

## **JOINT WATER QUALITY BASELINE SURVEY WORKSHOP**

# **APPROACH TO WATER QUALITY MONITORING**

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***Premier Boardroom, OR Tambo International Airport***



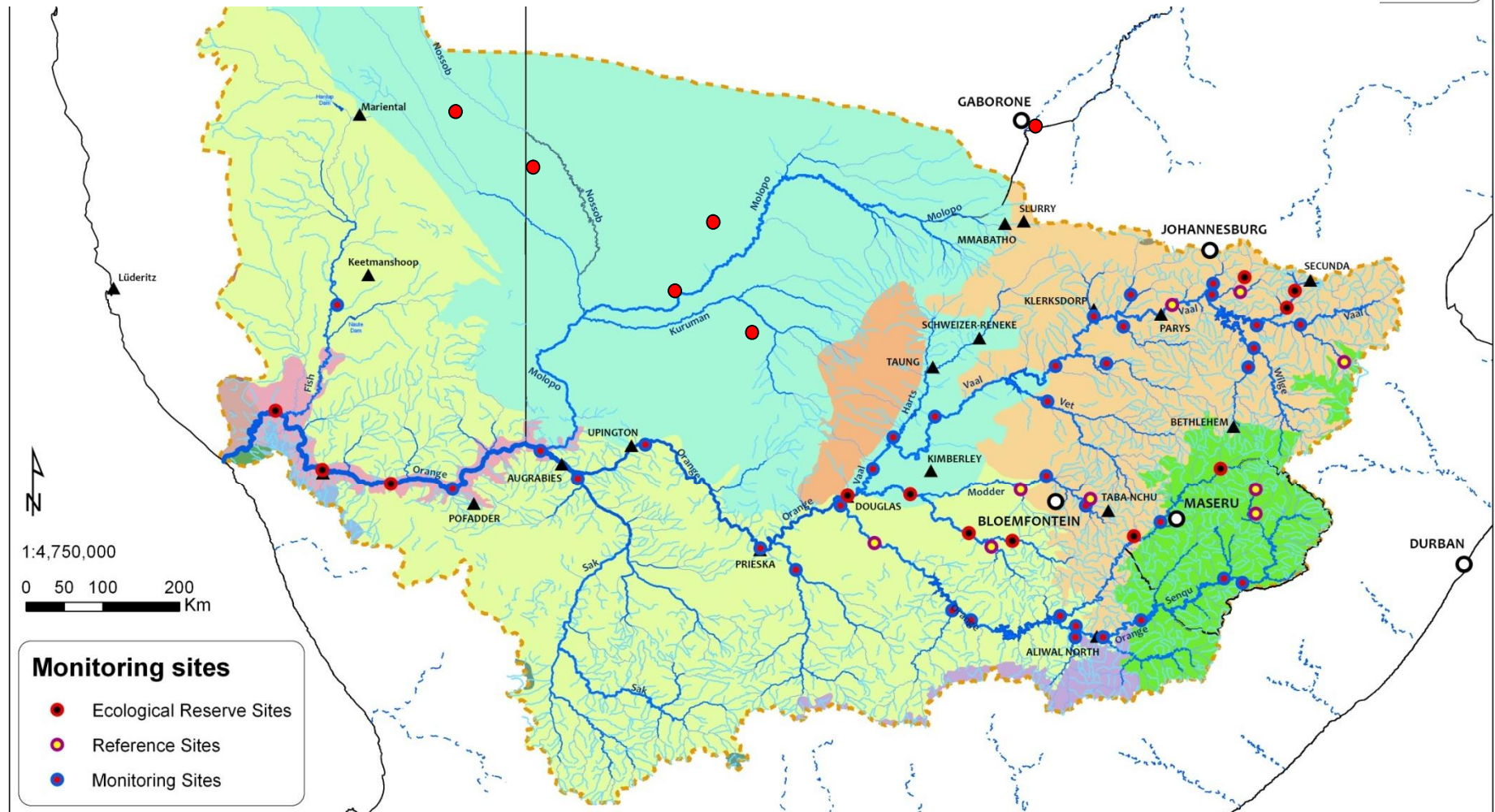


- **Water quality monitoring as part of the Orange - Senqu Joint Baseline Survey**
- **Piggyback onto Aquatic Ecosystem Health survey programme**
- **Interface with Inter-laboratory study**

