water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

2030 NDP
NATIONAL DEVELOPMENT PLAN
Our Future - make it work

Eutrophication Management Strategy for South Africa

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ACKNOWLEDGEMENT

The following individuals and committees are thanked:

▶ Project management

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▶ DWS project Technical Task Team (TTT): Policy and Strategy development

▶ DWS drafting team, specialist support and capacity building

▶ DWS Regional Office Champions

▶ DWS Project Management Committee (PMC)

▶ Project Steering Committee (PSC)

▶ External Reviewers of the Eutrophication Management Strategy for South Africa

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PART 1

THE SOUTH AFRICAN CONTEXT

Where are we?

PART 2

EUTROPHICATION MANAGEMENT POLICY FOR SOUTH AFRICA

What do we want to achieve?

PART 3

EUTROPHICATION MANAGEMENT STRATEGY FOR SOUTH AFRICA

How should we achieve it?

PART 4

THE WAY FORWARD

Towards action?

Addressing eutrophication in South Africa

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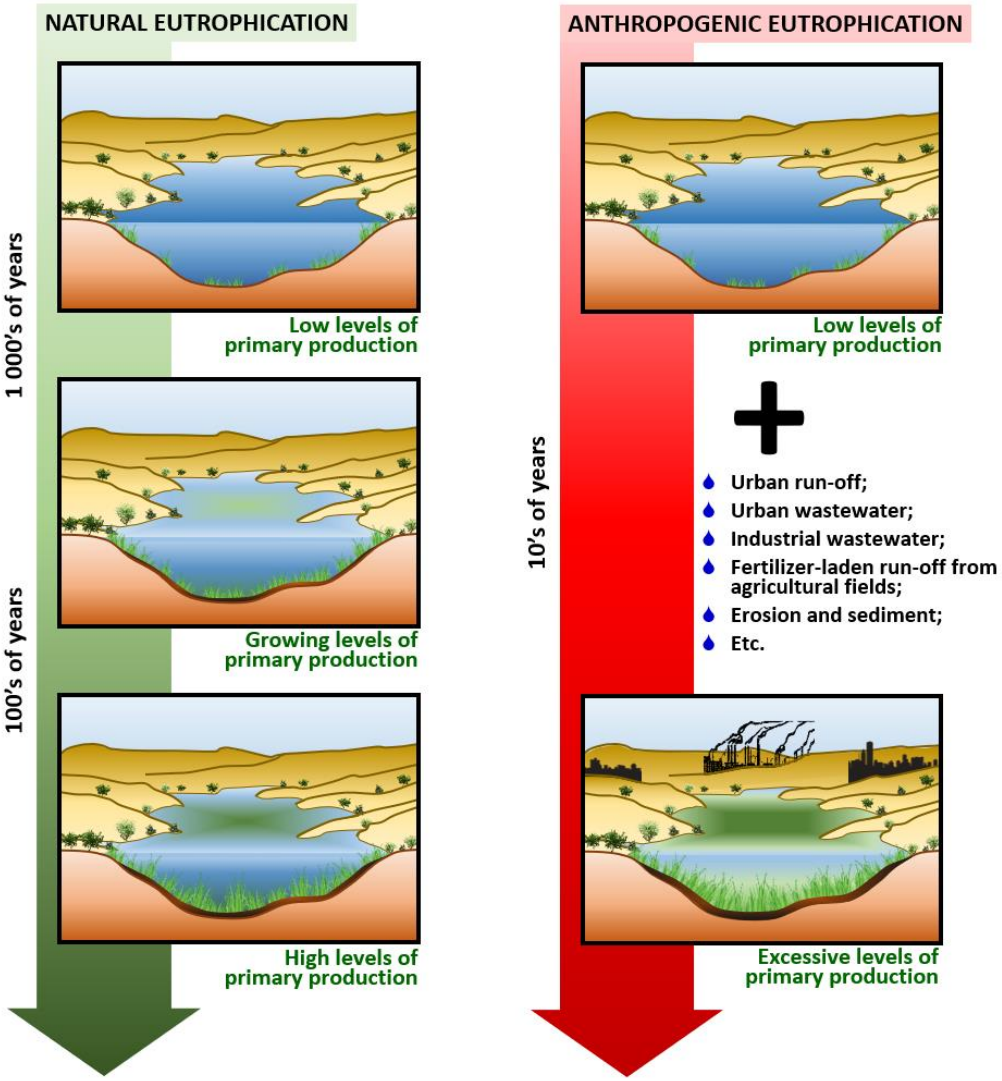
THE SOUTH AFRICAN CONTEXT

EUTROPHICATION IS THE PROCESS OF…

"… nutrient enrichment of waters, which results in the stimulation of an array of symptomatic changes, amongst which increased production of algae and aquatic macrophytes, deterioration of water quality, and others found to be undesirable and to interfere with water users".

