

# Sustainability of water ecosystems – seeking the balance through resource directed measures (RDM)

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# Presentation outline

- 💧 RDM overview & progress since 1998 NWA
  - 💧 Reserve determinations
  - 💧 Water resources classification
  - 💧 Setting of resource quality objectives
- 💧 Operationalising RDM – an integrated approach
  - 💧 RDM interfacing with source directed controls (SDC)
  - 💧 Collective understanding of key integrated water resource (IWRM) elements
  - 💧 Implementation in both phased and concurrent manner
- 💧 Concluding remarks

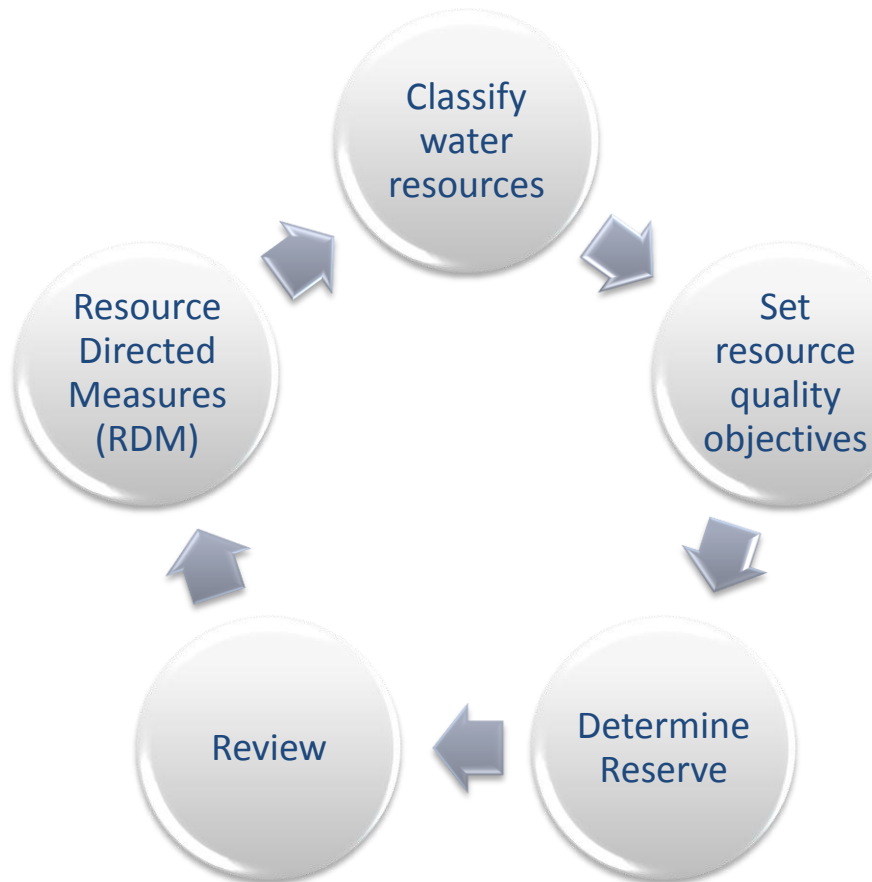


# Background to RDM

- 💧 DWA supporting various EWR studies since pre-1998 mainly through WRC
- 💧 Environmental studies component part of Civil Design directorate - mainly as result of EIA procedures - which formed part of water resource planning projects
- 💧 RDM related studies continued through DWA's SES directorate in 1998 onwards
- 💧 RDM directorate established towards end of 2002 comprising of three staff members
- 💧 Mandate – chapter 3 of the NWA – develop, implement & improve policies, strategies & guidelines for classification of WR, determine Reserve & set RQOs
- 💧 Developed into chief directorate (2005) with approx 43 staff members to date – though still understaffed
- 💧 Resulting institutional arrangements of three directorates – makes provision for focused attention wrt. classification of water resources, Reserve requirements and RDM compliance



# Contextualising RDM



RDM procedural and technical context – gazette system, classify, establish RQOs, determine Reserve.

Phased implementation not necessarily following this sequence.

Prelim. Reserve, prelim. Class, RQOs (1999).

Prelim. Reserve scenarios, prelim. Class, select Reserve scenario, RQOs (2001-2004).

Set Class of resource (through iterative process of generating Reserve scenarios), Set Reserve, RQOs (2005-2009).

WR classification regulations (2010) - set in motion a prescribed 7-step process: Delineate units of analysis & describe status quo;

Link the socio-economic & ecological values; Quantify ecological water requirements (EWR);

Determine ecologically sustainable baseline configuration scenarios;

Evaluate scenarios within IWRM process;

Evaluate scenarios with stakeholder; and

Gazette and implement class configuration.



# Progress on RDM

## 💧 Reserve assessments

- 💧 Several surface and groundwater water Reserve assessments (desktop, rapid, intermediate and comprehensive = 2679 - 06/11)
- 💧 Preliminary Reserve assessments legally binding once approved & must be given effect to as prescribed in NWA



## 💧 Classification of water resources

- 💧 Classification regulations gazetted & prescribed system to classify water resources in place
- 💧 Elements of classification considered in most high confidence preliminary Reserve assessments to date



## 💧 Setting of resource quality objectives

- 💧 Resource-specific conditions set as part of preliminary Reserve determinations
- 💧 Resource directed management of water quality management – management instruments



# Progress: Surface water Reserve assessments

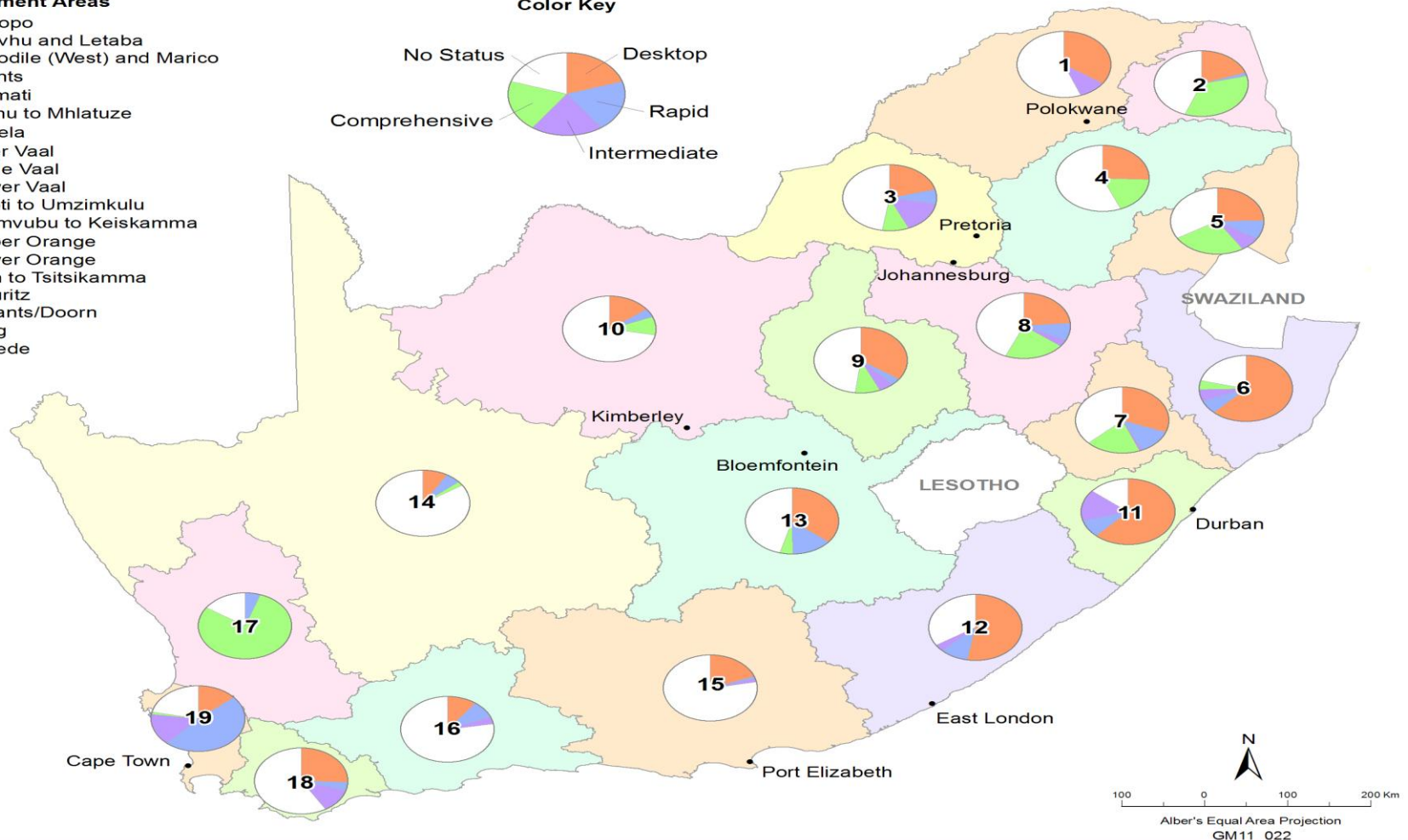
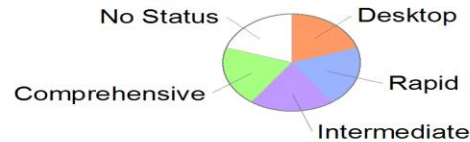
## LEGEND

- Major Cities

## Water Management Areas

- 1 Limpopo
- 2 Luvuvhu and Letaba
- 3 Crocodile (West) and Marico
- 4 Olifants
- 5 Inkomati
- 6 Usuthu to Mhlatuze
- 7 Thukela
- 8 Upper Vaal
- 9 Middle Vaal
- 10 Lower Vaal
- 11 Mvoti to Umzimkulu
- 12 Mzimvubu to Keiskamma
- 13 Upper Orange
- 14 Lower Orange
- 15 Fish to Tsitsikamma
- 16 Gouritz
- 17 Olifants/Doorn
- 18 Berg
- 19 Breede

## Color Key



Total (1467) = desktop (924), rapid (261), intermediate (116), comprehensive (166)



# Progress: Groundwater Reserve assessments

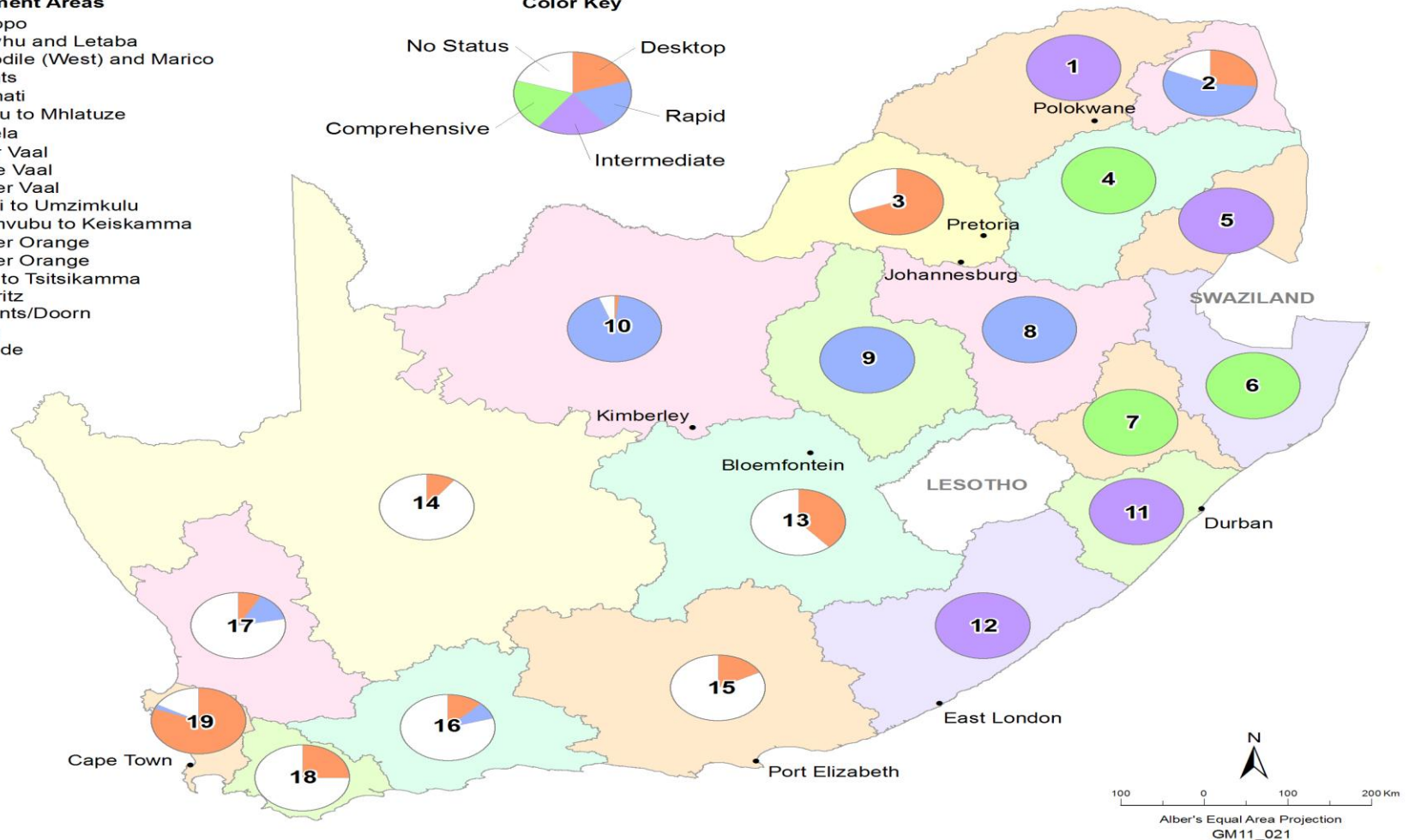
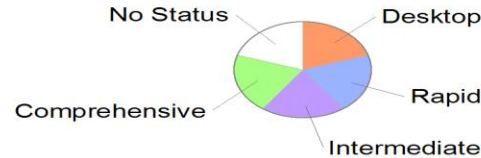
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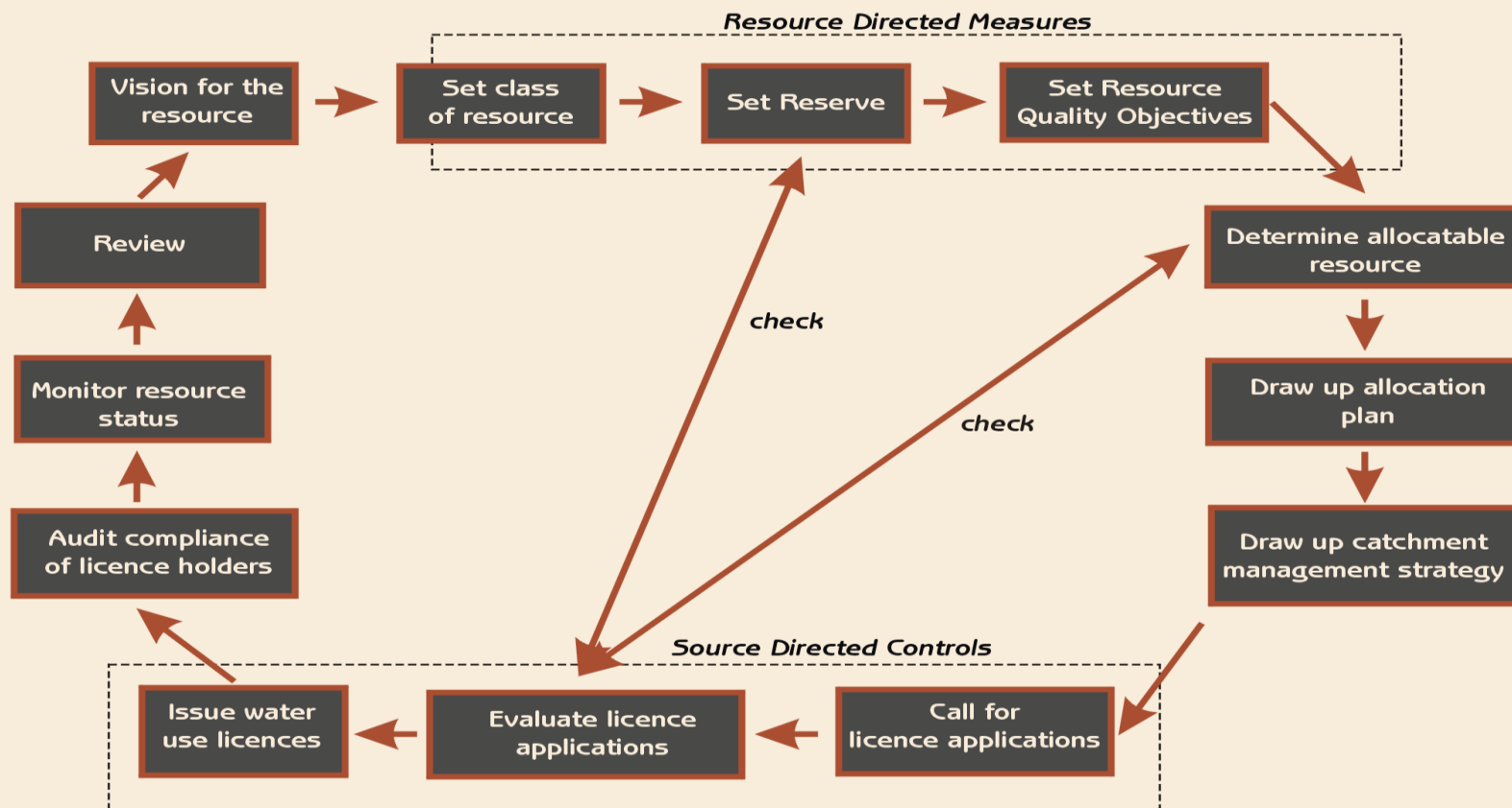
## Color Key



Total (1306) = desktop (1290), rapid (7), intermediate (6), comprehensive (3)

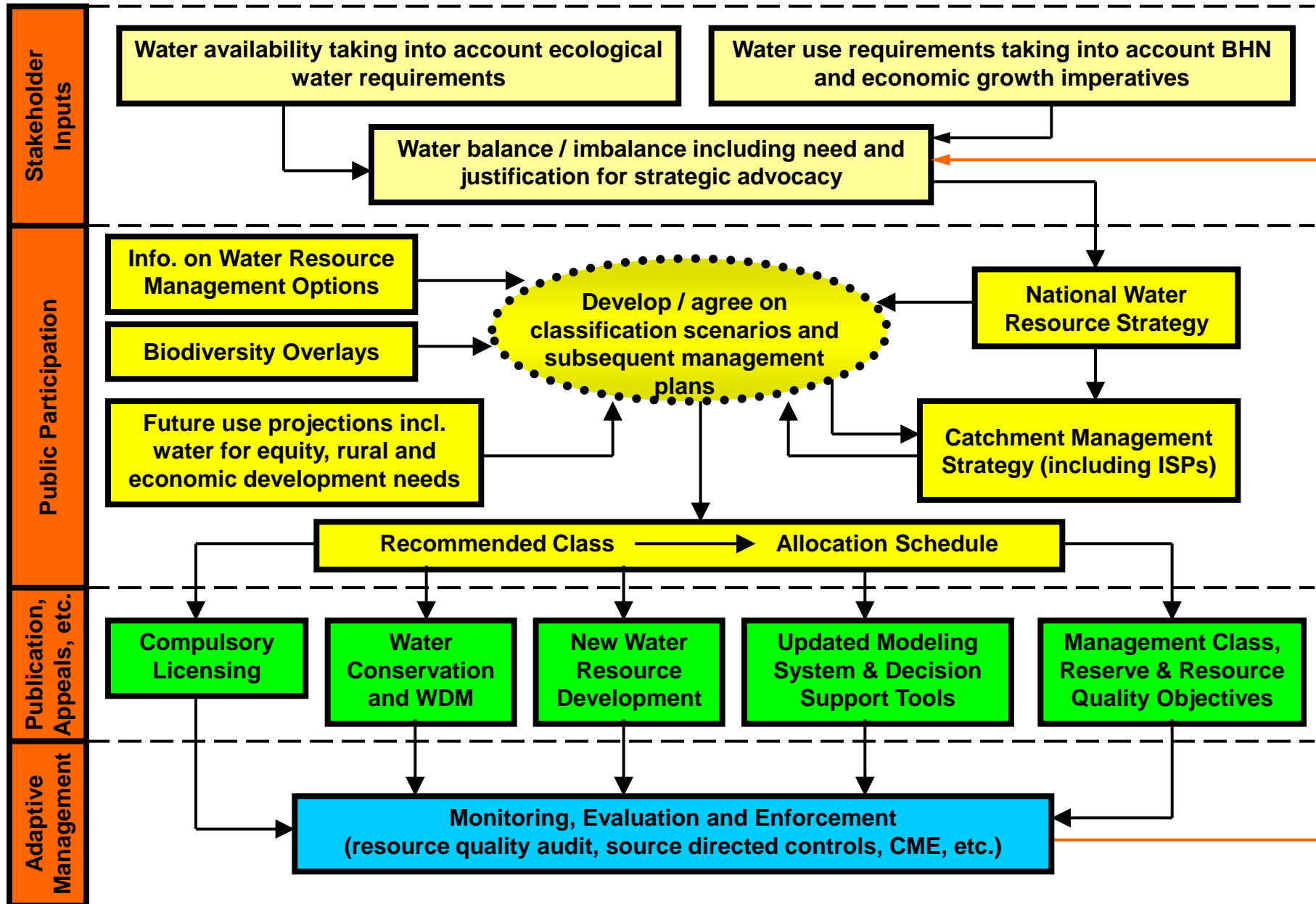
# Operationalising RDM - interfacing with SDC

## The Role of Resource Directed Measures and Source Directed Controls in Integrated Catchment Management





# Understanding key IWRM elements



# Concluding remarks

- 💧 Giving effect to water resource protection provisions as prescribed in NWA requires
  - 💧 Integration of decision-making processes
  - 💧 Strategies to be technically sound (scientific and legal)
  - 💧 Addressing current inequities in water allocation and ensuring equity between generations simultaneously
  - 💧 **Ensuring** 'some for all forever', **together** – ex DWA DG
  - 💧 Water resource protection provisions should not be perceived as competing with socio-economics needs
  - 💧 More vigorous implementation, which requires **adequate & effective** skilled capacity (administrative & technical)



# Thank You!



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