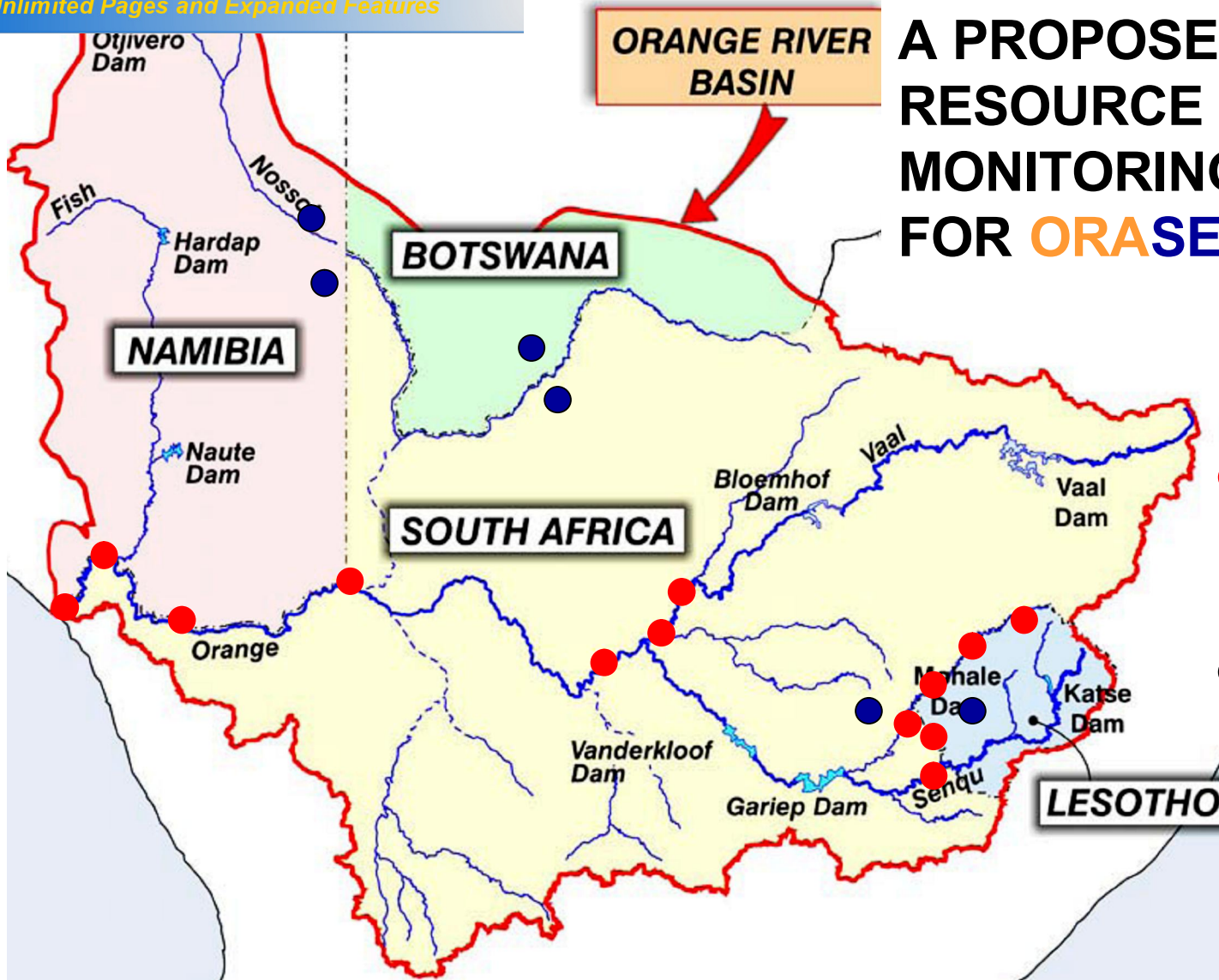


## for aquatic ecosystem health sampling



- Based on ecoregions and key sub-catchments
- Water quality samples collected at some of these points
- 6-8 groundwater sites



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# A PROPOSED WATER RESOURCE QUALITY MONITORING PROGRAMME FOR ORASECOM

-  13 INITIAL SURFACE WATER SITES
-  GROUNDWATER SITES



## For each of the water quality sites we need agreement on:



What variables do we monitor?

What laboratories do we use?

What detection limits are required?

Where is the data stored?












## Water quality variables

- **Physical properties**
  - EC, TDS, TSS, turbidity, pH etc.
- **Major cations and anions**
  - Na, Cl, K, F, Hardness, Mg, SO<sub>4</sub>, Si, TAL
- **Nutrients**
  - PO<sub>4</sub>-P, TP, NH<sub>4</sub>-N, NO<sub>3</sub>+NO<sub>2</sub>-N, KN
- **Biological**
  - Chlorophyll a, algal species composition
- **Microbial water quality**
  - Total coliforms, Faecal coliforms, E coli
- **Calculated indices – SAR, etc.**










## Sampling

-  Aquatic ecosystem health teams will collect the water samples
-  In situ measurements: Water temp, EC, pH, DO
-  Will use standardised water quality sampling protocols
-  Sample preservation
-  Sample labeling and preparation for transport
-  Quality control samples
-  Will deliver samples to a collection point



## Sample analysis

-  **Laboratory/agency/courier will collect samples and deliver them to laboratory**
-  **Chemical sample analysis**
  -  **Options – basin state laboratory, regional laboratory, one central laboratory**
-  **Microbiological sample analysis**
  -  **Regional laboratory & constraints**
-  **Analysis results**
  -  **Submit to ORASECOM Secretariat**



## Sampling programme

-  Align with Aquatic Ecosystem Health monitoring programme
-  Align with Inter-laboratory study
-  September/October 2010
-  Reporting – October/November
-  Summary report – January/February 2011





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# DISCUSSION



- **Sampling sites (Ideal and minimum)**
- **Variables of concern (Ideal and minimum)**
- **Laboratories**
  - **Microbiological**
  - **Chemical**
- **Engagement of laboratories**
- **Logistics and institutional support for survey**
- **The way forward**





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**THANK YOU**