Organisation for Economic Cooperation and Development [OECD, 1982]

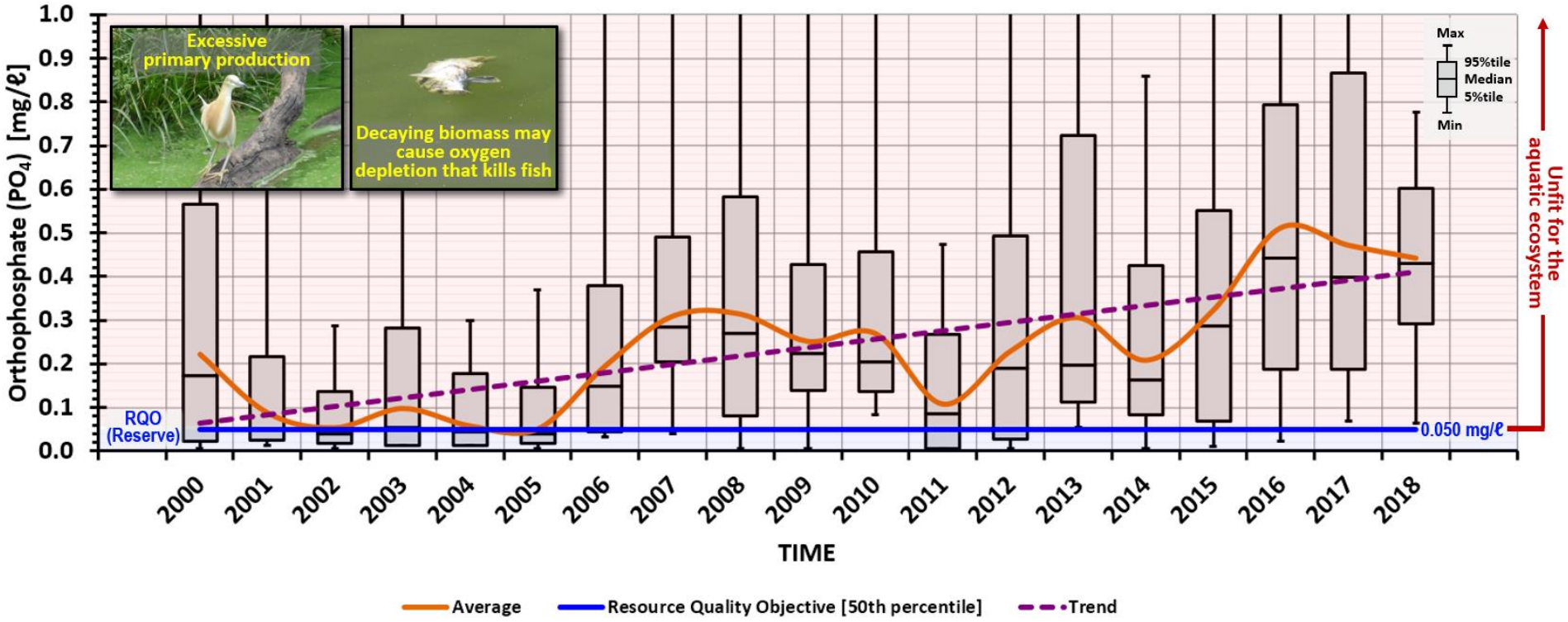
TWO TYPES OF EUTROPHICATION



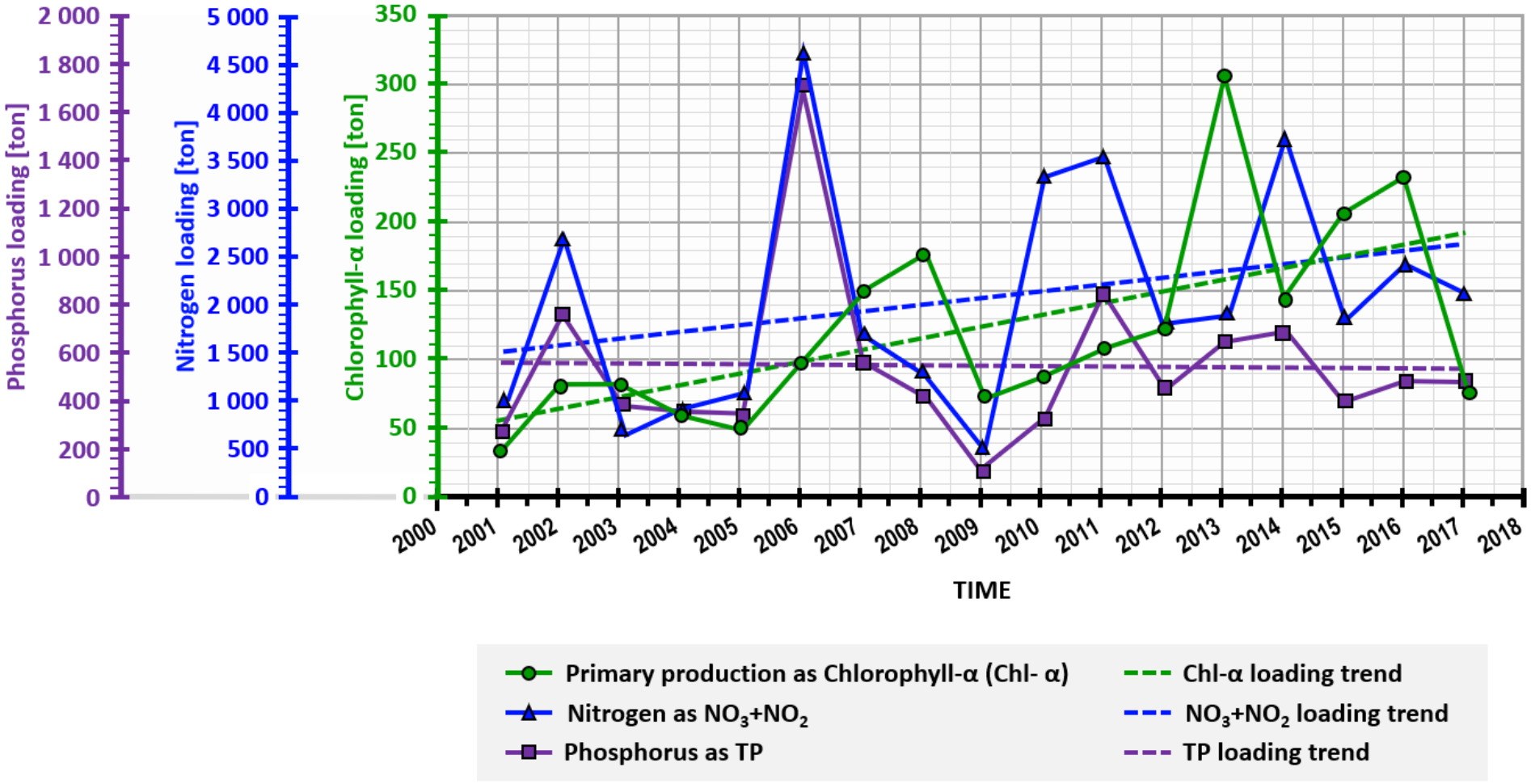
POINT AND DIFFUSE SOURCES OF NUTRIENTS IN A CATCHMENT

EXAMPLE OF A CAUSAL CHAIN FOR PHOSPHORUS-LOADING

COMPLIANCE TO THE RESERVE IN THE HARTBEESPOORT DAM



