yard or plot.*

The country will need to monitor and report:

a) the number of individuals which have access to each of the various types of water sources, i.e. piped water; borehole, tubewell, protected dug well or spring, bottled water or tanker truck; **AND**
b) the distance to the drinking water source, i.e. in the house; in the yard; on the plot; < 30 minutes away from the house or >30 minutes from the house.

3.1.5 Availability: What is an improved drinking water service that was available when needed?

The third JMP criteria for a safely managed drinking water supply service is an on-site, improved water source that was **available when needed**.

What does 'available when needed mean"?

A number of different concepts could be used to measure an improved water source that is available when needed[8]. These include:

a) the quantity of water available or used in a given time period,

b) the hours of service per day (typically for piped supplies),
c) the frequency of breakdowns and the time required for repairs (typically for point sources such as boreholes).

For the purpose of SDG monitoring, countries need to focus on the amount of time when water is available (hours of service per day), using two main types of data, namely[9]:

a) household responses to questions on *availability of drinking water when needed* in nationally representative surveys or censuses. Households reporting not having sufficient water available when needed during the last week or month would be categorized as 'not available when needed'. This indicator would also capture problems caused by non-functioning water points.
b) Or where households survey or census data is not available, data will be collected from regulators or utilities on the *number of hours of service per day,* usually only for piped networks. Regulators may specify different thresholds for different types of utilities.

A safely management improved drinking water source would therefore be any one of the *improved drinking water source* discussed above, that are within the dwelling, yard or plot AND *available when needed,* i.e. piped water, borehole, tubewell, protected dug well or spring, bottled water or tanker truck delivering water within the dwelling, yard or plot which provide water when needed.

The country will need to monitor and report:

a) the number of individuals which have access to an improved water supply source on the plot; within the yard or in the house; AND
b) whether this water supply service was available when needed, i.e. has the improved water supply source be interrupted in the last 12 months.

[9] WHO, 2017. Safely managed drinking water – thematic report on drinking water 2017.: World Health Organization: Geneva, Switzerland

3.1.6 Quality: What is an improved drinking water service that is free from contamination?

The final JMP criteria for a safely managed drinking water supply service is an improved water source that was free from faecal and priority chemical contamination.

What does 'free from faecal and priority chemical contamination" mean?

Most countries have national water quality standards that are aligned with WHO *Frameworks for Drinking Water Quality*. In these standards, the highest priority for a water supply sources is that of the faecal contamination parameters, detected through indicator bacteria such as *Escherichia coli (E. coli)* in a 100 mL sample or *faecal coliforms* in a 100 mL sample.

The principal indicator of water safety used by the JMP for a safely managed improved drinking water supply is the absence of faecal indicator bacteria in a 100 mL sample. To monitor and reported the proportion of individuals in a country with access to improved drinking water sources that is safely managed, the levels of *Escherichia coli (E. coli)* or *Faecal coliforms* in the water source will need to be determined for each individual water source.

The country will need to monitor and report:

a) the number of individuals which have access to an improved water supply source on the plot; within the yard or in the house that is available when need; AND
b) meet *E. coli* or *Faecal coliform* standards.

Individuals in the country which have a drinking water supply services that meet all these criteria would be classified as having access to a safely managed drinking water supply service.

3.1.7 Access to Safely Managed Water Supply in Health Care Facilities

To monitor and report the "universal access" criteria of SDG Target 6.1, countries need to look beyond only monitoring access of individuals to a safely managed water supply at home, to monitoring of

access to a safely managed supply in all institutional settings and public spaces.

The JMP purposes that each country expand their water supply monitoring of SDG Target 6.1 to include monitoring of WASH in institutional setting, prioritising monitoring of WASH in schools and health care facilities[8].

Monitoring water supply services in health care facilities would follow similar requirements as for households.

Water service ladders for WASH in health care facilities have been purposed by the JMP (focussed on conditions in the outpatient setting) (Figure 6).

Countries will need to strive to achieve at least a **basic** level of water supply at all health care facilities. When all health care facilities have access to a **basic** services as a norm, a country-defined **advanced** service level would need to become the foci.

To monitor and report the proportion of health care facilities with access to a basic water supply service, a country will need to collect data on:

a) the number of health care facilities which have access to an improved water supply source; AND
b) that is on the premises of the facility; AND
c) is available when needed.

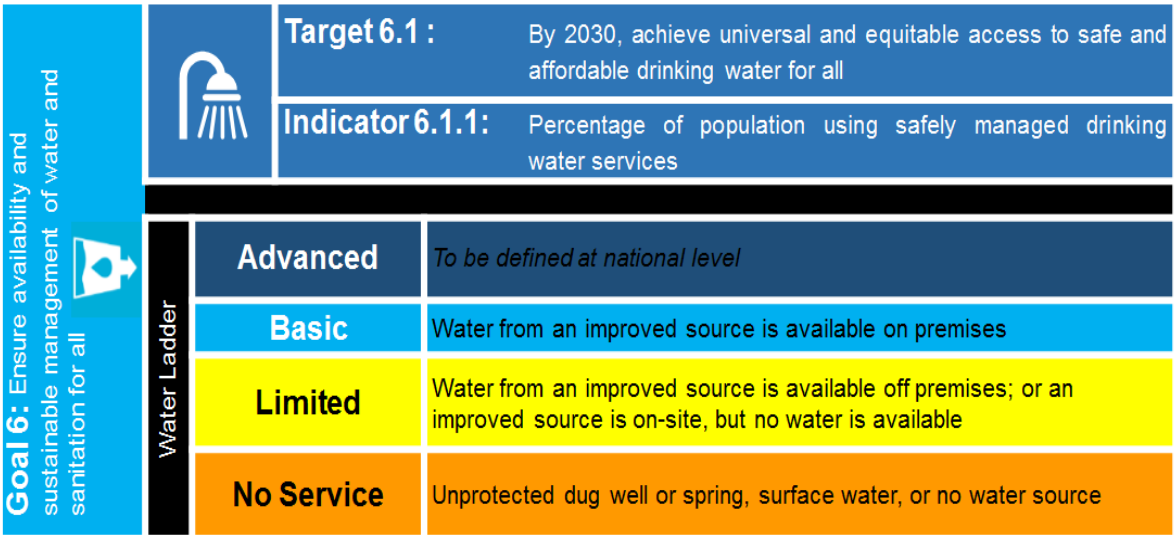
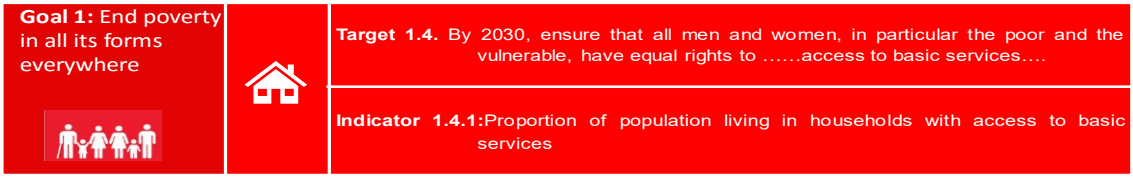


Figure 6: JMP service ladder for monitoring WASH in health care facilities

3.2 SDG Target 1.4 – End Poverty



3.2.1 Target 1.4 Explained

The second SDG which would require monitoring of WASH is that of SDG 1. SDG 1 aspires to end poverty in all its manifestations by 2030. It also aims to *ensure social protection for the poor and vulnerable, increase access to basic services and support people harmed by climate-related extreme events and other economic, social and environmental shocks and disasters*[10].

Measuring WASH progress within the poverty SDG will be monitored against Target 1.4 which aims to, by 2030, *ensure that all men and women, in particular*

[10] Taken from https://sustainabledevelopment.un.org/sdg1

the poor and the vulnerable, have ….access to basic services.

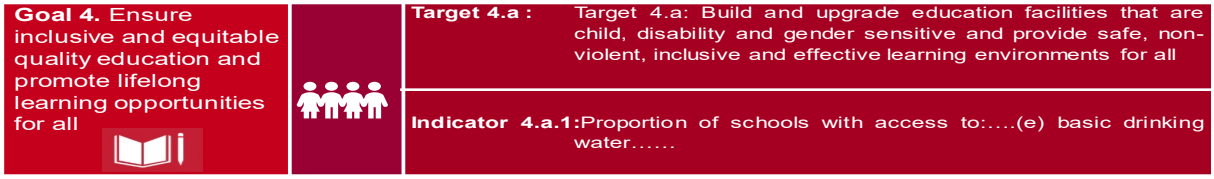
3.2.2 Indicator 1.4.1 Explained

Target 1.4 will be monitored through *Indicator 1.4.1 proportion of population living in households with access to basic services*.

Reporting this indicator requires that a country monitor, based on the water ladder, the number of individuals living in households that have access to an improved water supply source within 30 minute round-trip of the household.

Progress with this indicator can be monitored using the same data that will be collected to report the number of individuals in a country that have access to a basic water supply service for SDG Indicator 6.1.1.

3.3 SDG Target 4.a – Quality Education



3.3.1 Target 4.a Explained

The third SDG which would require monitoring of WASH is that of SDG 4. SDG4 aspires to achieve inclusive and equitable quality education for all. Achieving the SDG requires a country to increase efforts to provide equitable quality education, particularly to persons with disabilities, indigenous people, refugee children and poor children in rural areas.

One of the targets that countries will need to achieve to address SDG 4 is the global target 4.a. which requires that each country ensure that education facilities are built and upgraded in a manner that is child, disability and gender sensitive and that provide a safe, non-violent, inclusive and effective learning environment for all.

Achieving SDG target 4.a necessitate that countries build and upgrade drinking water supply services in schools in a manner that meet these inclusive and equity criteria.

3.3.2 Indicator 4.a.1 Explained

Target 4.a. is expected to be tracked through the monitoring of a single indicator, namely SDG Indicator 4.a.1: *Proportion of schools with access to: (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities**; (e) basic drinking water**; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)*.

The JMP provided a water service ladders for schools, which can be utilised to guide the monitoring and reporting of the schools component of the 'universal access' criteria of Target 6.1 (Figure 7)[8]. This same ladder can be applied to the monitoring of the school water supply service requirements of SDG Target 4.a.

The foci of monitoring access to water supply at schools is to ensure schools have access to at least a **basic** drinking water supply service, defined as a *drinking water supply from an improved source that is available at the school* (Figure 7).

In countries where **basic** services are already available at all schools, the country would need to define an **advanced** level of service to which it would strive.

Progress with this indicator can be monitored using the same data that will be collected to report the number of schools in a country that have access to a basic water supply service in SDG Indicator 6.1.1.

