



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



The Determination of Resource Quality Objectives (RQOs) in the Mokolo, Matlabas, Crocodile (West) & Marico Catchments

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- **Defining Resource Quality Objectives (RQOs)**
- **Process of Determining RQOs & Progress to date**
- **Components and Indicators**
- **Stakeholder Engagement**

Background

- **RQO Study was initiated in March 2016**
- **Concludes in September 2017**
- **Output: Resource Quality Objectives:** expressed as numerical limits or narratives for the protection of water resources
- **Water Resource Classes (2013) and RQOs will be gazetted once approved by the Director- General.**

INTRODUCTION TO RESOURCE QUALITY OBJECTIVES

- The NWA requires:
 - ***Classification of water resources:*** Prepared in accordance with the Water Resource Classification System.
 - ***Resource Quality Objectives:***
 - *Defines the goals to achieve the Water Resource Class, numerically and as narratives.*
 - ***Ecological Reserve*** provides for ecological requirements



RESOURCE QUALITY OBJECTIVES (RQOs):

➤ In essence:

- ❑ RQOs are the objectives or goals which can be measured or monitored to determine whether the Water Resource Class is being achieved.



RESOURCE QUALITY OBJECTIVES (RQOs):

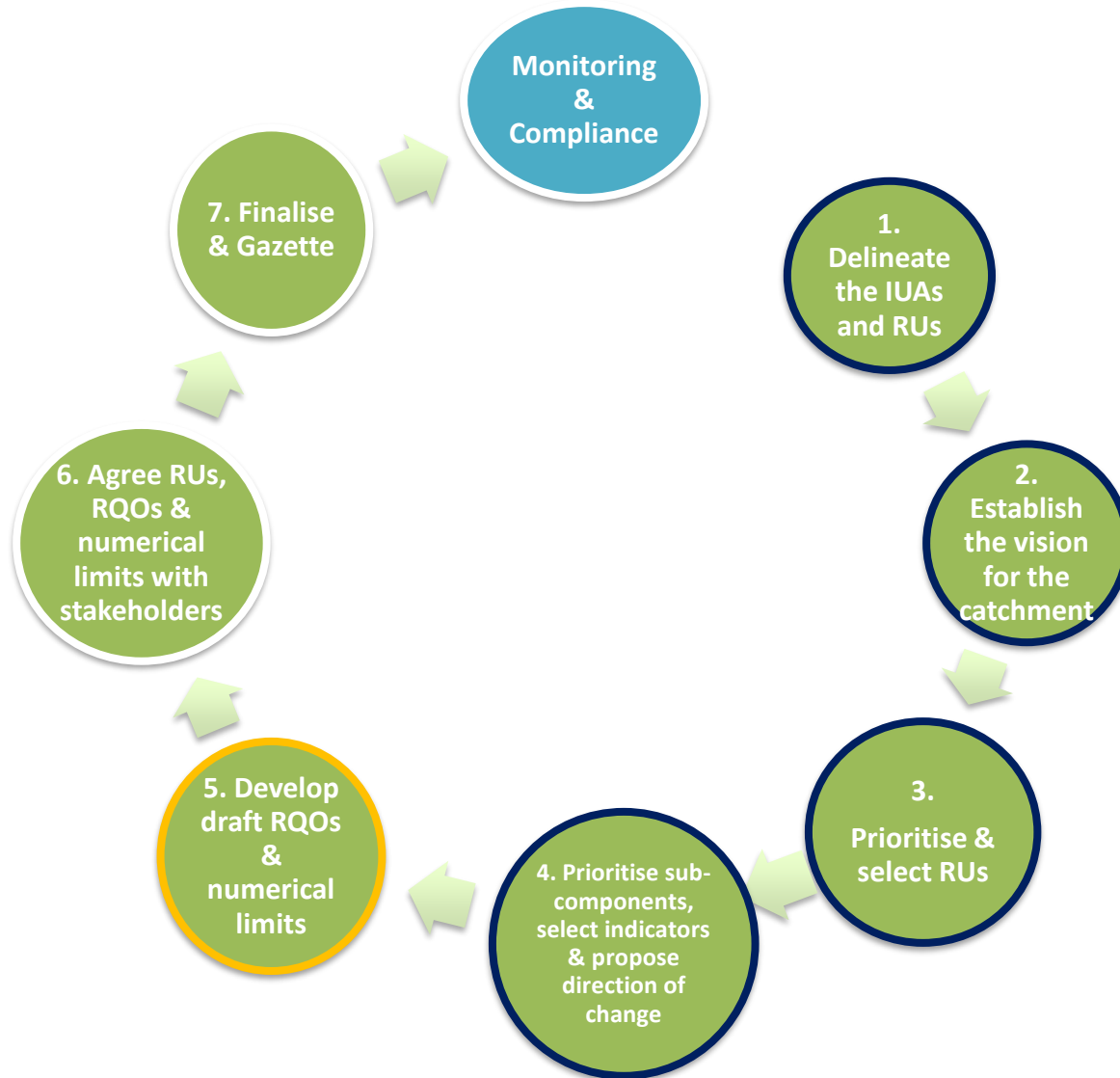
➤ RQOs can be **numerical and/or descriptive statements** and may relate to the:

