## Climate Data Rescue Progress Report

## Department of meteorological service Botswana

19<sup>th</sup> of Dezember 2016 Jens Riede, PhD DWD / SASSCAL

## A) Introduction

As part of the SASSCAL initiative the German meteorological Service is collaborating with several national meteorological services in the southern African Region (INAMET (Angola), DMS (Botswana) and ZMD (Zambia)). Main aim of the SASSCAL Task 123 "Historical and ongoing data management" is to support the national meteorological services in terms of data management and data rescue. The last report (December 2015) focused on requirements for storing and imaging paper records. This report will highlight data rescue progress at the Department of Meteorological Services (DMS) Botswana.



Date rescue team at Departement of Meteorological Services in Botswana

## B) Situation November 2016

In late 2015 the department of Meteorological Services applied for financial support for data rescue activiers at WMO/GCOS. With support of WMO/GCOS it was possible to buy several shelves, one storage cabinet, one scanner and two digital cameras including equipment (copy stands, remote control). During a first data rescue workshop in March 2016 10 DMS staff member have been trained on the usage of digital cameras, however, during the training a lot of the ordered equipment's had not yet arrived eg. copy stand and scanner. Therefore during the training was focusing on discuss how the archival infrastructure could be improved. Past situation was that there have been two small main archival rooms at the first floor in the main building.

During the training in the DMS "Schoolroom" it was recommended to use the "Schoolroom" temporarily as third archival room and digitizing room. This suggestion was accepted by the DMS Management. After this first working visit in 2016 all required equipment arrived at the DMS and all shelves have been installed in the three main archival rooms at the DMS Headquarter.





Figure 1 & 2 Left picture Schoolroom during the first data rescue Workshop March 2016. Right picture same room in November 2016 now third archive room and digitizing room.



Figure 3, 4 & 5 Second Archive room at DMS Headquarter left picture situation 2015 with only few shelves. Right, same room in November 2016. Right upper picture storing cabinet mainly used for rainfall records, right lower picture shelves for hanging register (Bmet2)

The former two archive rooms at the first floor at DMS have been reorganized to store all documents in a more efficient way. The DMS staff members
Bontshetse Thebe, Kathlee Kruger and
Laone Koolefhele did a great job by reorganizing the archive, packing and sorting all document voluntarily in their spare time including





weekends. There is still a need of label all shelves in the three archive rooms. To improve the labeling a DMS officers have visited the national archive in Botswana and discussed how to work together. In order to the recommendation at the national archive it has been decided to use a labeling system with number in a vertical order with bay and in a horizontal order with shelve. This system allows easily reorganizing all shelves if the shelves are moved into a larger archive rooms.





Figure 6 & 7 First archival room left picture situation February 2015, right picture November 2016 with all shelves installed and documents stored in boxes.

To improve the Journal Management Mrs. Laone Koolefhele has developed a Journal Management System (JMS). This innovative software system is based on an ACCESS database system. The aim is to support data management and data rescue officers with an easy access to information about journal inventory, journal movement information and all information related to the paperwork archive like storage of a certain report.

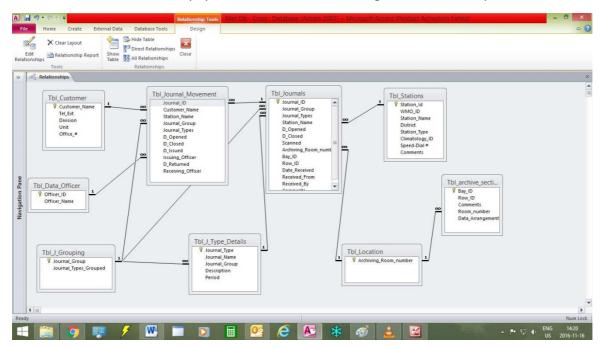


Figure 8 Entity Relationship (E/R) Diagram of the Journal Managment System.

During the data rescue training in November 2016 it has been agreed to organize the database in the same way as the paper work archive is organized, regarding the structure of shelves in the archive rooms in comparison to the tables in the JMS. Currently the system is used at DMS. Furthermore it has been discussed to provide the JMS as extension to CLIMSOFT to avoid doubling metadata entries. Mr. Mhanda as one of the core developer of CLIMSOFT welcomed the suggestion.

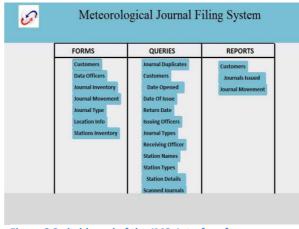


Figure 9 Switchboard of the JMS. Interface for an easy use of the ACCESS Database.

C) Data Rescue training November 2016 and recommendation for climate data rescue in Botswana

A team of six DMS officers were trained to use the digitizing equipment during the last week of October and the first week in November 2016. First the workspace was set up including the installation of the two cameras and the Scanner. To store the images DMS purchased an external 2TB USB Hard Drive, additionally a notebook bought by SASSCAL was provided to save image directly from the scanner. To rename all files from the cameras the canon camera- software is used. CLIMSOFT will be used to organize the digital archive. Currently this is being tested at DMS. CLIMSOFT is also the operational system for climate data information at DMS. During the two weeks workshop it was possible to scan and imaged in total 5000 documents.



Figure 10 & 11 Copy stands and scanner install in the digitizing room.

All participants received a data rescue certification at the end of the training to award the support of the data rescue initiative at the DMS.

At a final meeting with the management several suggestions have been made to continue and optimize the data rescue activity in Botswana. From DMS side it was supposed to create a data rescue and archival desk including 4 DMS officers on permanent contracts supported by part time hired staff. In total 2 million paper records has been estimate to exist at the DMS and with this it has been estimated that data rescues would take 50 person years.

This activity is still in progress and will be continued in 2017.