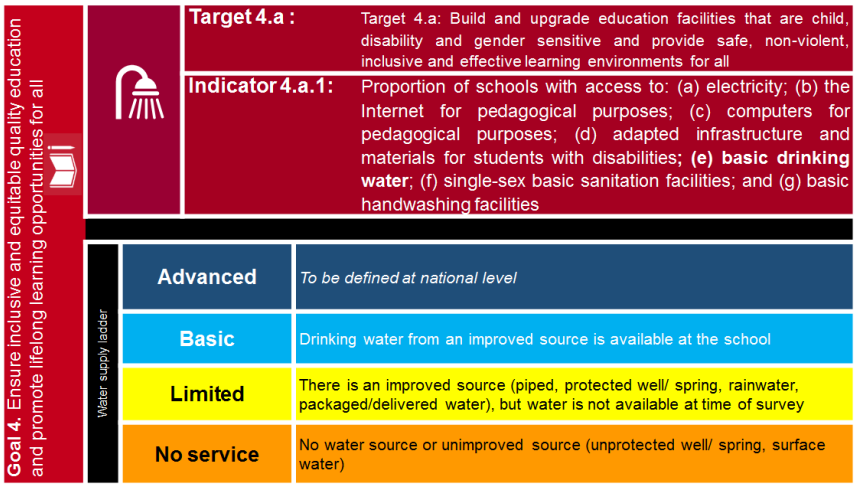


Figure 7: JMP water supply service ladder for schools (taken from[8])

3.4 SDG Target 11.1 – Sustainable Cities And Communities

3.4.1 Target 11.1 Explained

The fourth SDG which has a direct link to WASH is SDG 11. SDG 11 has the aspiration of making all cities and human settlements in a country, inclusive, safe, resilient and sustainable

Target 11.1 of SDG 11 focusses on ensuring that all individuals living the cities and human settlements of the country, *by 2030, have access to adequate, safe and affordable housing and basic services and upgrade slums*. To achieve this target, individuals living in the cities and settlement of a country will need to have access to at least a **basic** water supply service.

3.4.2 Indicator 11.1.1 Explained

Target 11.1 is monitored by a single indicator, *Indicator 11.1.1* which monitors the *proportion of urban population living in slums, informal settlements or inadequate housing*.

Reporting this indicator requires that a country monitor the number of individuals in cities and human settlements that live in inadequate housing, which include living in a house which does not have access to safely manage water supply service within 30 minutes of the household.

Progress with this indicator can be monitored using the same data that will be collected to report the number of individuals in a country that have access to a basic water supply service (SDG Indicator 6.1.1).

The JMP water supply ladders for individual, schools and health care facilities have the aim to progressively raise the standard of drinking water services for all.

There is an immediate priority for countries to first ensure universal access to at least a basic water supply service in schools, health care facilities and households, i.e. addressing the 'unfinished targets' of the MDG. Universal access to basic services will need to pay particular attention to poor and vulnerable groups.

For this reason, the JMP will continue to track the population using **basic** drinking water as well as lower levels of service, i.e. countries would still need to monitor and report the MDG water supply indicator.

The question remains, does South Africa have the data and capacities to report all the component required to report the WASH SDG targets and indicators.

The JMP water supply ladders for individual, schools and health care facilities have the aim to progressively raise the standard of drinking water services for all.

There is an immediate priority for countries to first ensure universal access to at least a basic water supply service in schools, health care facilities and households i.e. addressing the 'unfinished targets' of the MDG. Universal access to basic services will need to pay particular attention to poor and vulnerable groups[8].

For this reason, the JMP will continue to track the population using **basic** drinking water as well as lower levels of service i.e. countries would still need to monitor and report the MDG water supply indicator.

The question remains, does South Africa have the data and capacities to report all the component required to report the WASH SDG targets and indicators.

4 WHAT CAN SOUTH AFRICA MONITOR AND REPORT FOR WATER SUPPLY SERVICES?

Reporting the SDG WASH targets and indicators requires submission, to the JMP, of data that is collected from a variety of national data sources including:

- Nationally representative household surveys
- Population and housing censuses
- Administrative data (such as regulatory agencies)
- Service provider data

South Africa has a number of sources of data to report drinking water supply services in the country. Of note are the:

- The **General Household Survey** and **Census** of StatsSA: which can provide data on the population which have access to each type of drinking water supply; availability of supply, and perceptions of water quality (could be utilised as a proxy indicator until the water quality data is available).
- **The Blue Drop system**: which can provide information on the safely managed drinking water supply service as an improved water source that is free from faecal and priority chemical contamination using:
  a) the populations of Water Service Authorities which have Water Safety Plans or
  b) the population of WSAs which have water quality which meet BD standards.

4.1 PROGRESS WITH THE WATER SUPPLY MDG

South Africa, during the MDG era, made significant progress in providing access to improved water supply services to all people in the country. By 2015, South Africa had address the water supply MDG, with access to improved water supply increasing to 93%, from 83% in 1990[11] (Figure 8).

Despite this achievement, there were still disparities in access to improved water supply, with individuals in rural areas demonstrating much lower (81%) access to improved water supply when compared to 98% of urban households.

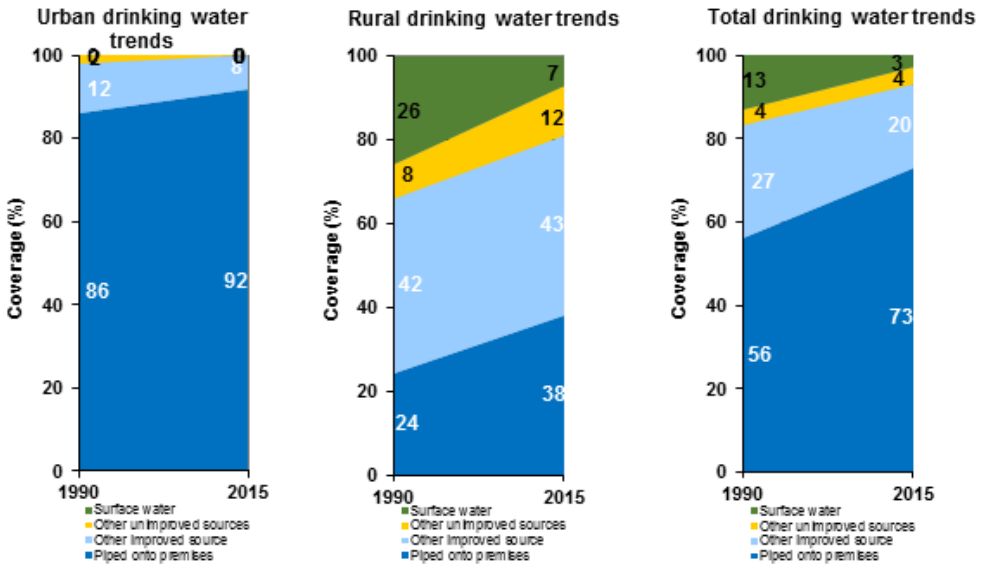


Figure 8: Progress with the water supply MDG in South Africa from 1990 to 2015[12]

[11] UNICEF and World Health Organization, 2015. Progress on sanitation and drinking water – 2015 update and MDG assessment. Available. Online: http://files.unicef.org/publications/files/Progress_on_Sanitation_and_Drinking_Water_2015_Update_.pdf

[12] Taken from UNICEF and World Health Organization (2015). See above

South Africa had, during the MDG era, developed a credible manner of collecting data to monitor and report the proportion of the population which had access to an improved water supply services. At the time, the country provided the JMP with data to report the number of individuals in the country which had access to a households connection; public standpipe; borehole; protected dug well and spring and rainwater collection. These improved water supply sources were not measured against 'on the premises', 'available when needed" or 'safety' criteria.

Moving forward, for South Africa to report progress with the SDG water supply service indicators, the country would need to collect data to be able to report a number of sub-indicators, including:

a) Proportion of the population using *surface water* drinking water supply service
b) Proportion of the population using *unimproved* drinking water supply service
c) Proportion of population using *limited* drinking water supply service
d) Proportion of population using *basic* drinking water supply service
e) Proportion of population using improved drinking water supply services *on the premises*
f) Proportion of population using on-site, improved drinking water supply services *which are available when needed*
g) Proportion of population using *safely managed* drinking water supply services
h) Proportion of the population with access to a basic water supply at schools
i) Proportion of the population with access to a basic water supply at health care facilities

4.1.1 Proportion of the population using *surface water* drinking water supply services

Surface water =	Household with the main source of drinking water as flowing water/stream/river and stagnant water/dam/pool

The population group in South Africa that only has access to surface water as their drinking water source need to be the priority focus for provision of access to drinking water source in a country. This population group must reduce as the country progresses with the SDGs.

Within the South Africa General Household Survey, this group of the population would report their drinking water supply as:

a) flowing water/stream/river; and
b) stagnant water/dam/pool

The data to report this level of water supply service was captured by question 5.12 of the 2016 General Households Survey which asked: *What is the household's main source of drinking water?*

Figure 9 shows that only 3.39% of individuals in South Africa were estimated in 2016 to still be using surface water for the drinking water supply. These individuals are drawing their drinking water directly from rivers, streams, pools and dams, using water which is not treated in any manner and which may have been exposed to a range of water-related pathogens.

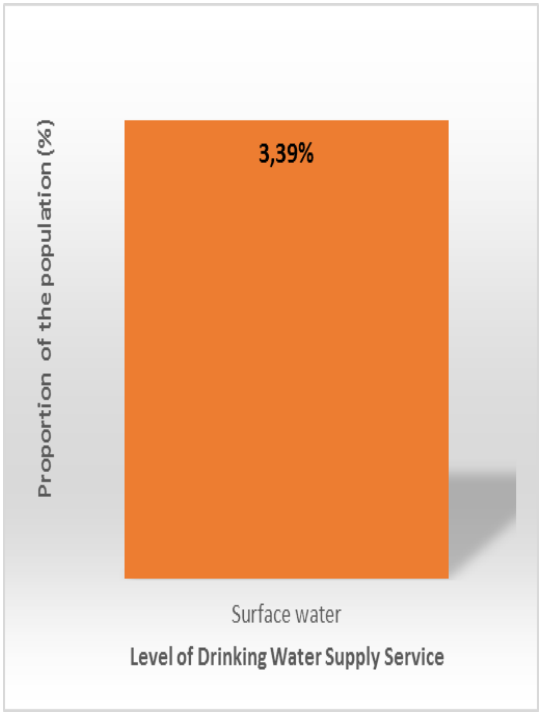


Figure 9: Proportion of South Africans estimated to have access to surface drinking water supply services in 2016[13]

[13] Data source: StatsSA GHS (2016). [Online]. Available: http://interactive2.statssa.gov.za/webapi/jsf/tableView/tableView.xhtml

4.1.2 Proportion of the population using *unimproved* drinking water supply services

Unimproved =	Household with the main source of drinking water as a well or spring

The population group in South Africa which does not have access to an improved water supply source (i.e. the MDG target) need to be the core focus and priority for provision of access to drinking water source in a country.

Within the South Africa General Household Survey, this group of the population would report their drinking water supply as:

1. Well
2. Spring

The data to report this level of water supply service was captured by question 5.12 of the 2016 General Households Survey which asked: *What is the household's main source of drinking water?*

Figure 10 below shows that only 2,12% of individuals in South Africa were estimated in 2016 to have access to an unimproved drinking water supply sources. These individuals are drawing their drinking water directly from wells and springs, using water which were not necessarily protected for pathogens and contamination.

