



## 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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# Content

- **Background**
- **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):

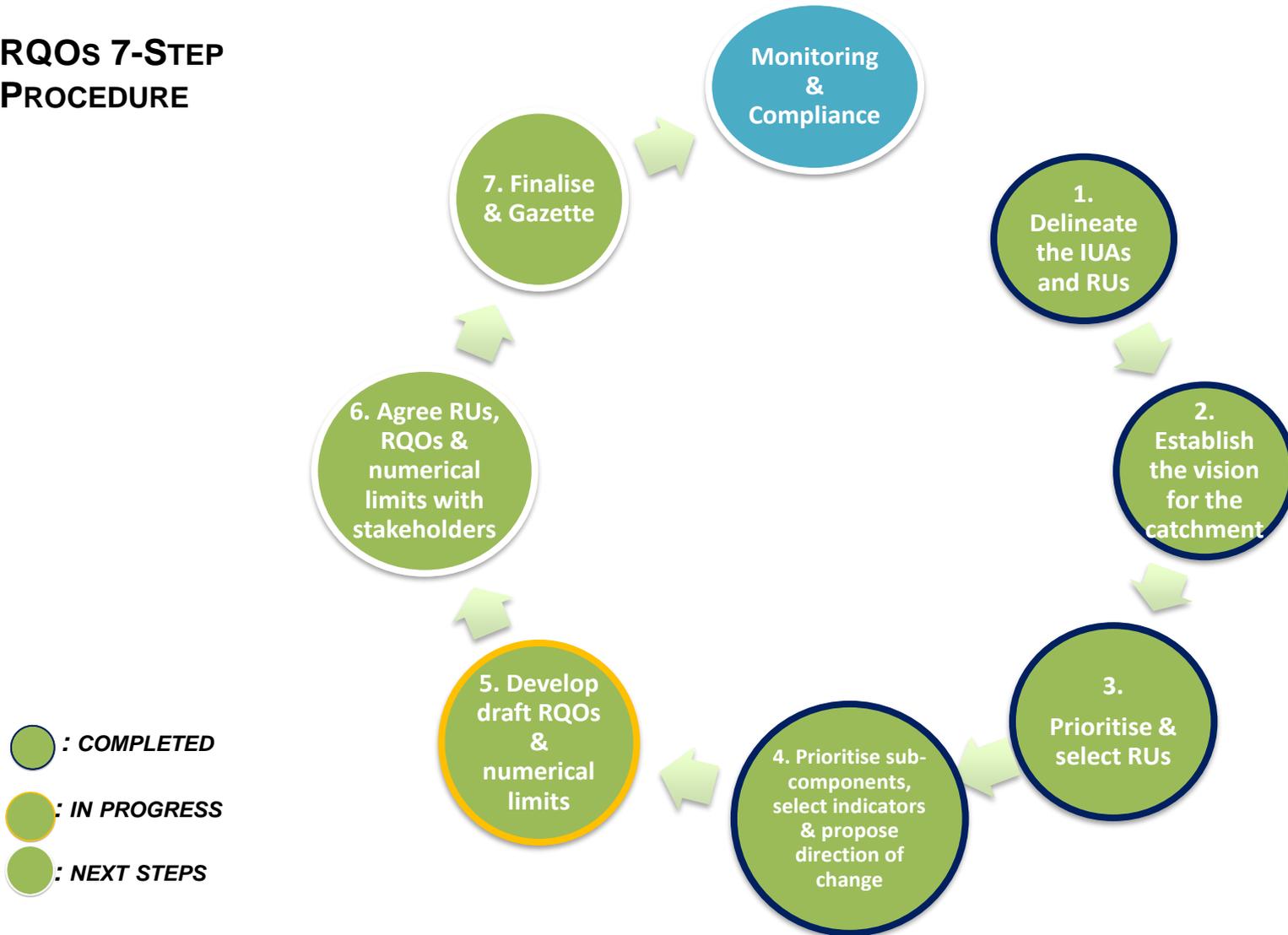
➤ RQOs can be **numerical and/or descriptive statements** and may relate to the:

- ❑ 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

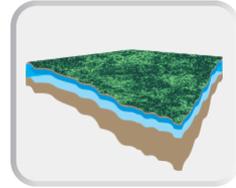
## HABITAT

- Instream Habitat
- Riparian Habitat

## BIOTA

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

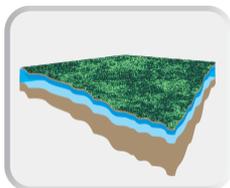
# COMPONENTS AND SUB COMPONENTS (GROUNDWATER)



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

- 1<sup>st</sup> Specialist workshop (22-24 August 2016)
- 1<sup>st</sup> 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
- 2<sup>nd</sup> Specialist workshop (01-02 February 2017)
- 2<sup>nd</sup> 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



Groundwater



Dams



**WATER  
DOESN'T  
COME FROM  
A TAP.**

**Conserve**

