**DEVELOPMENT OF THE MANAGEMENT INFORMATION SYSTEM FOR THE INCOMATI AND MAPUTO WATERCOURSES DATA COLLECTION TOOL**

**Purpose:**

The objective of this questionnaire is for key national institutions and stakeholders to answer the under listed questions aimed to support the development of the IncoMaputo Watercourse MIS:

Respondents are requested to answer as detailed as possible and email filled in questionnaire to [nicollete80@gmial.com](mailto:nicollete80@gmial.com) and copy [ginindzatk@gmail.com](mailto:ginindzatk@gmail.com).

| **MIS THEMATIC AREA** | **RESPONSE** |
| --- | --- |
| 1. **DATA MANAGEMENT** | |
| Which data management system does your organization primarily use? How many years have you been using it? |  |
| * Actively licensed commercial hydrological data management system | **HYDRAS3 – We have been using for about 10 years**  **HYDSTRA – We have been using it for 21 years** |
| * Unsupported (highly customized) commercial hydrological data management system | **NA** |
| * Office software (spreadsheet) | * **Spread sheet created to assist us with the Dam water balance.** * **Spreadsheet for Dissemination of daily Komati Flows and Water Quality** |
| * Custom solution (done by contractor or build and supported in-house |  |
| 1. How old are your data / information archives, where are they stored and in what format? | **Data collected by KOBWA loggers is over approximately 20 years old. However, we have received data from other stakeholders which we have back up in our data management system. Some of this data dates back to the early 20th century.**  **All this data is stored in Hydstra (a time series data management system).** |
| 1. What data is being collected? (Surface water, Groundwater- quality and quantity) etc | **Surface water: Quantity and quality at various flow measuring structure.**  **Groundwater: Water level and quality at various water supply boreholes.**  **Rainfall: Weather Stations** |
| 1. What are the main ways of data collection/gathering? | **OTT Ecologs – these instruments measure the quantity and quality (EC and Temp) of flow through the weir stations. They are also used to measure the level of ground water.**  **NetDL500 and Cello6 – Mainly used to collect weather data (Rainfall, temperature, wind speed, etc.). They are also used for the monitoring of various Dam Wall parameters, e.g. seepage.** |
| 1. State any existing data collection methods used specifically for collecting data for the following aspects; |  |
| * 1. Emergencies | **Data loggers and manual data collection** |
| * 1. Drought | **Data loggers** |
| * 1. Flood | **Data loggers** |
| * 1. Water Pollution | **Data loggers and water quality monitoring programme** |
| Are there any standards and risk triggers within the existing systems? | **As per statutory requirements in managing large dams such as Driekoppies and Maguga Dams, KOBWA has Emergency Preparedness Plan (EPP) for each dam. These stipulate the trigger notification schedule for the two dams. Various alert statuses are linked to the dams discharge.** |
| Please explain the chain of information flow during emergency and disaster management. | **KOBWA mandate is to notify the National Disaster Management Agency (NDMA) in Eswatini and the Provincial Disaster Management Center (PDMC) in South Africa including DWA-KOE and DWS in South Africa. It is the responsibility of the disaster offices mentioned above to notify the local authorities and communities through each institution’s EPP.** |
| How effective is the communication during and emergency and disaster? | **It is effective.** |
| What is your level of satisfaction with your existing system (inclusive of support) relative to the following attributes? (rate 1-5) *Where 1 is lowest and 5 highest* |  |
| * Total cost ownership | **5** |
| * Ease of use/training | **4** |
| * Data security | **4** |
| * Responsiveness (e.g. to emerging technologies & evolving end-user expectations) | **3** |
| * Performance (e.g. speed of data queries) | **3** |
| * Reliability | **4** |
| * Breadth of features / functionality | **3** |
| Please rate the importance of each of the following features in a data management system. (rate 1-5) *Where 1 is lowest and 5 highest* |  |
| * User web access to data management system (anytime, anywhere) | **5** |
| * Ease of importing data (e.g. time series, gauging measurements, lab samples) | **5** |
| * Level of integration with telemetry systems | **3** |
| * Development & maintenance of rating curves | **5** |
| * Support for other river discharge models (e.g. slope discharge) | **3** |
| * Discrete sample analysis (e.g. cluster analysis) | **3** |
| * Integration with enterprise GIS | **4** |
| * Database security, backup, failover, & general system enterprise awareness | **5** |
| * Data history / auditability (who, what, when, why) | **5** |
| * Data approval, locking, & workflow control | **5** |
| * Data visualization options & interactivity | **5** |