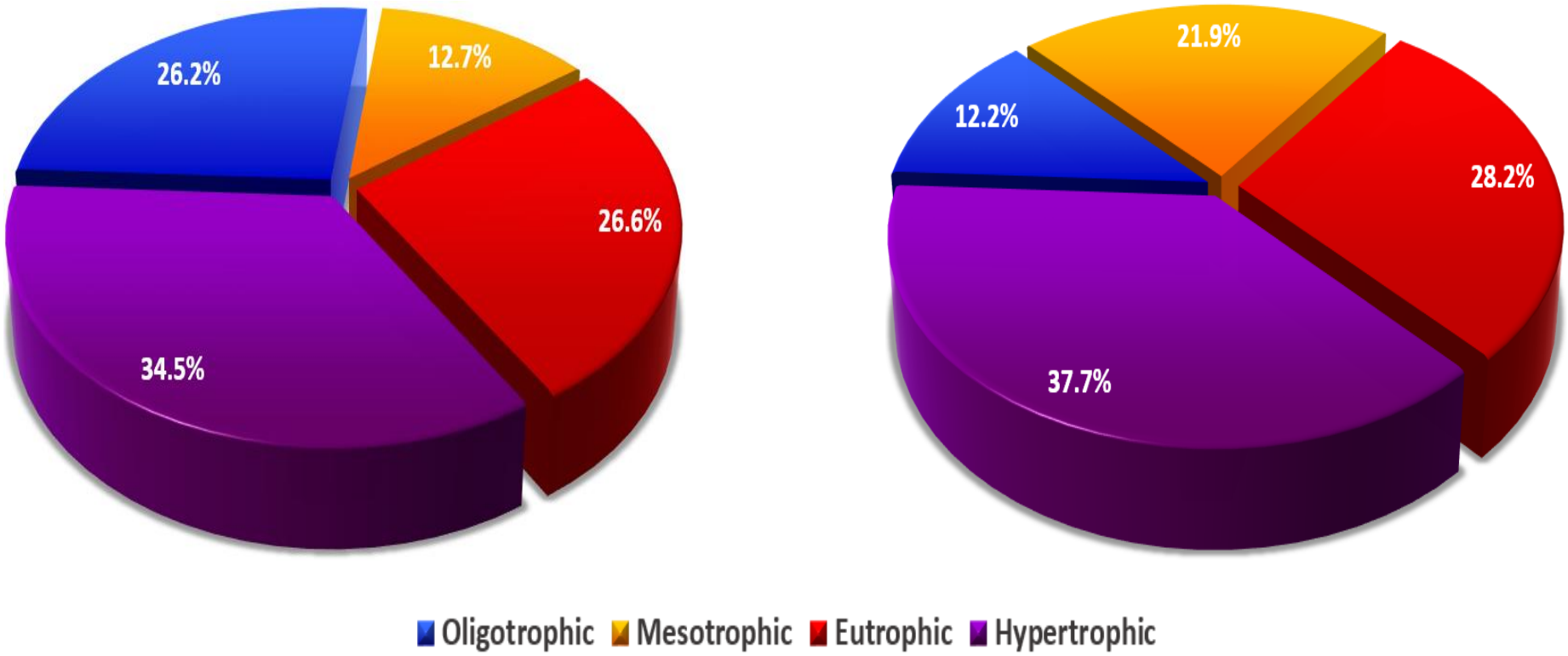
ANNUAL P & N LOADING OF 6x SA DAMS



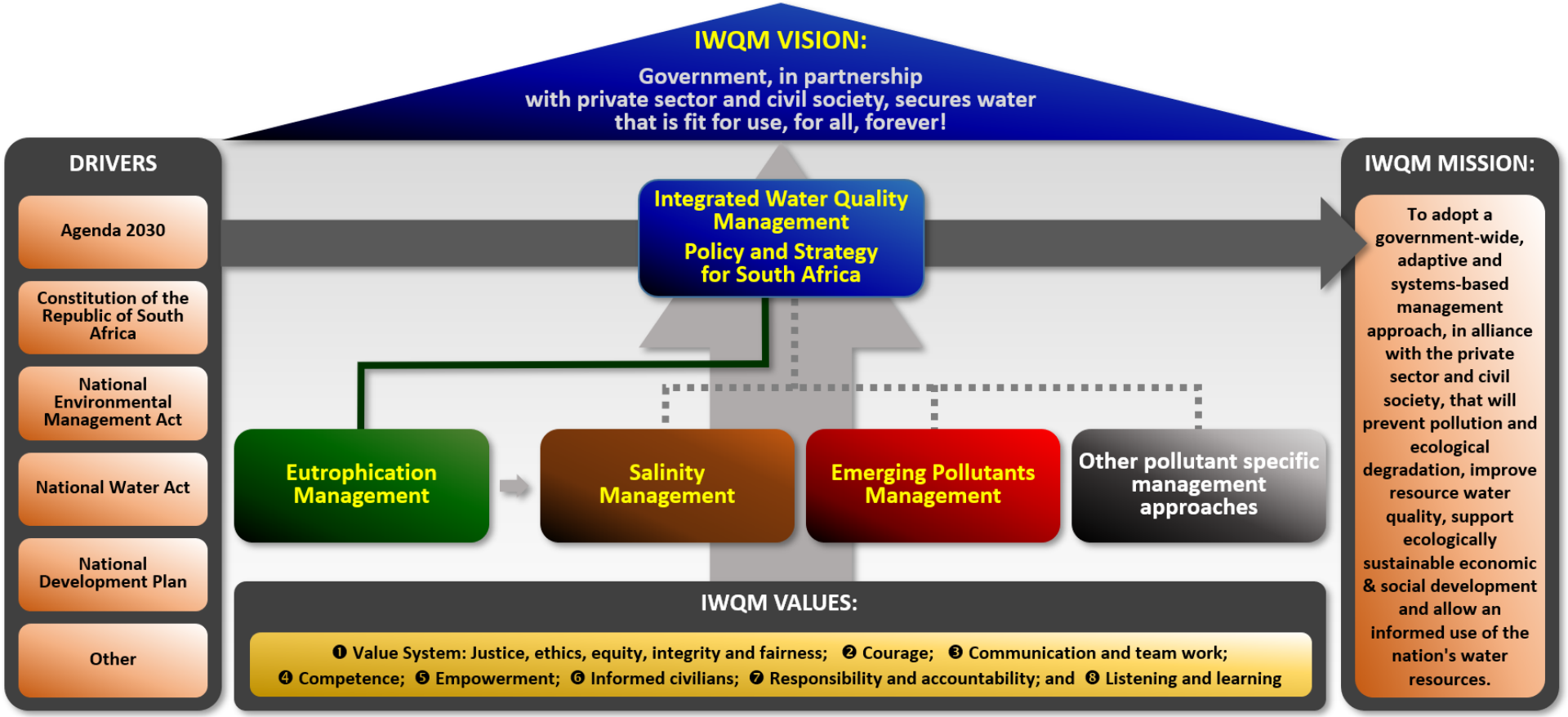
Average annual P load of ~600 tons & N load of ~2 000 tons across the six large dams

EUTROPHICATION CONSTITUTES A SIGNIFICANT CHALLANGE

1 October 2016 to 30 September 2017 → **1 October 2019 to 30 September 2020**



IWQM POLICY AND STRATEGY FOR SOUTH AFRICA



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EUTROPHICATION MANAGEMENT POLICY

POLICY OUTLINE

Vision: Government, in partnership with private sector and civil society, secures water that is fit-for-use, for all, for ever!

Mission: To adopt a government-wide, adaptive and systems-based management approach, in alliance with the private sector and civil society, that will improve resource water quality, prevent pollution and ecological degradation, support ecologically sustainable economic & social development and allow an informed use of the nation's water resources.

Goal: To manage eutrophication effectively in order to protect aquatic ecosystems and secure water resources that are fit-for-use.

CHIEF OBJECTIVES:

- To limit anthropogenic nutrient-loading of water resources;
- To reduce excessive primary production in surface water resources;
- To protect aquatic ecosystems and their biological diversity;
- To secure water resources that are fit-for-use on a continuous basis; and
- To support ecologically sustainable development and justifiable socio-economic growth.

POLICY STATEMENTS 1 to 14

COMPLEMENTING OBJECTIVES:

- To appropriately resource eutrophication management, *inter alia*, by securing funding, providing human capital and equipping responsible parties;
- To promote research in relation to the management of eutrophication and the control of anthropogenic sources of nutrient enrichment;
- To promote transparency through eutrophication-related communication and awareness creation;
- To facilitate technical capacity building and the empowerment of role-players; and
- To promote internal and external management cooperation between government, private sector and civil society.

POLICY STATEMENTS 15 to 19

POLICY STATEMENTS

STATEMENT #	POLICY STATEMENT	STATUS
Policy statements in support of the Chief Objectives for eutrophication management		
POLICY STATEMENT 1	Application of management instruments for environmental compliance in eutrophication management	New
POLICY STATEMENT 2	The Mitigation Hierarchy for decision-making on eutrophication	Existing
POLICY STATEMENT 3	The Differentiated Approach for the control of excessive nutrient-loading	Existing
POLICY STATEMENT 4	The application of the Precautionary Principle	Existing
POLICY STATEMENT 5	The Receiving Water Quality Objectives Approach applied to eutrophication management	Existing
POLICY STATEMENT 6	A life cycle view on nutrient-loading	New
POLICY STATEMENT 7	Incentive-based regulation	Existing
POLICY STATEMENT 8	Nature-based solutions	New
POLICY STATEMENT 9	The application of the Best Practicable Environmental Option	New
POLICY STATEMENT 10	Holistic eutrophication management	New
POLICY STATEMENT 11	Eutrophication management responsibility and accountability	New
POLICY STATEMENT 12	Monitoring	Existing
POLICY STATEMENT 13	Information management	Existing
POLICY STATEMENT 14	Water resource assessment and planning to inform decision-making	Existing
Policy statements in support of the Complementing Objectives for eutrophication management		
POLICY STATEMENT 15	Resourcing of eutrophication management	New
POLICY STATEMENT 16	Promotion of eutrophication-related research	Existing
POLICY STATEMENT 17	Transparency	Existing
POLICY STATEMENT 18	Technical capacity to take eutrophication management action	Existing
POLICY STATEMENT 19	Cooperative eutrophication management	Existing

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EUTROPHICATION MANAGEMENT STRATEGY

STRATEGY OUTLINE

Goal: To manage eutrophication effectively in order to protect aquatic ecosystems and secure water resources that are fit-for-use.

CHIEF OBJECTIVES:

- To limit anthropogenic nutrient-loading of water resources;
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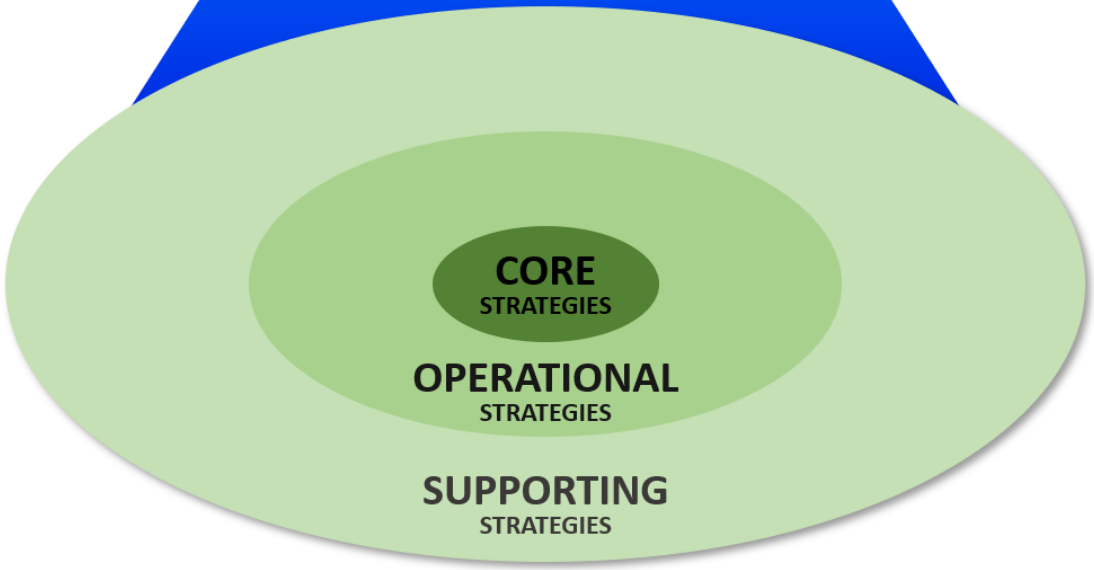
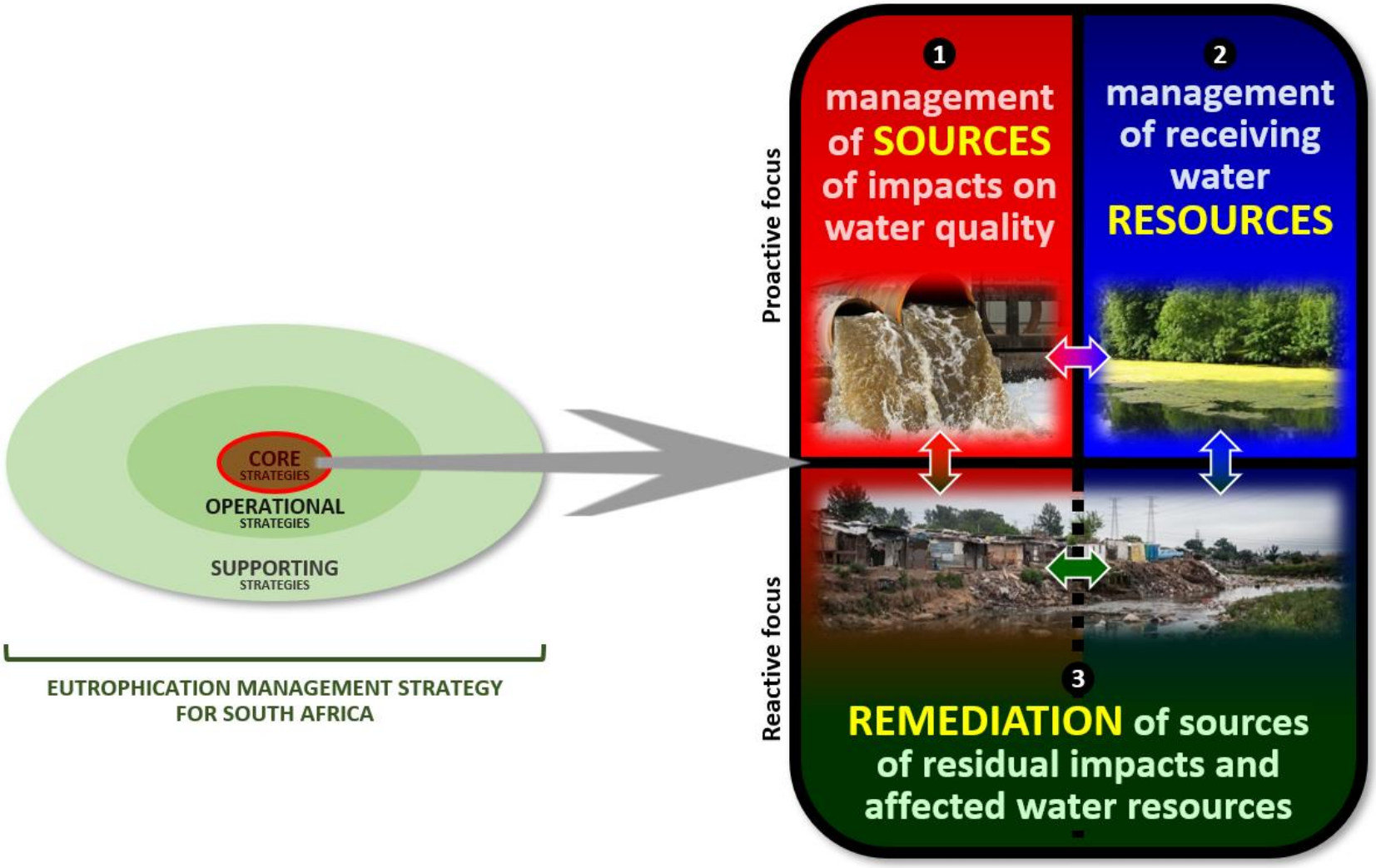
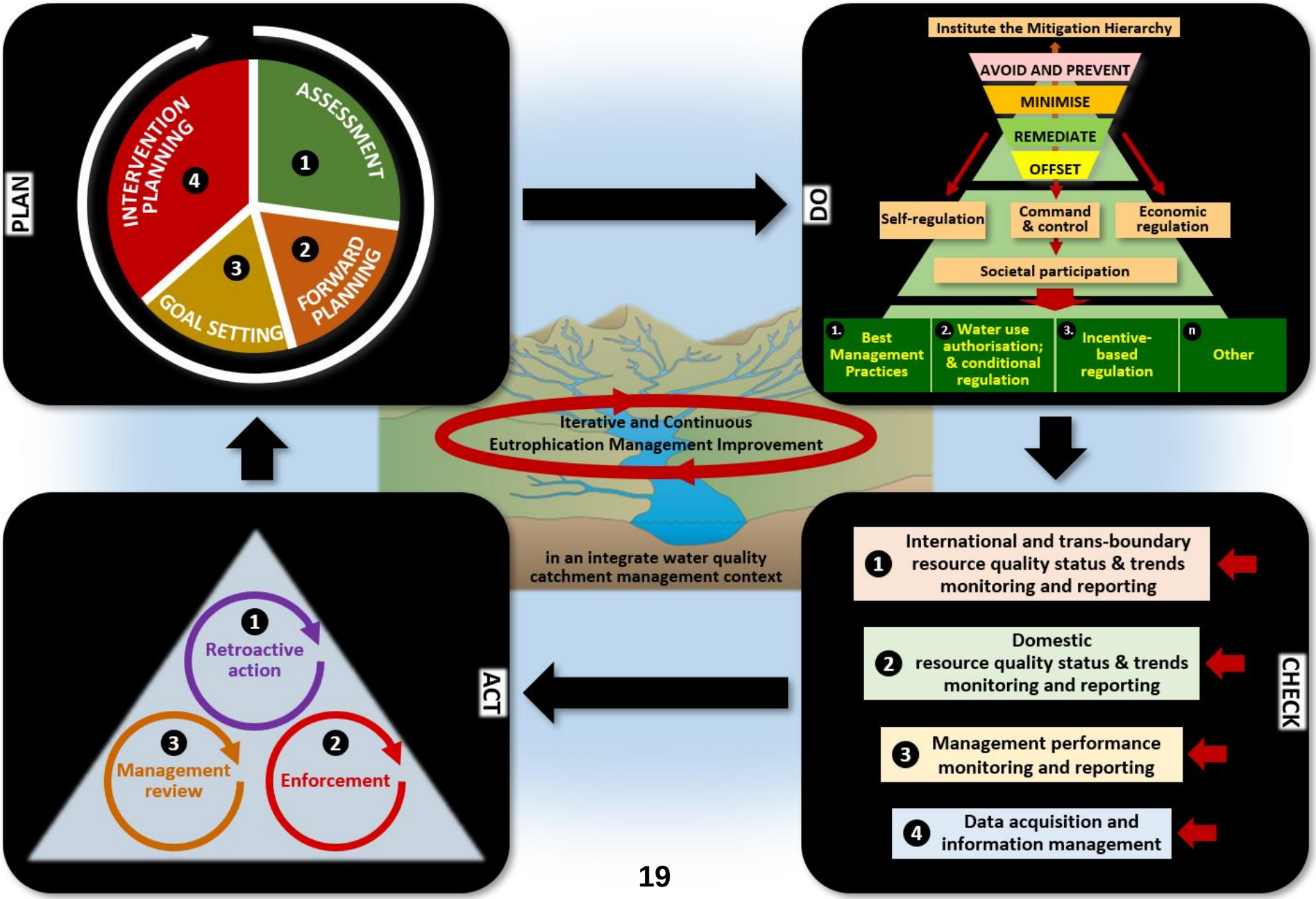


EUTROPHICATION MANAGEMENT STRATEGY FOR SOUTH AFRICA

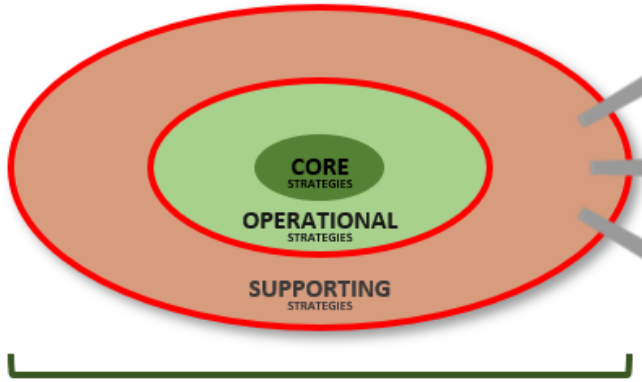
CORE STRATEGIES FOR EUTROPHICATION MANAGEMENT



OPERATIONAL STRATEGIES FOR EUTROPHICATION MANAGEMENT



SUPPORTING STRATEGIES FOR EUTROPHICATION MANAGEMENT



EUTROPHICATION MANAGEMENT STRATEGY FOR SOUTH AFRICA

1. Technical capacity building to give impetus to eutrophication management
2. Research and technology development to address eutrophication-related challenges
3. Collaboration and management participation