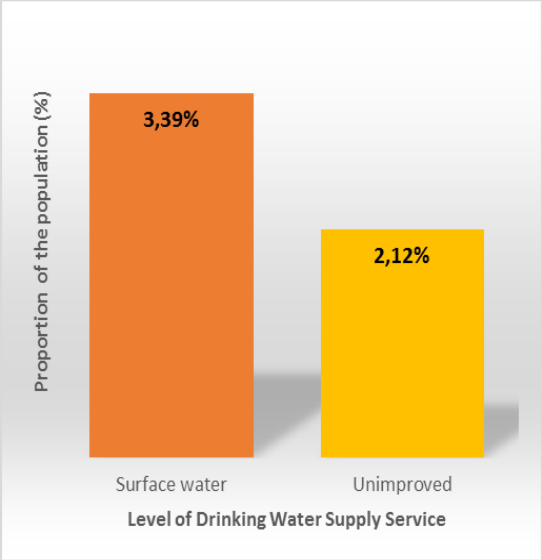


Figure 10: Proportion of South Africans estimated to have access to surface and unimproved drinking water supply services in 2016[13]

4.1.3 Proportion of the population with access to a *limited* drinking water supply services

Limited =
Household with the main source of drinking water as a neighbour tap; public/communal tap; water-carrier/tanker or borehole outside the yard
+
Distance to drinking water supply source is greater than 1 kilometre

The next level in the JMP water ladder is that of individuals having access to a "limited" drinking water supply. These individuals are those which reported in the 2016 GHS as having access to an improved water supply that is greater than a 30 minute round-trip distance from the households.

Access to a limited improved drinking water source would, in the South African context, be those individuals reporting having access to:

a) **Piped water on a community stand** which is >1 km *from the dwelling, yard or plot,*
b) **A neighbours tap** which is >1 km *from the dwelling, yard or plot*
c) **A public/communal tap** which is >1 km *from the dwelling, yard or plot*
d) **A water-carrier/tanker** which delivers at a site >1 km *from the dwelling, yard or plot*

This assumes that a source at a distance greater than 1 km represents a source >30 minutes round-trip from the households, plot or yard.

The data to report this level of water supply service was captured by question 5.12 of the 2016 General Households Survey and question 5.13a which asked: *how far is the water source from the dwelling or yard (200 m is equality to the length of two football/soccer fields)?*

Figure 11 shows that only 0,72% of individuals in South Africa are estimated in 2016 to have access to a limited drinking water supply service. These individuals do at least have access to an improved drinking water supply services.

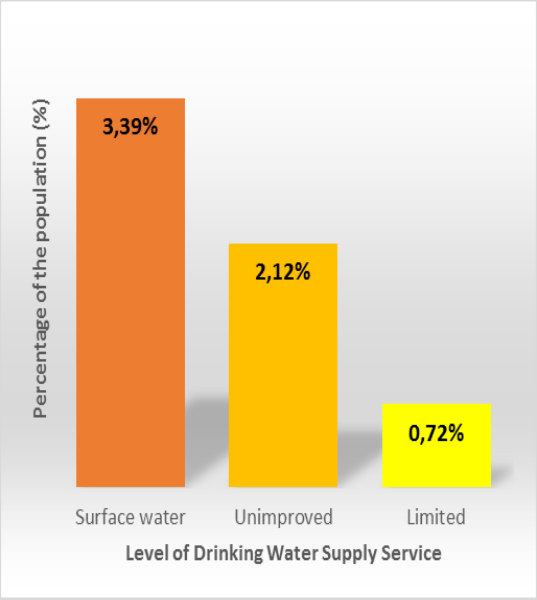


Figure 11: Proportion of South Africans estimated to have access to surface, unimproved and limited drinking water supply services in 2016[13]

4.1.4 Proportion of the population with access to a *basic* drinking water supply services

Basic =

Household with the main source of drinking water as a neighbour tap; public/communal tap; water-carrier/tanker or borehole outside the yard

+

Distance to drinking water supply source less than 1 kilometre

The next level in the JMP water ladder is that of individuals having access to a "basic" drinking water supply service. These individuals would report having access to an improved water supply which is not in the household, yard or plot but which takes less than 30 minute round-trip to collect drinking water.

Using a basic drinking water source would, in the South African context, be those individuals reporting having access to the same types of water source as outline in bullet a-d of a limited supply above but the improved water supply source would be less than < 1 km distance from the house, plot or yard.

This assumes that a source at a distance less than 1 km represents a source <30 minutes round-trip from the households, plot or yard.

The data to report this level of water supply service was also captured by question 5.12 and 5.13a in the GHS of 2016.

Figure 12 shows that only 17,31% of individuals in South Africa were estimated to have access to a basic improved water supply service in 2016.

It is important to note that SDG 1 has included a target to monitor and report progress with this intent, namely *Target 1.4. By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to …. **access to basic services**….* Progress with this target is monitored using a number of indicators, one of which is *Indicator 1.4.1: Proportion of population living in households with access to basic services.* This indicator is also reported by this sub-indicator of SDG Target 6.1.

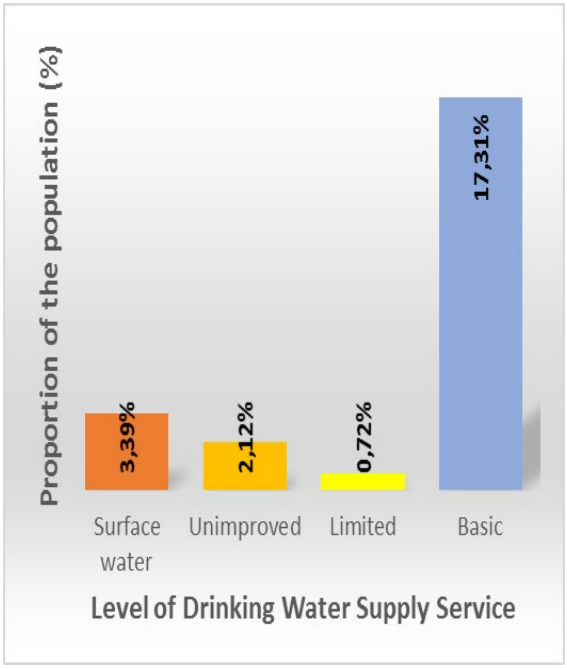


Figure 12: Proportion of South Africans estimated to have access to surface, unimproved, limited and basic drinking water supply services in 2016[13]

4.1.5 Proportion of the population using improved drinking water supply services *on the premises*

Improved on the premises = Household with the main source of drinking water as piped (tap) inside the dwelling/house/yard or borehole in the yard or rain-water tank in yard

The first criteria for the safely managed water supply service of SDG Indicator 6.1.1 is having access to an improved drinking supply service within the household, yard or plot.

This indicator would report the proportion of South Africa which reported in question 15.1[14] of the 2016 GHS as having access to a drinking water supply source that was:

a) Piped (tap) water inside the dwelling/house
b) Piped (tap) water inside the yard
c) Borehole in the yard
d) Rain-water tank in yard

Figure 13 shows that 73,82% of individuals in South Africa were estimated, in 2016, to have access to an improved water supply service which was within the household, yard or plot.

Figure 13 shows only the first element of a SDG safely managed water supply service, namely an on-site improved drinking water supply service. To be fully compliant as a safely managed water supply service the source must be available when needed and must meet potability standards (must be free from faecal contamination).

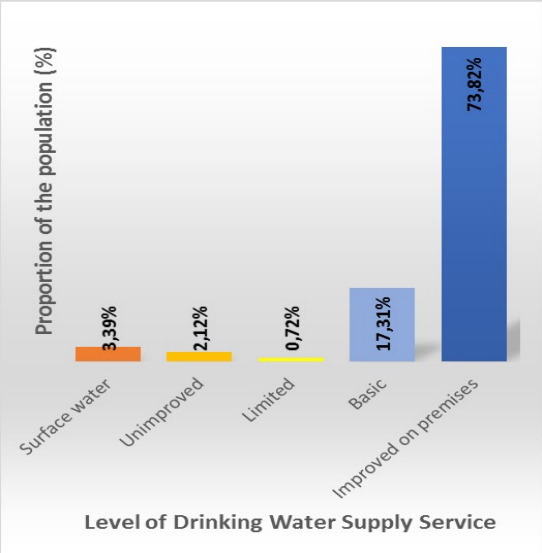


Figure 13: Proportion of South Africans with access to an unimproved, limited, basic and improved water supply on the premises as reported in the GHS 2016[13]

4.1.6 Proportion of the population using improved drinking water supply services on the premises *which is available when needed*

On-site improved and available when needed =

Household with the main source of drinking water as piped (tap) inside the dwelling/house/yard or borehole in the yard or rain-water tank in yard

+

Not interrupted at any time in the past 12 months

The second requirements of a safely managed drinking water supply service is that the onsite improved water supply services is available when needed.

Data to report access to an improved drinking water source on the premises which is available when needed, in the South African context, was collected by two questions in the GHS in 2016. Firstly, question 15.1 which collects data on individuals which access to an improved source on-site and secondly, the question 5.19a which asked: *has your municipal water supply been interrupted at any time during the last 12 months.*

Figure 14 shows that 36,79% of individuals in South Africa were estimated, in the 2016 GHS, to have access to an improved water supply service which was within the household, yard or plot **AND** which is available when needed (not interrupted for longer than 2 days in the past year).

Figure 14 shows only two element of a SDG safely managed water supply service, namely an on-site improved drinking water supply service AND which is available when needed. To be fully compliant as a safely managed water supply service the source must meet potability standards (must be free from faecal contamination).

[14] *What is the household's main source of drinking water?*

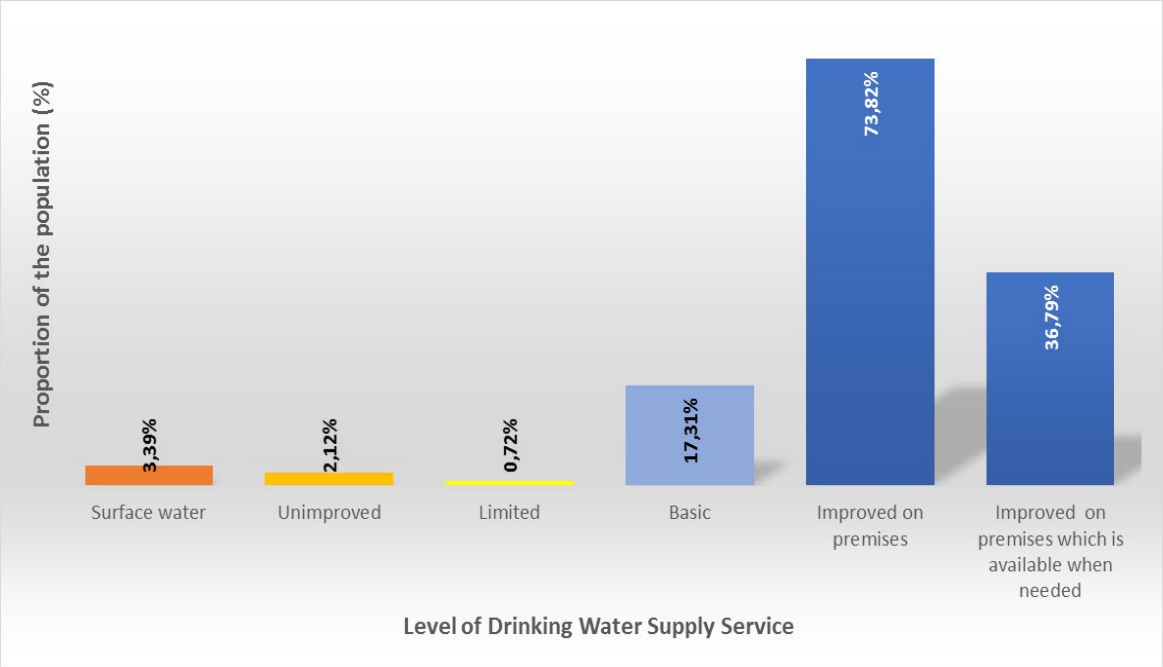


Figure 14: Percentage of individuals in South Africa with access to surface water, limited, basic and on-site water supply services, which is available when needed

4.1.7 Proportion of the population using *safely managed* drinking water supply services

Safely managed =

Household with the main source of drinking water as piped (tap) inside the dwelling/house/yard or borehole in the yard or rain-water tank in yard

+

Not interrupted at any time in the past 12 months

+

Perceived to be safe to drink

The final requirements of a safely managed drinking water supply service is that the available, onsite improved drinking water supply services is free of faecal contamination. Using an improved drinking water source on the premises which is available when needed would, in the South African context, meet *SANS 241 standards for E. coli or F. coliform*

South Africa has, as yet, not included water quality sampling as part of the GHS. It is therefore not possible to report this element of the indicator using the methods recommended by the SDGs.