| * Time series data editing & correction | **5** |
| * Automated corrections | **5** |
| * Reporting & report configurability | **5** |
| * Real time alerts & notifications | **5** |
| * Data dissemination & publication to data consumers | **4** |
| What hardware and software infrastructure do you have available for data management? | **Ecolog equipment, PC’s and server** |
| Do you feel it is adequate? | **We have Hydras3 and Hydstra installed at our server. I feel there is room for improvement.** |
| 1. **COMMUNICATIONS TECHNOLOGIES** | |
| What data communications technologies are you using? | **GSM/GPRS** |
| Which of the Transboundary stations are using the following technologies? |  |
| * Analog data retrieval (e.g. charts) | **None** |
| * Digital data retrieval (e.g. logger files) | **All** |
| * Radio (e.g. VHF, meteor burst) | **None** |
| * Telephone (e.g. landline, cellular) | **None** |
| * Satellite (e.g. GOES, NOAA) | **None** |
| * Web enabled sensors (e.g. IP Comms) | **None** |
| 1. **STAKEHOLDER EXPECTATIONS AND INVOLVEMENT** | |
| Which primary data dissemination methods and technologies your organization is using? |  |
| * Hard copy publications | **NA** |
| * Telephone | **Sometimes** |
| * Physical digital media (e.g. CD ROM, DVD, etc.) | **Back-ups used to be done via CD, not external hard drives are utilized.** |
| * Web1.0 (e.g. static HTML) | **We have automated emails that are sent to stakeholders. These emails contain near real time hydrological data.** |
| * Web 2.0 (e.g. dynamic content) | **Via KOBWA website** |
| * Data dissémination via mobile devises (e.g. iPhone, Android, Tablet, etc | **WhatsApp is also utilised some of the times.** |
| Please indicate if the number of queries or complaints about missing / estimated / degraded quality in the final data product has changed in the past decade. |  |
| * Missing data | **Yes, since installation of OTT data logger, the record has no gaps.** |
| * Estimated periods | **When the flow exceed the rating table, the flow is estimated** |
| * Degraded quality data (e.g. poorly defined rating curve) | **NA** |
| Please indicate how the importance of the following aspects of data auditability has changed over the past decade. |  |
| * Ability to say exactly what data was publicly accessible at any given date/time | **Raw data is always available on Hydras3 and only Hydstra data is edited for archiving process** |
| * Ability to communicate the data version to the public (e.g. raw, preliminary, quality controlled, quality assured) | **It’s important and data shared has a disclaimer for end-user as data may be continuously edited from time to time.** |
| * Ability to authenticate exactly who made changes to the data, when, how & why | **Individuals have different log-in levels as per use of the system. Personnel with highest level, level 3, are few and only one is allowed to edit, delete, and archive. This has timelines to check who was logged in at what time.** |
| * Ability to differentiate and verify data path for any given version of the data (e.g. telemetry vs logger) | **KOBWA has telemetry (logger) data and manually recorded during site visits, all this data is archived on Hydstra. The two sets can be differentiated with ease.** |
| 1. **CAPACITY NEEDS AND GAPS** | |
| * Did anyone within the organization participate in the MIS training done in PRIMA 1? | **NO, Not the team currently responsible for the system.** |
| * Based on the participants of the training, how was the training conducted and was this training effective? |  |
| * What changes or improvements are needed to be done to ensure that training on the IMS is effective / sustainable? |  |
| * Who is responsible for data management in your organization? What are their responsibilities? | **Individuals collecting data are responsible for data they collect. However, the KOBWA database is a responsibility of the System Operation Unit.** |
| * What are the mandates of your organization in transboundary water resources management and data collection and sharing? | **Data is shared on monthly basis with the Parties (Eswatini and South Africa) through DWA-KOE and DWS, the national water departments.**  **The national water departments also have to ensure KOBWA received water abstraction figures from the water users for storage reconciliation of the dams.**  **Through approval from the KOBWA CEO, data may be shared if formal request is sent.** |
| * Do you have enough resources to collect, store and share data? | **Yes** |
| * What are the main constraints encountered by the Information management staff member in exercising his/her tasks and categorize these into the under listed: |  |
| * Function * Capacity * Institutional / Environment * Management * Support |  |
| * Recommend what capacity building actions could be undertaken to mitigate the encountered constraints. |  |
| 1. **MIS RECOMMENDATIONS** | |
| * On the proposed system what are you expecting to see or get in terms of reports or functionality. |  |