- ❑ what the **quantity** of the water should be (water level, pattern, timing)
- ❑ what the water **quality** should be (physical, chemical and biological)
- ❑ what the **condition of the instream and riparian** (river bank) habitat should be
- ❑ what the **condition of the aquatic** (water) animal and plant life should be.



Process of Determining Resource Quality Objectives & Progress to date

RQOs 7-STEP PROCEDURE



➤ **Determined for surface water and groundwater resources:**

- ❑ **Rivers**
- ❑ **Dams**
- ❑ **Wetlands**
- ❑ **Groundwater**



RESOURCE UNITS

- **82 resource units** delineated
 - for the Mokolo, Matlabas, Crocodile (West) and Marico catchments
 - 61 RUs – rivers, groundwater priority areas and priority wetlands/wetland clusters
 - 21 dam RUs
- **74 resource units** were prioritised for the setting of RQOs



FOR WHICH COMPONENTS AND INDICATORS ARE RQOs SET?

COMPONENTS AND SUB COMPONENTS (RIVERS, DAMS, WETLANDS)

WATER QUANTITY

- High Flows
- Low Flows

WATER QUALITY

- Nutrients
- Salts
- System Variables
- Toxics
- Pathogens

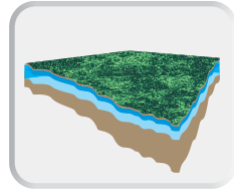
HABITAT

- Instream Habitat
- Riparian Habitat

BIOTA

- Fish
- Aquatic and Riparian plant species
- Mammals
- Birds
- Periphyton
- Aquatic Invertebrates
- Diatoms

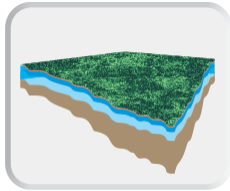
COMPONENTS AND SUB COMPONENTS (GROUNDWATER)



Measurable parameters including:

- **Quantity (Abstraction),**
- **Aquifer Water Level,**
- **Water Quality, and**
- **Protection Zones (related to a localised borehole as a means of protecting the basic human needs and the ecological Reserve).**

COMPONENTS, SUB COMPONENTS, INDICATORS GROUNDWATER



Quantity	Water Level - Depth to groundwater level
	Time series water level monitoring (Monthly)
Quantity	Abstraction - Abstraction rate (Volume; Q)
	Continuous Flow measurement at Eye
Quality	Nutrients - Nitrate
	Salts - Electrical Conductivity
	Toxics – trace metals
Protection Zone	Radius of influence (r)
	Distance from river (L)
	Distance from wetland (L)

Stakeholder Engagement

- 1st Specialist workshop (22-24 August 2016)
- 1st round PSC meetings (27 & 28 September 2016)
- Meeting with Marico River Conservation Association (10 November 2016) – on request
- Meeting with the Steenkoppies Aquifer Water User Association (12 December 2016) – on request
- 2nd Specialist workshop (01-02 February 2017)
- 2nd round PSC meetings (28 February 2017 & 01 March 2017)
- Forum meetings

Planned Activities

- Make the draft RQOs report available for stakeholder comment: (10 March 2017)
- Public meeting (May 2017)

Issues and Responses Register is available on DWS website

<http://www.dwa.gov.za/rdm/WRCS/default.aspx>

THANK YOU!

Estuaries



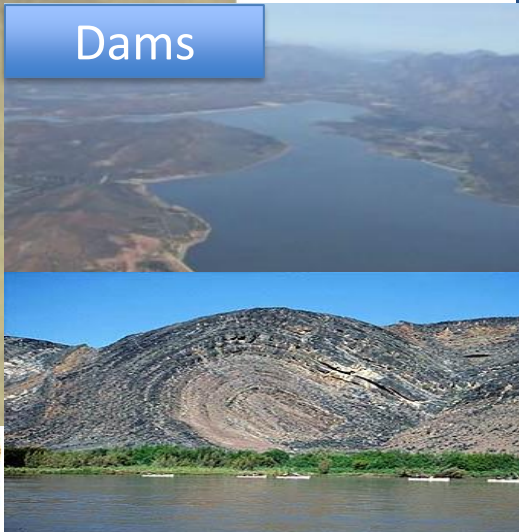
Rivers



Wetlands



Dams



WATER
DOESN'T
COME FROM
A TAP.

Groundwater



Conserve