A proxy indicator can however be utilised, namely using the GHS question 5.14 which asked: *is the water from the main source of drinking water before any treatment….safe to drink?*[13] This would provide the perception of households related to the safety of their drinking water source.

Using household survey perceptions of safety of drinking water sources, Figure 15 shows that only 35,58% of individuals in South Africa were estimated to use a safely managed water supply service in 2016. This implies that just over a third of South Africa had access to an on-site improved drinking water supply service that was not interrupted in the previous 12 months and which was perceived to be safe to drink. This is a significantly small proportion of the 55 million strong South African population.

It is clear that the reporting of the SDG indicator has a significant impact on South Africa water supply services access progress. The proportion of individuals which meet the SDG Indicator 6.1.1 of a safely managed water supply services are significantly less than the 93% of the population which met the MDG 7c indicator of access to an improved water supply.

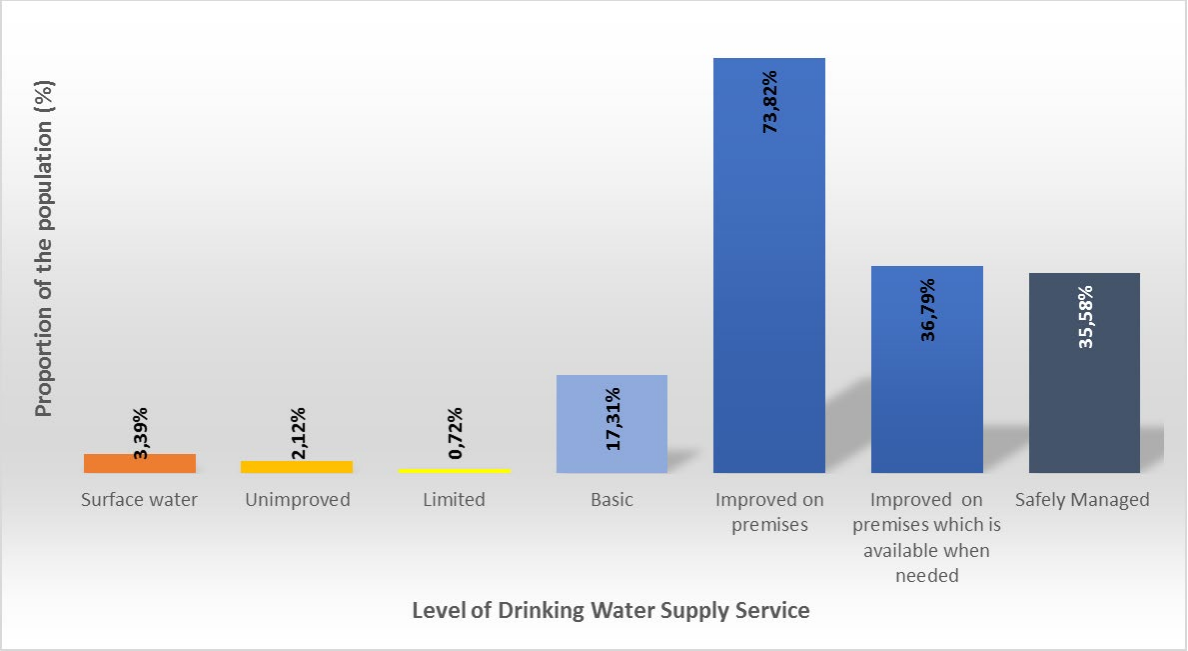


Figure 15: Percentage of individuals in South Africa using unimproved, limited, basic and a safely managed water supply service

4.2 Progress with the Schools Water Supply SDG

It is the responsibility of the National Department of Education to provide the norms and standards for adequate and safe water supply in schools in South Africa. These legally binding norms and standards were published in November 2013, providing the Minimum Norms and Standards for a basic level of infrastructure that every school must meet in order to function properly[15]. The Norms and Standards regulations apply to all public schools in South Africa.

According to Section 11 of the Norms and Standards, sources of water supply could include one or more of the following[15]:

a) A municipal reticulation network: – assessed in the National Assessment Report as a water reticulation system that was installed by the municipality as a connection to the school site.
b) rain water harvesting and, when so required, tanker supply from municipalities: - assessed as no formal municipal service and the school depends on other sources of water such as a borehole located on or near the school or rainwater which was collected on roofs and paved areas and piped to storage tanks equipped with taps.
c) mobile tankers: – assessed as municipal transported water from a source to a point on the school site or near the school.
d) boreholes and, when so required, tanker supply from municipalities: – assessed as municipal installed basic water reticulation system at a central communal tap, usually located in the road reserve.

According to Section 11 of the Norms and Standards for School Water Supply and Sanitation in South Africa, water in schools must[15]:

1) Provide **sufficient water supply** which complies with all relevant laws and which was **available at all times** for drinking, personal hygiene and, where appropriate, for food preparation.
2) Have **sufficient water collection points and water use facilities** available at all schools to allow **convenient access to, and use of**, water for drinking, personal hygiene and, where appropriate, for food preparation.

[15] DoE (2013). Regulations Relating To Minimum Uniform Norms and Standards for Public School Infrastructure. Government Notice R920 in Government Gazette 37081 of 29 November 2013. Pretoria: Government Printers

3) Provide a choice of an appropriate water technology based on an assessment conducted on the most suitable water supply technology for each particular school and **must be maintained** in good working order.

According to the Department of Education's Norms and Standards the acceptable levels of water supply service is that *All schools will be provided with minimum/basic water supply as stated in Section 3 of the Water Service Act, 1997 (Act 108 of 1997). No school is allowed to function without potable water*.

4.2.1 Percentage of schools with access to no or limited drinking water supply services

No water =	School with no water supply
Limited =	School with an improved water supply

Like individuals and households using a limited drinking water supply service, schools which provide learners and educators with a basic level of water supply service would provide an improved water supply to a school but water was not available at the time of assessment. No water supply however, are schools which did not have access to an improved water supply in 2016.

South Africa's National Education Information Management System (NEIMS) currently reports the number of school sites with unreliable water supply, which could be utilised to report schools with access to a limited water supply. An unreliable supply is captured by the system as the incidences reported by school officials as to the consistency of supply. If the official reported that the supply was on average available for less than half the time, it was recorded as 'unreliable' or 'reliability of service was less than 50%'.

Schools sites with access to a limited improved drinking water source would, in the South African context, was deemed to have access to a municipal water supply which was not providing water at the time of the assessment[16].

Figure 16 shows an very small proportion of schools in the country do not have access to an improved drinking water supply, while 99,23% of schools sites had access to a municipal water supply service in 2016. Some of these site did however have an unreliable water supply.

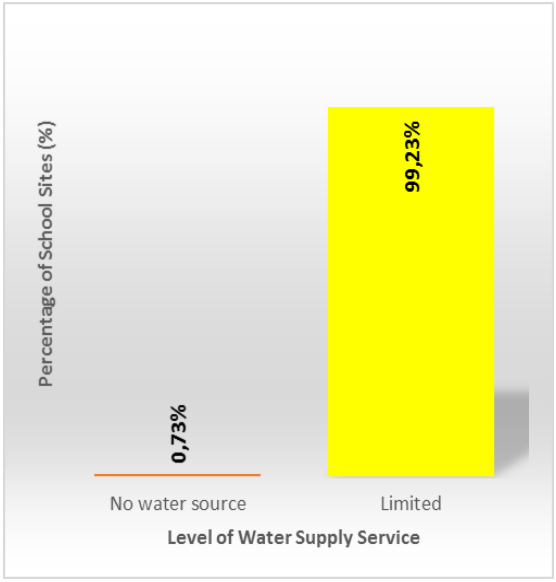


Figure 16: Percentage of schools sites in South Africa with no water or with access to a limited water supply services[17]

4.2.2 Percentage of schools with access to a basic drinking water supply services

No water =	School with no water supply
Basic =	School with an improved water supply **+** Water supply is available at the time of assessment

Schools with access to a basic drinking water supply service would have access to a water supply which is in the school building, yard or plot AND which was providing water at the time of assessment of the school.

Using the categories of an acceptable level of water supply service at schools, as outlined in the DoE

[16] The NEIMS current report water supply services for school sites, with sites, in many cases, reported to have more than one type of water supply services. Hence, the data shows more sites than the number of schools. For example purposes, this report only uses the municipal water supply sites for reporting 'access' at schools. The NEIMS will need to be review and aligned to be able to report this SDG indicator in future.

[17] Data source: DoE (2016). NEIMS Standards Report 2016. [Online]. Available: https://www.education.gov.za/Portals/0/Documents/Reports/NEIMS%20STANDARD%20REPORT%20JUNE%202016.pdf?ver=2016-07-14-131548-930

Regulations relating to the Uniform Minimum Norms and Standards for Public School Infrastructure[15] a basic drinking water supply service would be:

- Municipal reticulated water supply that is providing water at the time of the assessment
- Yard tap that is providing water at the time of the assessment
- Onsite borehole or well that is providing water at the time of the assessment
- Onsite rainwater harvesting that is providing water at the time of the assessment

Figure 17 shows that only 78,03% of school sites in South Africa were estimated, in 2016, to have access to a municipal water supply which is reliable (basic improved water supply service).

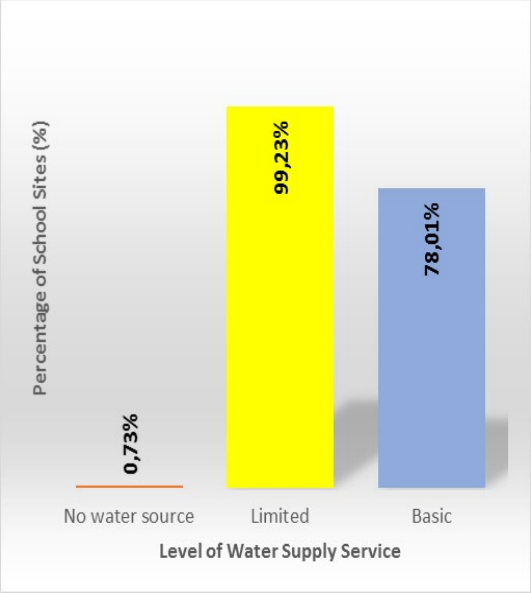


Figure 17: Estimate percentage of school sites in South Africa with no, limited and basic drinking water supply services[18]

4.2.3 Percentage of schools with access to advanced drinking water supply service

The JMP indicates that criteria for an advanced level of drinking water supply at schools could include additional elements to those in the 'basic level' such as the quality of drinking water. This would require a whole additional level of monitoring and reporting of school water supply services in South Africa.

4.3 Progress with Water Supply Services in Health Care Facilities

The Department of Health is currently setting up a monitoring systems for water supply services in health care facilities in South Africa.

It will be important to ensure that the manner in which the system monitors and reports access to water supply services in these facilities is in line with the requirements of SDG indicators, as well as with South Africa's norms and standards for water supply services.

[18] Data source: DoE (2016). NEIMS Standards Report 2016. [Online]. Available: https://www.education.gov.za/Portals/0/Documents/Reports/NEIMS%20STANDARD%20REPORT%20JUNE%202016.pdf?ver=2016-07-14-131548-930

5 WHAT SHOULD SOUTH AFRICA MONITOR AND REPORT FOR WATER SUPPLY SERVICES?

5.1 A DRINKING WATER SUPPLY MONITORING FRAMEWORK FOR SOUTH AFRICA

With the new global development agenda being guided by the SDGs, this report assumed that the SDG hierarchal monitoring framework is the most effective and efficient hierarchy for monitoring of WASH services in South Africa.

The UN SDG Monitoring Framework is structured in a hierarchal framework of goals, targets and indicators. The framework consisted of 17 goals, each linked to one or more targets (169 in total) which in-turn are linked in a hierarchical manner with global indicators (232 in total). Each level in the SDG hierarchical monitoring framework has a specific purpose:

- **SDGs:** each goal is a clear global intent or aspiration.
- **SDG Targets:** a specific, planned level of a result to be achieved within an explicit timeframe with a given level of resources. Targets are measured by indicators.
- **SDG Indicators:** quantitative or qualitative factor or variable that provides a simple and reliable means to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of a development actor[19]. The SDG indicators have two purpose; (1) to ensure that "management" stays on course and (2) to hold all stakeholders accountable for the SDGs[20].

This hierarchical framework was utilised to develop a WASH Monitoring Framework to guide WASH monitoring and reporting in South Africa in future (Figure 19).

The assumption was made that the SDGs themselves were effective and efficient goals for monitoring sustainable drinking water supply services – hence these goals were not changed in the WASH Monitoring Framework. SDG 6 is the top-level goal (intent) of the framework (Figure 19).

The second level of the hierarchy were the SDG targets since these were widely consulted and international agreed -targets. The core targets within the WASH Monitoring Framework was SDG Target 6.1. This target is complimented by the other SDG WASH Targets and targets set by other WASH monitoring and reporting initiatives (i.e. AMCOW; GLAAS). These complementary targets were selected to address gaps which had been highlighted in the SDG 6 targets.

The third level in the hierarchy was the indicators. As noted previously, the SDG 6 WASH indicators are outcome indicators. South Africa is monitoring and reporting these indicators (using nationally-specific means of measurement) and will continue to do so until 2030. These indicators thus formed the core of the outcome indicators in the WASH Monitoring Framework. The WASH indicators of the other SDGs were also included in the framework.

There are however, a number of other types of indicators, including input indicator and output indicators, which could be utilised to monitor and report progress towards universal and equitable access to water supply. Many of the future monitoring efforts in the country, including Blue Drop, Green Drop, No Drop, National Benchmarking Initiative, NDP and MTSF, National Treasury and policy imperatives, focus on measuring, monitoring and reporting input and output indicators for the WASH sector. These indicators monitor and report the state of the enabling environment which supports the achieving of universal and equitable access to safely managed water supply, sanitation and

[19] OECD, 2002. Development Results. An Overview of Results Measurement and Management. Available. Online: https://www.oecd.org/dac/peer-reviews/Development-Results-Note.pdf

[20] SDSN, 2015. Indicators and a Monitoring Framework for the Sustainable Development Goals Launching a data revolution for the SDGs. A report to the Secretary-General of the United Nations by the Leadership Council of the Sustainable Development Solutions Network. Online. Available: http://unsdsn.org/wp-content/uploads/2015/05/150612-FINAL-SDSN-Indicator-Report1.pdf

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hygiene services. Hence, these indicators are included in the WASH Monitoring Framework.

Finally, certain gaps were identified in the SDG monitoring framework (i.e. financial monitoring; equity monitoring). Indicators were added to the WASH Monitoring Framework to address these gaps. These indicators were however, taken for existing international and regional monitoring efforts including GLAAS; AMCOW, etc. The various indicators included in the WASH Monitoring Framework are demonstrated by different colour boxes, based on their source, e.g. SDG goals, targets and indicators are blue, while AMCOW indicators are brown (Figure 18).

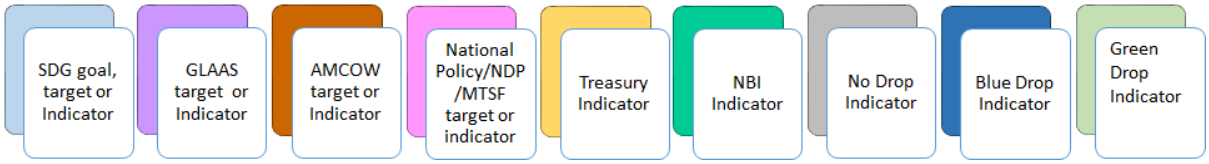

Figure 18: Colour coding of indicators in the South African WASH Monitoring Framework

The WASH Monitoring Framework is hierarchical structure, shown in Figure 19. Reading Figure 19 from right to left, improvement in the input indicators would demonstrate an improvement in the enabling environment (i.e. financial; policy; governance; human resource) and should translate into an improvement in the WASH outcome indicators (i.e. equitable access; safe water supply; hygienic sanitation) of WASH services.

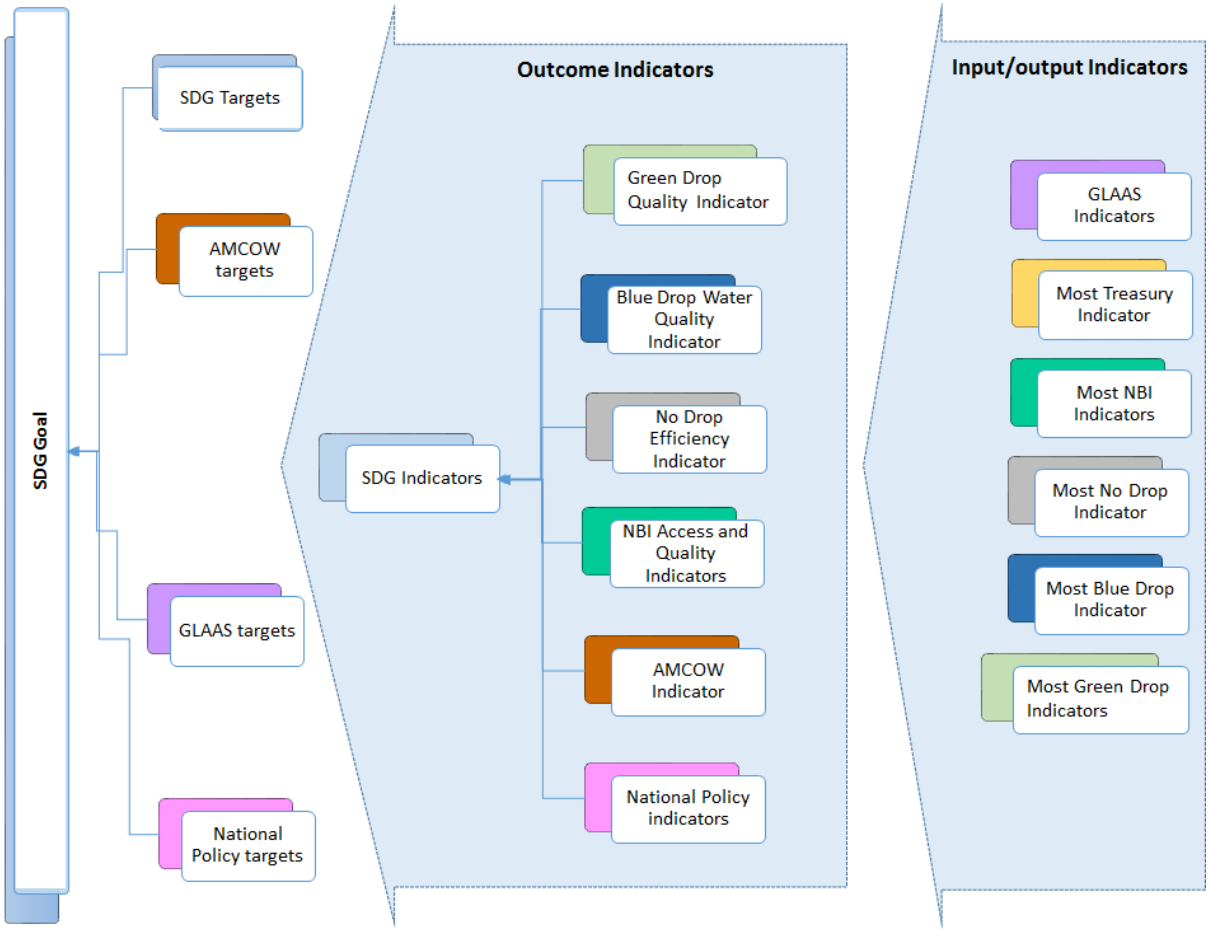

Figure 19: Monitoring Framework utilized for water supply services in South Africa

It is clear that monitoring and reporting the sustainability of drinking water supply services using SDG Indicator 6.1.1 *Proportion of population using safely managed drinking water services* is not

sufficient. The indicator does not address all the sustainability criteria of SDG Target 6.1: ***universal*** *and* ***equitable access*** *to* ***safe and affordable*** *drinking water for all.* For example, Indicator 6.1.1 does not address the "affordability" component of Target 6.1.

If South Africa only reported SDG Indicator 6.1.1 there would be gaps in reporting the sustainability of drinking water supply services (post-2015). The country needs to address these gaps in their future water supply service monitoring and reporting.

To successful monitor and report the water supply SDG target, countries would need to progressively develop indicators to monitor and report at least 6 additional component of the target, namely:

a) **Universality** – requires additional indicators to monitor access to safely managed drinking water supply at all public sites (i.e. schools; clinics; hospitals; public places, etc.);
b) **Equity** – requires new indicators to monitor access to safely managed drinking water supply by gender (male/female), age (pensions/children), disability, socio-economic status (household income level) and settlement area (urban/rural)
c) **Accessibility** – requires addition indicators to monitor access to a safely managed drinking water supply which provides sufficient water and water which is acceptability to the user
d) **Safe** – is already addressed by the current SDG indicator 61.1 but should progressively include indicators to monitor key chemical contaminates of water
e) **Affordability** – requires addition indicators to monitor the affordability of safely managed water supply services
f) **Drinking water for all** – requires indicators as described for equity above

Combining these indicator needs with the current SDG Indicator 6.1.1 a Monitoring Framework for Safely Managed Water Supply Services in South Africa was developed (Figure 20). The framework, which hierarchical in nature and based on the SDG monitoring framework, includes all the components required to ensure sustainable water supply in the country, i.e. universality, equity, access, safety and affordability for all. The framework includes indicators to monitor and report each of these components of sustainable drinking water supply services.

Note: Figure 20 should be read from the bottom up, with the successful attainment of input/output indicators contributing to achieving the outcome indicators, which in turn will facilitate the achieving the water supply targets and goals for the country.

The outcome indicators shown in the Monitoring Framework for Safely Managed Water Supply Services in Figure 20 are linked to an indicator number. This indicator number is linked to Table 3 which provides details of the actual indicators and its source. Indicators in Table 3 show indicators which South Africa is already monitoring for the sustainability component, or indicators which are recommended to be monitored and report in the country in the future.

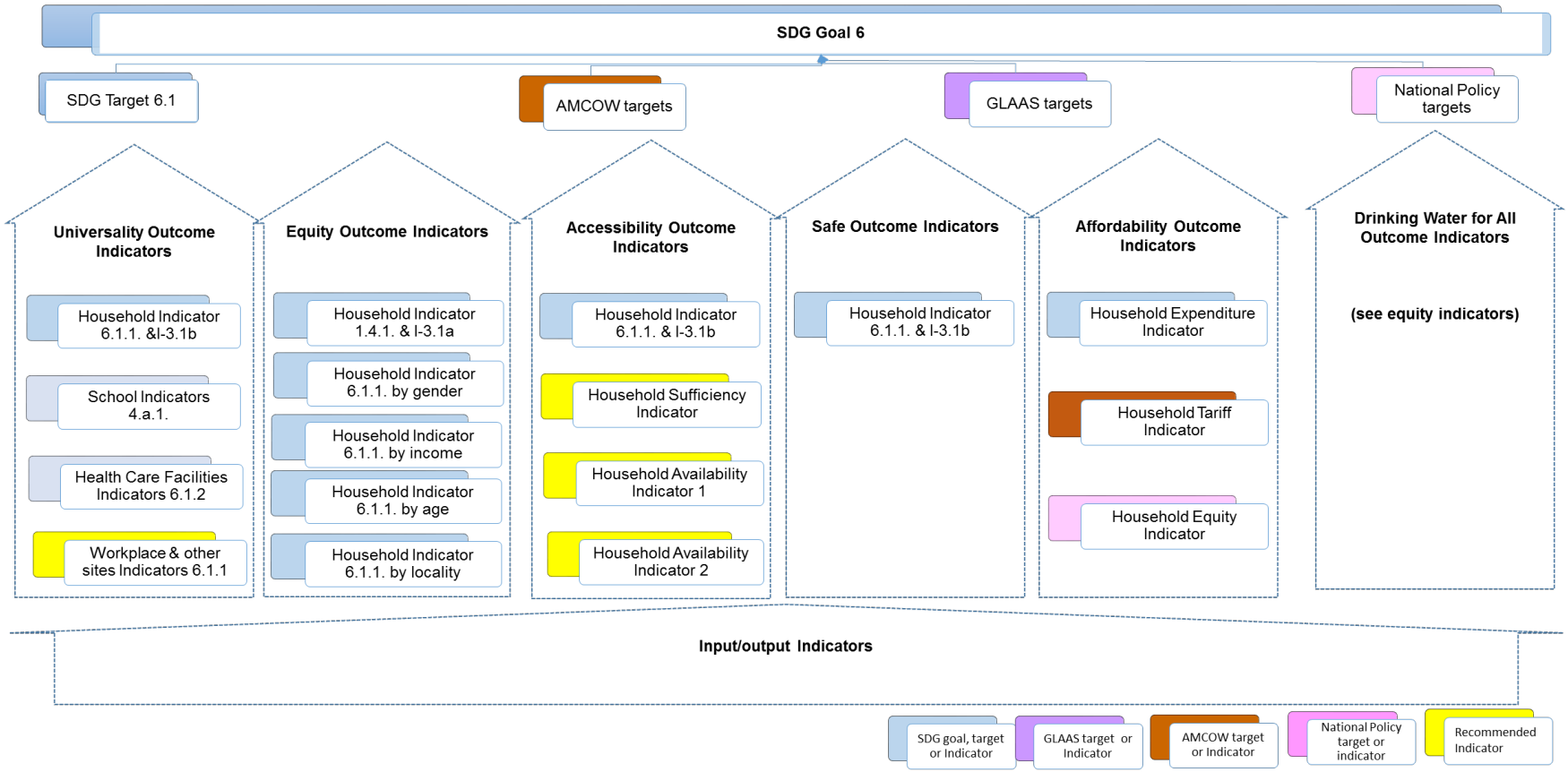

Figure 20: Monitoring Framework for Safely Managed Water Supply Services for South Africa.

Table 3: Indicators recommended in the Monitoring Framework for Safely Managed Water Supply Services for South Africa

Component	Indicator No.	Indicator	Source
Universality	Household Indicator 6.1.1 & I-3.1b	SDG Indicator 6.1.1 Proportion of population using safely managed drinking water services	SDGs
		I-3.1b: Percentage of population using safely managed drinking water services (SDG-6.1.1)	AMCOW
	School Indicators 4.a.1	SDG Indicator 4.a.1: Proportion of schools with access to (e) basic drinking water	Sustainable Development Goals
	Health care facilities Indicators 6.1.2	SDG Recommended Indicator: Proportion of health care facilities with access to basic drinking water	SDGs
	Workplace Indicators 6.1.3	Proportion of workplaces with access to basic drinking water	Recommended as future indicator
Equity	Household Indicator 1.4.1 & I-3.1a	Indicator 1.4.1: Proportion of population living in households with access to basic services	SDGs
		I-3.1a: Percentage of population with access to a basic drinking water service	AMCOW
	Household Indicator 6.1.1 by gender	Proportion of female/male headed households using safely managed drinking water services	Recommended as future indicator
	Household Indicator 6.1.1 by income	Proportion of households per household income quantile using safely managed drinking water services	Recommended as future indicator
	Household Indicator 6.1.1 by age	Proportion of population per age category using safely managed drinking water services	Recommended as future indicator
	Household Indicator 6.1.1 by locality	Proportion of the urban/rural using safely managed drinking water services	Recommended as future indicator
Accessibility	Household Indicator 6.1.1	SDG Indicator 6.1.1 Proportion of population using safely managed drinking water services	SDGs
		I-3.1b: Percentage of population using safely managed drinking water services (SDG-6.1.1)	AMCOW
	Household Availability Indicator 1	Proportion of households reporting a water supply interruption in the past 12 months (sufficient available – assuming safely managed water supply);	Recommended indicator
	Household Availability Indicator 2	Proportion of households reporting a water supply interruption for more than 2 days in the past 12 months (sufficient and continuous water available – assuming safely managed water supply);	Recommended indicator
	Household Availability Indicator 3	Proportion of households reporting a water supply interruption from more than 15 days in total in the past 12 months (sufficient and continuous water available – assuming safely managed water supply);	Recommended indicator
	Household Sufficiency Indicator	Proportion of the population with a water supply that delivers 25 litres per person per day from a source with a flow rate of not less than 10 litres a minute managed water	
	Household Aesthetic Indicator	Proportion of households reporting drinking water which was clear; good to taste and free from bad smells (i.e. aesthetically acceptable)	Recommended indicator
Safe	Household Indicator 6.1.1	SDG Indicator 6.1.1 Proportion of population using safely managed drinking water services	SDGs
		I-3.1b: Percentage of population using safely managed drinking water services (SDG-6.1.1)	AMCOW
Affordability	Household Expenditure Indicator	Proportion of the household budget spent on water supply services	JMP Recommended Indicator
	Household Tariffs Indicator	I-6.2a: Degree of implementation of equitable and efficient water supply and wastewater tariffs.	AMCOW
	Household Equity Indicator	Implementation of a free basic water supply service policy	South Africa Indicator

5.2 MONITORING UNIVERSAL ACCESS TO A SAFELY MANAGED WATER SUPPLY

There are numerous indicators to monitor and report household access to a safely managed water supply service in South Africa. The country is already reporting portions of this indicator through the NDP/MTSF; BDS indicators. These indicators do need review and updating to ensure compliance with all the aspects required to report SDG Target Indicator 6.1.

To adequately monitor and report progress in achieving the "universal access" criteria of SDG Target 6.1: will require indicators which progressively and incrementally monitor and report the percentage of schools, health facility, workplaces and public spaces which have access to unimproved, limited, basic and safely managed drinking water supply services (Figure 21).

The monitoring and reporting of these indicators in South Africa are expected to be implemented in an incremental manners as a number of the sectors, particularly the health, workplace and public space, do not currently monitoring sites using the various sources along the Water Ladder.

The following indicators, to address the 'universal' criteria of SDG Target 6.1, are recommended for inclusion in the Water Supply Service Monitoring Framework for South Africa:

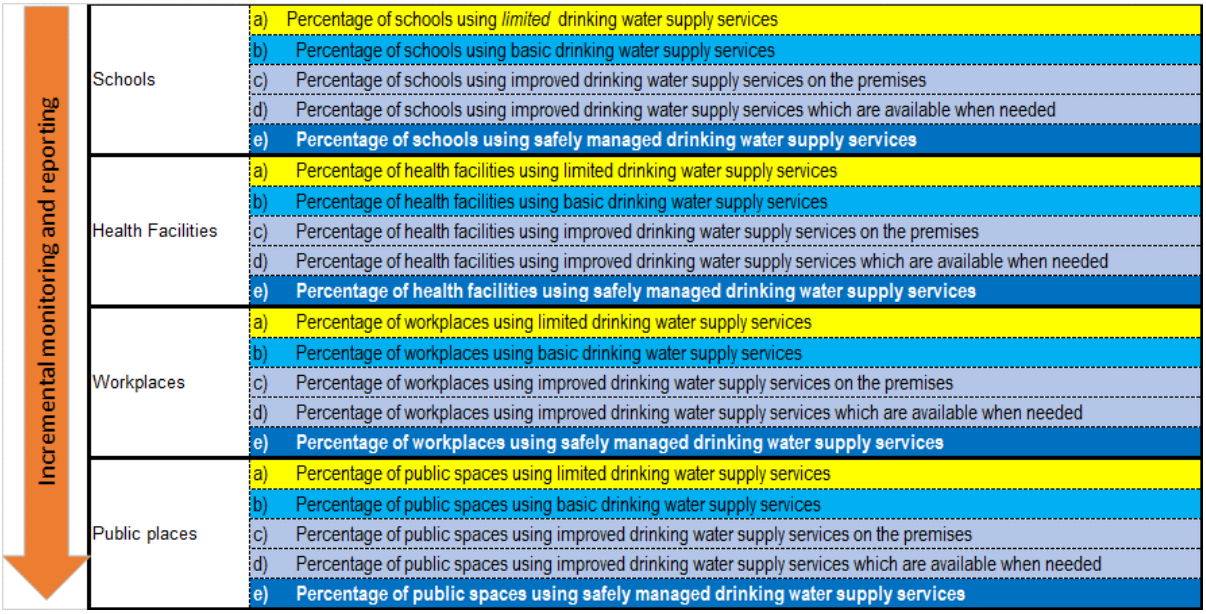

Figure 21: Incremental monitoring and reporting of additional elements required to track progress in achieving universal access to safely managed water supply services.

5.3 MONITORING EQUITY IN ACCESS TO SAFELY MANAGED WATER SUPPLY SERVICES

Equity in access to drinking water, according to UN-Water (2015), is defined as the *progressive reduction and elimination of inequalities among population subgroups.*

The Millennium Development Goal (MDG) framework did not have a target to track progress in eliminating discrimination and inequalities in access to drinking water supply. An important addition to the SDG Targets (as compared to the MDG) is the need for equity in access to a safely managed drinking water supply service. Equitable access implies that drinking water supply services are equitably accessible to all groups of the population, irrespective of their race, gender, economic status, etc. This does not imply that all households would receive the same levels of service, but rather that water supply (of various levels) would be equitability available to all individuals.

Targets and indicators formulated with the aim of elucidating inequalities in safe and affordable drinking water supply services would shine a powerful light on areas that need change and would

ensure that WASH monitoring was in line with the human rights imperative of overcoming inequalities wherever they occur.

The UNICEF and World Health Organization (2017)[8] indicated that the first step in monitor equitable access to water supply services is to ensure that all people in South Africa have access to, at least, a basic water supply services. The first service level to which South Africa should aspire is that all people in the country have access to an improved water point where drinking water supply collection time is no more than 30 minutes for a roundtrip (including queuing).

Once this equity imperative has been addressed, South Africa must focus on ensuring all South African's have access to safely managed water supply service.

Reporting of these equity indicators should progress to disaggregating reporting of access by gender; household income quantiles; age categories; settlement loci (urban/rural). This would allow the country to demonstrate progress in achieving equitable access to a safely managed water supply service and thus meeting equity imperatives and targets in the water supply sector.

Before the country can focus efforts on reporting SDG equity targets for the sector, it is necessary to reflect on equity mechanisms and efforts of the sector and to develop strategic objectives and equity targets for the water supply sector of the country.

The SDG poverty Target 1.4 of, by 2030, ensuring *that all men and women, in particular the poor and the vulnerable, have equal rights to …**access to basic services*** addressed equity issues in the water sector, to some extent. The assumption could be made that as the country progresses to providing a basic drinking water supply service to the entire population it would be addressing the issue of ensuring that all rural/urban; poor/rich; male/female; child, aged, etc. have equitable access to this service.

The country will then need to progressively build the capacity, methods and data collection and analysis processes to be able to report equity in access to the higher levels of service in the water ladder. The following indicators, to address the 'equity' criteria of SDG Target 6.1, are recommended for inclusion in the Water Supply Service Monitoring Framework for South Africa:

Water Supply Services Equity Indicators
Indicator 1.4.1: Proportion of population living in households with access to basic services
I-3.1a: Percentage of population with access to a basic drinking water service
Proportion of female/male headed households using safely managed drinking water services
Proportion of the urban/rural using safely managed drinking water services
Proportion of households per household income quantile using safely managed drinking water services
Proportion of population under 18 using safely managed drinking water services

Applying the same criteria as utilised to define a safely managed improved water supply service for individuals (see Section 4.1.6), the gender of the household head (male/female; age of the head of household (<18 = youth headed household; >60 = aged headed household) and location of the households (rural/urban) can used to determine the equity of access to safely managed improved water supply service.

Applying the equity criteria to the GHS data of 2016, the baseline for the equity indicator for access to a safely managed drinking water supply are as follows:

5.3.1 Proportion of female/male headed households using safely managed drinking water services

Figure 22 shows that, from the responses in the GHS of 2016, there was gender inequity in households using each of the water supply services along the JMP Water Ladder. More individuals (21,70%) in women headed households were using basic water supply services, as compared to individuals in male-headed households (14,13%). When it comes to higher levels of services (i.e. using on-site water supply which is available when needed), there is again inequity with a higher percentage of individuals in male-headed households using these services than individuals in female-headed households.

There is a significant difference in the percentage of individuals in male-headed households (40,25%) which had access to safely managed water supply

services as compared to female-headed households (29,11%).

What is also noteworthy is the sharp drop in access between having access to on-site improved water supply services and individuals with access to safely managed water supply service (available when needed and perceived to be safe).

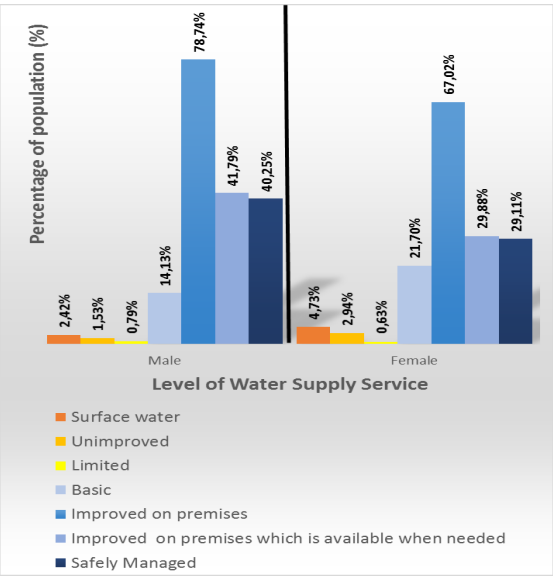

Figure 22: Proportion of individuals in male/female headed households with access to each type of water supply services on the SDG Water Ladder

5.3.2 Individuals in urban/rural using safely managed improved water supply services

Figure 23 shows that there is currently geographical inequity in individuals using each of the water supply services on the SDG Water Ladder.

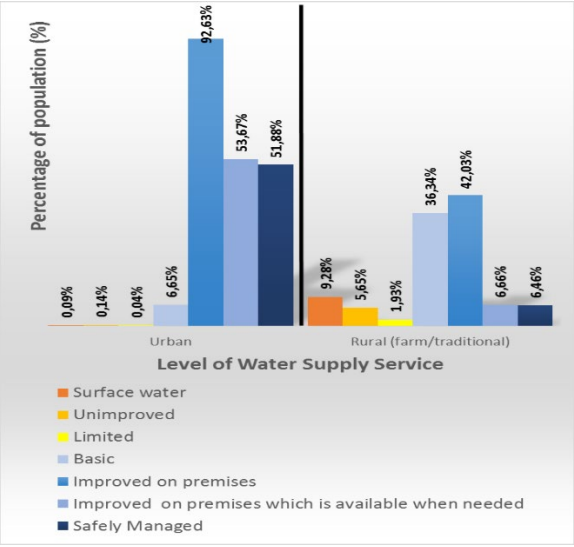

Figure 23: Proportion of individuals in rural/urban households with access to each type of water supply services on the Water Ladder

Firstly, a higher number of rural individuals had no access to improved water supply services as well as higher percentage had access to unimproved, limited and basic improved water supply sources, implying that individuals in the rural areas are more likely to not have access to an improved water supply services or having to walk some distance to collect water from a water supply service.

Secondly, a very higher percentage (92,62%) of individuals living if formal urban areas had access improved water supply services on the premises, as compared to individuals living in rural areas (42,03%).

Finally, related to higher levels of services (i.e. using on-site water supply which is available) there is again inequity with a higher percentage of individuals living in formal urban areas having uninterrupted water supply services in the previous 12 months. There was also a significant difference in the percentage individuals living if formal urban areas (51,88%) which had access safely managed water supply services as compared to individuals living in rural areas (6,46%). Women in the country seem to demonstrate the highest inequity in access to safely managed improved water supply services.

What is also noteworthy is the sharp drop in access from access to on-site water supply services to using a safely managed water supply service.

5.3.3 Proportion of the under 18 (child) population using safely managed drinking water services

Figure 24 shows there was significant inequity in access to the different levels of the JMP Water Ladder for individuals living in child-headed households in 2016. A relatively high (5,49%) proportion of these individuals only have access to a limited service which implies that individuals living in child-headed households have to spend more than 30 minutes (>1 km) to collect their drinking water

every day. This is much higher than the national norm for other equity measures (i.e. female and aged households). Similarly, a relative high percentage (7,06%) of individuals in these households had access to only a surface water source.

When it comes to higher levels of services (i.e. using on-site water supply and which is available when needed), there is again inequity with just over half of individuals in child-headed households using a drinking water supply service in their house, yard or plot. This percentage drops to just over a third of individuals when measuring assess to safely managed water supply services.

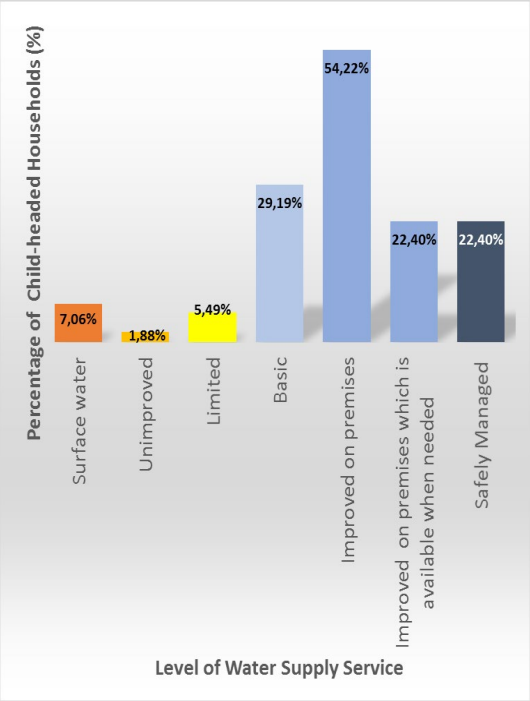

Figure 24: Proportion of individuals in child-headed households with access to each type of water supply services on the SDG Water Ladder

5.3.4 Proportion of the > 60 (aged) population using safely managed drinking water services

Figure 25 shows that there were also significant inequity in access to the different levels of the Water Ladder for individuals living in aged-headed households in 2016. A relatively high (>19%) percentage of these individuals only have access to a basic service which implies that individuals living in these households have to walk to collect their drinking water every day (i.e. the water supply is outside the property).

When it comes to higher levels of services, there is again inequity with just 69.69% of individuals in aged-headed households using a drinking water supply service in their house, yard or plot. This percentage dropped significantly to just under 30% of individuals when measuring assess to safely managed water supply services. This demonstrate that less than a third of South Africa's living in households with an aged head-of-household had access to a safely managed water supply service. This was significantly less than the national figure of 55,22% of individuals in the country which had access to a safely managed water supply service.

Just as concerning is that 5,11% and 2,37% of individuals living in households headed by an aged individual that had access to only a surface water source or an unimproved water supply services. These households, which have vulnerable individuals in them, were using water sources which may be of a compromised quality and at a long distance from the households.

b)

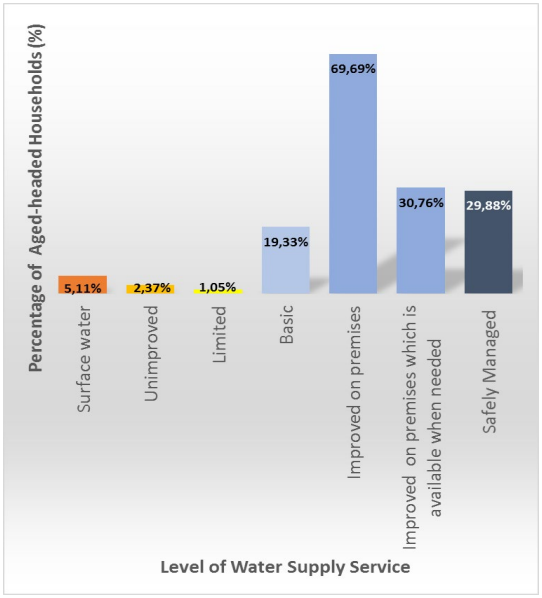

Figure 25: Proportion of individuals in aged-headed household with access to each type of water supply services on the SDG Water Ladder

5.4 Monitoring Access to Safely Managed Water Supply Services

SDG Indicator 6.1.1 already monitors and reports a number of the access criteria required for a water

supply service, namely physical and proximity access and availability as a continuous supply.

The indicator does not however monitor and report on availability of sufficient water from the supply and the acceptability of the supply.

Access to a drinking water supply by definition implies sufficient water to meet domestic needs, which is reliable and available close to home[7]. The UNECE and WHO (2013) defines access to safe drinking water as *effective* access to the services, whether or not access is ensured through connections to public networks or through private solutions[21]. As used in this document, access includes three of the five dimensions that are required under the human right to water, namely[23]:

1. Availability - requires there to be *sufficient* water and *continuous supply* of drinking water. In the South Africa context,
    - *Sufficient water* is the delivery of 25 litres per person per day from a source with a flow rate of not less than 10 litres a minute[22]
    - *Continuous supply* is one that ensure water is available on a regular, daily basis, for at least 350 days per year and not interrupted for more than 48 consecutive hours per incident. Supply should not be interrupted for more than one week per year[22].[22]
2. Accessibility - requires that the supply is *physically and proximally* accessibility[23]
3. Acceptability: water supply should taste, smell and look acceptable to an individual[22]

Indicator 6.1.1 already monitors and reports all three of these elements of access to an improved water supply services, namely:

- physical and proximal accessibility – measured by the "access to an improved water supply" and the "within the yard, house or plot" criteria of SDG 6.1.1.
- acceptability – measured by the "free from contamination" criteria of SDG 6.1.1., assuming water which meets potability requirements would be acceptable to an individual. An aesthetics component could also be utilised for this criteria.
- availability (continuous supply) – measure by the "available when needed" criteria of an safely managed water supply

The GHS is already collecting the data for:

- physical and proximal accessibility – type of drinking water supply (i.e. "access to an improved water supply") and the distance to water supply ("within the yard, house or plot") criteria of SDG 6.1.1.
- acceptability – perception of the quality of water provided to a household (i.e. proxy for "free from contamination") and the aesthetics of the water provided.
- Availability (continuous supply) – interruption of water supply in the past 6 months and interruption for longer than 2 consecutive days ("available when needed")

Not all this GHS data is currently included in the 'safely managed water supply" criteria but these should progressively be added to the reporting of the sustainability of water supply services in South Africa.

A gap in the current monitoring and reporting is that of whether the safely managed water supply is providing *sufficient water.* In the South African legislative context this would require the drinking water supply to delivery 25 litres per person per day from a source with a flow rate of not less than 10 litres a minute[22].

The GHS currently does not capture this element and would require the development of additional tools and methods to be able to monitor and report this element in future.

[21] UNECE AND WHO, 2013. The Equitable Access Score-card. Supporting policy processes to achieve the human right to water and sanitation. United Nations Publication: Geneva

[22] DWAF (1994). Water supply and sanitation White Paper. Government Printers, Pretoria, South Africa

[23] UN SPECIAL RAPPORTEUR (2014). UN Special Rapporteur on the human right to safe drinking water and sanitation. [Online]. Available: http://www.zaragoza.es/ciudad/medioambiente/onu/en/detallePer_Onu?id=735

5.5 MONITORING SAFELY MANAGED WATER SUPPLY SERVICES

SDG Indicator 6.1.1 already comprehensively monitors and reports the 'safely managed' criteria of SDG Target 6.1 through the requirement that a safely managed water supply service be free of faecal contamination. For the indicator, levels of *E. co*li in 100 ml is used to monitor whether an improved water supply service is safe.

The indicator does not however report all the 'safely managed' criteria of SDG Targets 6.1. To meet the target the water supply would need to be monitored for both microbiological and chemical contaminants. Safely managed water supply services should be free from faecal contamination AND elevated levels of chemical substances which have been prioritised by a country in their national standards, particularly arsenic and fluoride.

The SDGs recommend that each country choose water quality parameters which need to be added to the faecal contaminants, based on the situation and health priorities of the country. The country would then report these parameters as part of their reporting indicators related to SDG Target 6.1.

South Africa does currently require water quality data from water outlet point, but these are collected at a system or scheme level. Each Water Service Authority, as part of their Blue Drop Water Quality Monitoring programme are required to test a specified number of outlets within a water supply scheme to determine the quality of this water against water quality standards. The site and number of outlets which are tested are however limited.

South Africa, as part of the BDS, also requires each WSA to develop Water Safety Plans. The availability of a these plans, according to the UN Water, could be a proxy indicator that the outlets under the jurisdiction of the WSA would be providing water of a quality which meets national standards.

South Africa should progressively explore these and other means of reporting the 'safely managed' criteria of SDG Target 6.1.

5.6 MONITORING AFFORDABILITY OF SAFELY MANAGED WATER SUPPLY SERVICES

The affordability criteria of SDG Target 6.1 requires that *payment for services does not present a barrier to access to or prevent people from meeting basic human needs*.

The human rights to water and sanitation also place obligations on States to ensure that services are affordable.

The current *SDG indicator 6.1.1 proportion of population using safely managed drinking water services* does not monitor the "affordable" criteria of SDG Target 6.1.

The JMP together with the World Bank, academics and others are developing and testing indicators that would enable more systematic and consistent monitoring of affordability in the future[8]. Early recommendations for an indicator are that *the proportion of the household budget spent on water supply services* be utilise as a proxy indicator of affordability.

Compliance with national affordability indicators does not only required that indigent households have affordable access to drinking water but that an active policy is being implemented to this affect. Affordability is not only an economic and equity issue, it was also a social protection issue that required incorporating water and sanitation aspects within social policy discussions.

The South Africa water policy (1994) mandates that everyone in the country has the right to a basic amount of water that is affordable. A Water Services Authority is mandated to develop and implement a Free Basic Water Policy to this effective. The availability of free basic water to indigent households in the country could be utilised as a proxy indicator for the 'affordability' criteria of SDG Target 6.1.

AMCOW also currently include an affordability, which South Africa is expected to monitor and report, namely Indicator *I-6.2a: Degree of implementation of equitable and efficient water supply and wastewater tariffs*. This indicator could be utilised by the country to monitor the affordability criteria of SDG Target 6.1 in future.

South Africa can progressively add affordability sub-indicators to SDG Target 6.1 as monitoring of these become relevant and simple methodologies for this purpose have been developed. Appendix 2 provides the preliminary metadata required to report these indicators in future.

The following indicators, to address the 'affordability' criteria of SDG Target 6.1, are recommended for inclusion in the Water Supply Service Monitoring Framework for South Africa:

Affordability indicators for SDG6.1.	
Household Expenditure Indicator	Proportion of the household budget spent on water supply services
Household Tariffs Indicator	I-6.2a: Degree of implementation of equitable and efficient water supply and wastewater tariffs.
Household Equity Indicator	Implementation of a free basic water supply service policy

6 SUMMARY OF THE ESTIMATED BASELINE FOR WATER SUPPLY SDG INDICATORS

Based on the 2016 GHS data, which is assumed to provide a baseline for SDG Target 6.1, Figure 26 shows progress with the normative criteria of the Target. It is clear that there is disparity in the levels of individuals using safely managed water supplies based on settlement, age and gender. Individuals in rural households are the least likely to have access safely managed water supplies, followed by individuals in child-headed households, individuals in aged headed households and finally individuals in females headed households. The elements which demonstrate the highest levels of the population using safely managed water supplies are individuals living in male-headed households and individuals living in urbans areas. Hence, the sub-groups which have benefits most from access to safely managed water supplies are individuals which live in male-headed households in the urban areas of the country.

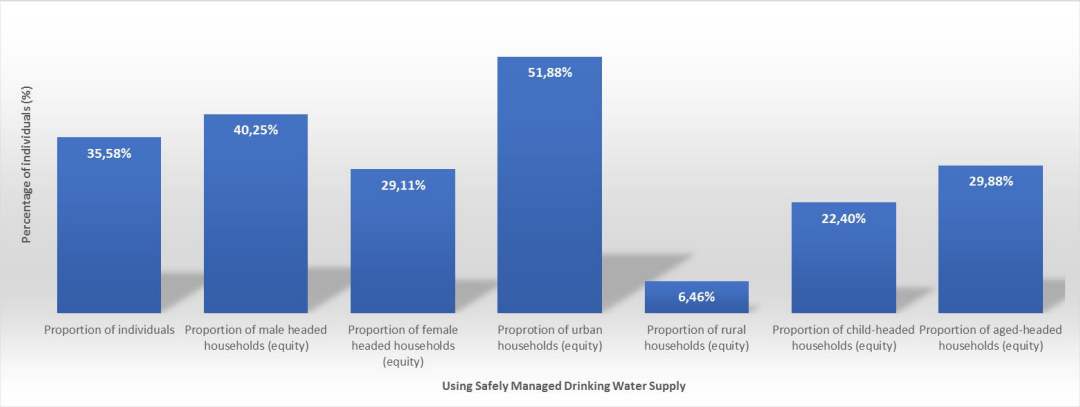

Figure 26: South Africa's baseline in addressing the various elements of SDG Target 6.1. (Source: various)

Demonstrating progress in a Table format, Table 4 shows a baseline for SDG Target 6.1.

Table 4: South Africa's baseline (2016) in addressing the normative elements of SDG Target 6.1

Criteria	Normative interpretation of SDG Target 6.1					
By 2030, achieve universal	**Implies all exposures and settings, including households, schools, health facilities, workplaces and public spaces**					
	Population using SMWSS	Schools using Basic Water Supply Services	Health Facilities using Basic Water Supply Services	Workplaces using SMWSS	Public spaces using SMWSS	
	35,58%	78,01%	Data currently not available	Data currently not available	Data currently not available	
And equitable	**Implies progressive reduction and elimination of inequalities among population subgroups**					
	Population in Rural areas using SMWSS	Population in Urban areas using SMWSS	Individuals in Female-headed Households using SMWSS	Individuals in Male-headed Households using SMWSS	Individuals in Child-headed Households using SMWSS	Individuals in aged-headed Households using SMWSS
	6,46%	51,88%	21,11%	40,25%	22,04%	29,88%
Access	**Implies sufficient water to meet domestic needs is reliable available close to home**					
	Data not currently available for the "sufficient" criteria but the 'on the premises' and 'available when need' criteria of a safely managed water source capture the 'available close to home' criteria of access. Hence the GHS to report some of the component of this criteria					
To safe	**Safe drinking water is free from pathogens and elevated levels of toxic chemicals at all times**					
	See 'by 2030, achieve universal" above – SMDWSS requires water to meet pathogen standards Data not currently available to report the toxic chemicals element					
An affordable	**Payment for services does not present a barrier to access to or prevent people from meeting basic human needs**					
	Data not currently available to report the affordability criteria					
Drinking water	**Water used for drinking, cooking, food preparation and personal hygiene**					
	Assumed to be part of SMWSS					
or all	**Suitable for use by men, women, girls and boys of all ages, including people with disabilities**					
	See 'and equitable' element above