

ZAMBIA METEOROLOGICAL DEPARTMENT
DATA RESCUE & DIGITIZATION PROGRAMME
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Outline

- ❖ Introduction
- ❖ Importance of Historical Data
- ❖ Data rescue and Digitisation
- ❖ Imaging Media
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INTRODUCTION

- Weather and Climate have never been the same over years and it will keep on changing
- Historical data thus plays a cardinal roll in generating understanding of weather and climate knowledge or / information for the past, present and the future
- It therefore becomes important that we rescue and digitize all the data for us to generate the need information for our various planning and decision- making across all sectors of our society



IMPORTANCE OF HISTORICAL DATA

Historical data in research institutions is used to generate information or scenarios used for decision- making and planning by various sectors and Government in order to :

1. handle weather and climate related impacts that cause disasters or environmental shocks;
2. Improve and optimize management of water resources to provide sustainable access to freshwater for drinking and household use as well as planning for agriculture irrigation and renewable energy ;
3. Optimize management of water resources to generate needed Power for the general public and social- economic sectors;
4. Improve extension services to health and other sectors- e.g. manage the spread of disease vectors by relevant sectors;
5. Develop policies for green economy to enhance quality of life and environmental adaptive capacity for sustainable development



Data Rescue and Digitization

- There are more than **1.9 m historical data in hard copies** at Zambia Meteorological Department Head quarters and other stations across the country.
- This data is at risk of being lost or damaged if not properly archived
- Realizing this risk, ZMD, with support from UNDP CIEWS project , the Southern African Science Service Centre for Climate Change and Adaptive Land Management(SASSCAL) and other Institutions came up with an initiative to rescue and digitize deteriorating historical data .



Status of hard copies before Data Rescue and Digitization Programme



Hard copy documents in the ZMD Archives.

| Code | Length | Width | Description | Total |
|----------|--------|-------|--|------------------|
| MOZ 401 | 565mm | 304mm | Daily Register (Hourly Values) | 711,750 |
| MOZ 307A | 430mm | 304mm | Hourly Values (DP, RH, Sunshine, Wind (dr, ff)) | 117,000 |
| MOZ 307B | 430mm | 304mm | Hourly Values (Pressure, Temp, Rainfall) | 70,200 |
| MOZ 302 | 430mm | 304mm | Hourly Values (Values from MOZ 401) | 117,000 |
| MOZ 304 | 430mm | 304mm | Daily Summary of MOZ 401 | 23,400 |
| MOZ 300 | 280mm | 205mm | Rainfall Register (Daily)(ZMD Stations + Voluntary Stations) | 720,000 |
| MOZ 310 | 330mm | 203mm | Rainfall Summaries | 60,000 |
| MOZ 301 | 405mm | 280mm | Rainfall, Sunshine, Surface Wind | 19,200 |
| MOZ 402 | 355mm | 193mm | Permanent Rainfall Register | 23,400 |
| | | | TOTAL | 1,861,950 |



Data rescue and digitization schedule

The programme has been planned in 04 phases;

1. Re organizing Paper in the archives
2. Paper Imaging
3. Digitize data values
4. Arrange digitized data values into soft copies - specific folders



Planned activities

| Activity | Description | Status |
|-----------------|--------------------------------------|----------|
| Paper archiving | • Searching and locate the documents | On going |
| | • Preserve and storage | On going |
| | • