water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

THE INTEGRATED WATER QUALITY MANAGEMENT (IWQM) SYMPOSIUM

Role of NIWIS and the DAM Strategy in the Management and Dissemination of Water Quality Data and Information

Mxolisi Mukhawana
Scientific Manager: NIWIS Data Management & DAM Strategy Project
Sub-Directorate: Integrated Water Information Systems (IWIS)
Directorate: Information Programmes (IP)
Chief-Directorate: Water Information Management (WIM)

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2030 NDP

WQM POLICIES AND STRATEGIES FOR SOUTH AFRICA
WP 10978

Towards Implementation

D Weston
Pegasys
IWQM Symposium
31st May 2017

The National Integrated Water Information System (NIWIS)

Aim

⇒Provide a Single extensive, integrated, accessible water information platform

⇒Have readily available integrated decision making information not only for users in the water sector.

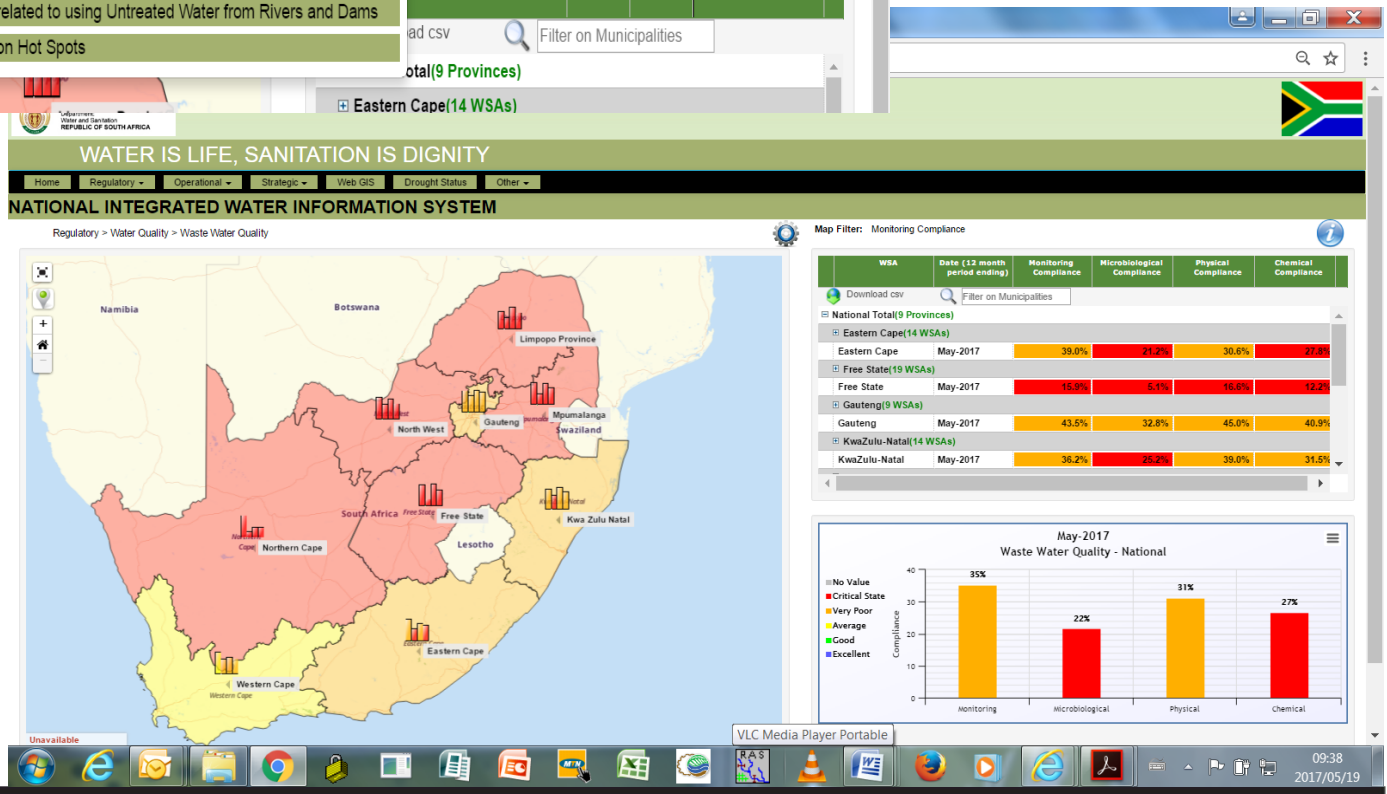
Objective

⇒Universal accessibility to required integrated water related information and to assist the decision making process with end user enquiries, analysis and reporting.