STRATEGIC ACTIONS TO STRENGTHEN EUTROPHICATION MAMAGEMENT

Eutrophication Management Strategies	Strategic Actions
CORE STRATEGIES	
Source Directed Management	7
Resource Directed Management	4
Remediation Directed Management	8
Total	**19**
OPERATIONAL STRATEGIES	
Plan Stage	6
Do Stage	21
Check Stage	19
Act Stage	12
Total	**58**
SUPPORTING STRATEGIES	
Technical Capacity Building	9
Research and Technology Development	11
Collaboration and Management Participation	8
Total	**28**
Grand Total	**105**

SOME OF THE PRIORITY AREAS TO BE ADDRESSED

- ✓ Addressing **non-compliance of WWTWs** to the **phosphorus standard of 1 mg/ℓ** orthophosphate;
- ✓ Feasible and appropriate **Waste Discharge Standards (WDSs)** should be developed and implemented;
- ✓ The **Receiving Water Quality Objectives Approach must be operationalised** - calculation of Total Maximum Daily Loads (TMDLs) for dams;
- ✓ The **Waste Discharge Charge System (WDCS)** must be implemented to give effect to the polluter-pays principle and to incentivise nutrient load reduction;
- ✓ The role and feasibility of technology to treat nutrient-laden wastewater should inform processes to improve eutrophication management. **The Best Practicable Environmental Option (BPEO)** should be implemented;
- ✓ **Compliance monitoring and enforcement** must be intensified to deal with unlawful and non-complying water uses;
- ✓ Better **cooperation with government, private sector and civil society roll-players** needs to be put into action;
- ✓ The **introduction of zero-phosphate detergents** into South Africa should be pursued, linked to consumer education; and
- ✓ The **rehabilitation and restoration of affected water resources**, including the implementation of bio-remediation initiatives in dams should be supported.

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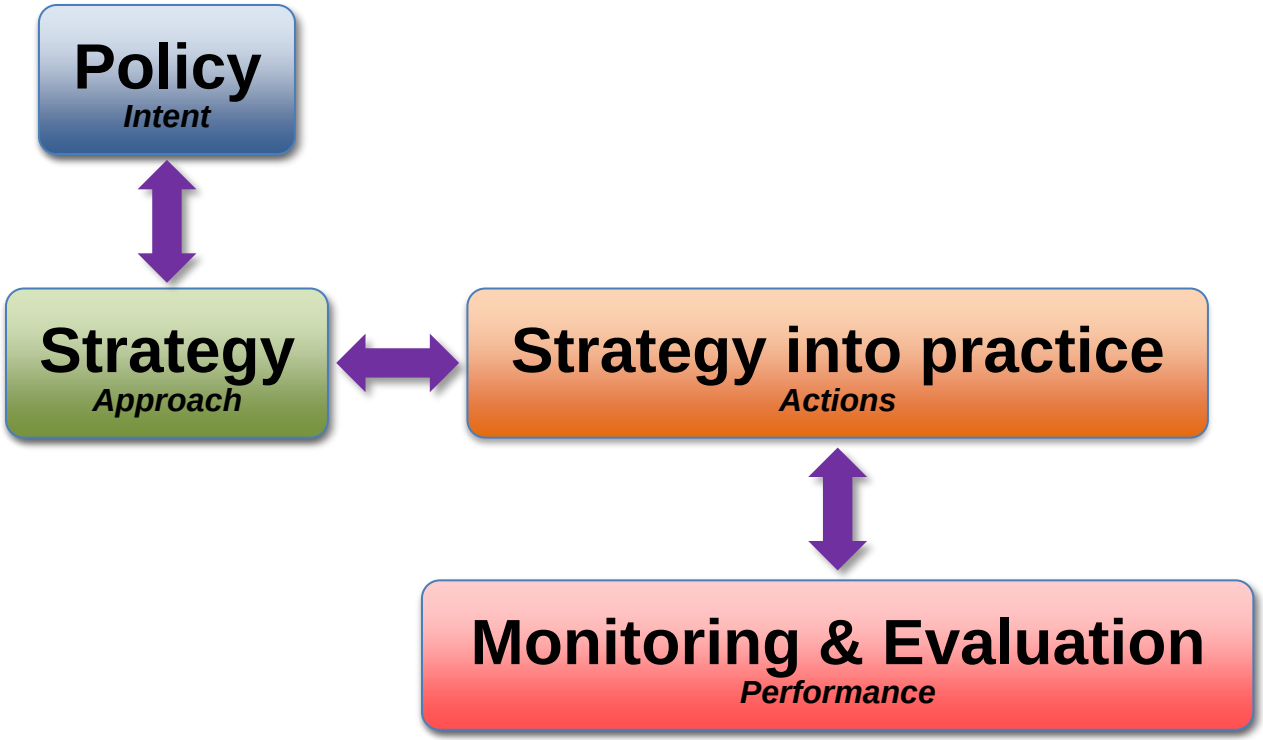
THE WAY FORWARD

STRATEGY INTO PRACTICE



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MORE INFORMATION

More information on the:

Eutrophication Management Strategy for South Africa

can be accessed on DWS Website: **https://www.dws.gov.za/RDM/SDCCO.aspx**

THE END

THANK YOU!