Water Quality Information Dissemination Tools & their Data Sources (Data Management Systems)

Category	Dashboards	Data Sources: Data Management Systems	Data Extraction Method
Regulation	Waste Water Quality	Water Management System (WMS)	Automated (SP)
	Drinking Water Quality	Blue Drop System (BDS)	Automated (SP)
	Waste Water Treatment Works	Green Drop System (GDS)	Automated (SP)
	Resource Water Quality Objectives	WMS	Automated (SP)
	Eutrophication Hot Spots	WMS	Automated (SP)
	Health risk related to using untreated water from rivers and dams	WMS	Automated (SP)

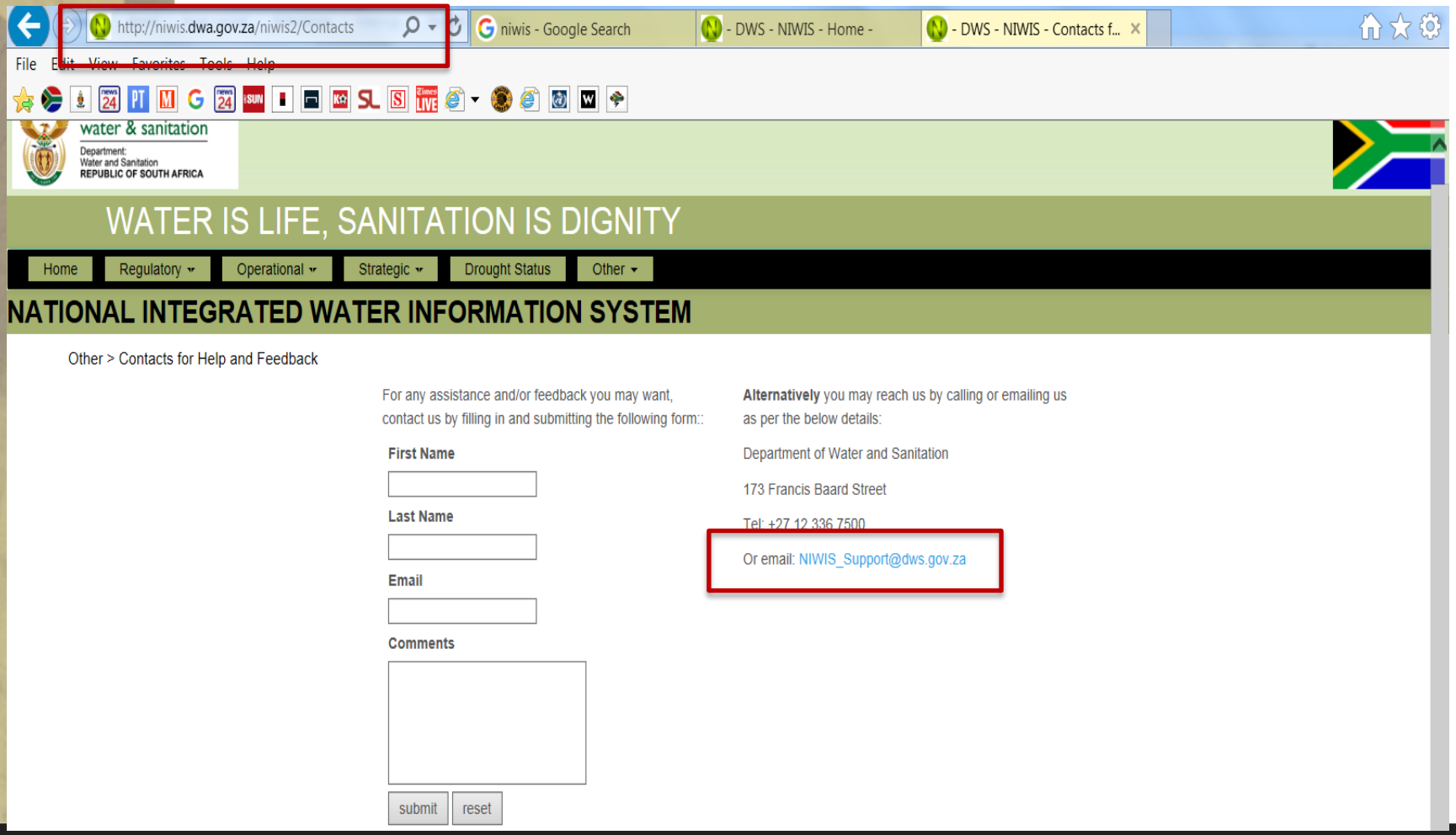
The National Integrated Water Information System (NIWIS)



The National Integrated Water Information System (NIWIS)

Impact of NIWIS on Users (NIWIS Support)

- ***NIWIS Provides a Platform for Data and Information Related Queries***
- ***NIWIS Provides a Platform for Data Requests***



The National Integrated Water Information System (NIWIS)

NIWIS Data Management Challenges:

⇒ **Data Availability**

e.g. Data not captured on time or not capture at all.

⇒ **Data Accessibility**

e.g. Data collected by other institutions, SAWS, ARC, CSRI, etc.

⇒ **Data Fragmentation**

> 10 data management systems with various data formats e.g. A drought dashboard would require data from various systems in various formats.

⇒ **Manual data extraction from databases**

e.g. Source → Local N-drive → NIWIS (Ideal: Source → NIWIS)

⇒**Lack of structured data management systems**

Lack automation e.g. Data in PCs shared using spreadsheets & E-mail

⇒**Lack of integration among data management systems**

AIM OF THE DAM STRATEGY

The Aim of the DAM strategy is to Develop a National Data Acquisition and Management Model for Coordinating and Facilitating the Sector Wide Management of Water and Sanitation Data used to Generate Information required to populate all National Information Systems.

OBJECTIVES OF THE DAM STRATEGY

⇒ **Review and make Recommendations for improving the efficiency and effectiveness of the following;**

1) **Current Water and Sanitation Data Governance**

2) **Current Water and Sanitation Data Management Systems**

3) **Current Water and Sanitation Data Life Cycle Management Approaches**

4) **Current Collaborations with Water and Sanitation Institutions for Data sharing**

PURPOSE OF THE DAM STRATEGY

⇒ **To Improve the efficiency and effectiveness of the following;**

1) **Data Governance**

2) **Data Management Systems**

3) **Data Life Cycle Management Approaches**

4) **Collaborations with Sector Wide Institutions for Data sharing**

Data Acquisition & Management Strategy for Water & Sanitation in RSA

Outcomes	Recommendations	#	Activities
Finding 1 ⇒More than 10 fragmented data management systems used to manage Water Quality Data	**Recommendation 1** ⇒ Develop an integrated approach or method to efficiently and effectively manage the ± 10 DMSs used in the management of Water Quality Data.	Activity 1.1	Investigate the types of data stored in the ± 10 DMSs to identify any duplication of datasets among the DMSs. Where duplication exists, it must be established which DMSs are the most capable for handling the different types of data in order to eliminate duplication.
		Activity 1.2	Investigate the types of data stored in the ± 10 DMSs to establish which systems are most capable for providing the best accessibility, security as well as the best timeliness in disseminating data.
		Activity 1.3	Review the WMS technical specifications and the technical specifications of the other Water Quality DMSs in order to develop an integrated approach for managing the data stored in the all the Water Quality DMSs.
Finding 2 Water Quality Data not stored into structured DMSs	**Recommendation 2** Identify and retrieve data stored in personal computers, hard drives and as hard copies; and transfer into relevant data management systems for water quality.	Activity 2.1	Investigate the types of data stored in personal computers and identify Water Quality DMSs where the data should be stored. Make recommendations on how to transfer the data depending on the type of data and the design of the DMSs.
Finding 3 ⇒No Structured DMS for Wetlands Data	**Recommendation 3** ⇒Develop a structured DMS for Wetlands data.	Activity 3.1	Evaluate all Wetlands data currently required to generate information used for managing Wetlands in RSA. Evaluate the capability of the currently existing Water Quality DMSs to accommodate the Wetlands data. Make recommendations on whether a new Database for Wetlands data should be developed or if one or more of the currently existing Water Quality DMSs may be utilized.
Finding 4 ⇒ It has been revealed that the WMS is not user friendly; hence few DWS regions are able to store data.	**Recommendation 4** ⇒Improve the user friendliness of the WMS.	Activity 4.1	Identify the factors contributing to the user unfriendliness of WMS, by calling for comments from all users.
		Activity 4.2	Use the information from the user survey to identify tools, methods or technologies for improving the user friendliness of the WMS. These may include hardware, software and communications technology.
Finding 5 ⇒ Missing Data Collected by Consultants and Other External Institutions	**Recommendation 5** ⇒Enable access Water Quality data that reside with Consultants and other External Institutions and Consultants.	Activity 5.1	Identify the different types of missing data as well as the External Institutions and Consultants that are collecting the missing data
		Activity 5.2	Conduct workshops and meetings with to negotiate ways of sharing Water Quality data.
Finding 6 Develop Data Architecture for water quality DMSs	**Recommendation 6** Develop Data Architecture for water quality DMSs.	Activity 6.1	Investigate methods for developing data architecture for water quality data.

SAVE THE DATE:
DAM Strategy National Workshop
Roodeplaat Training Centre
8-9 June 2017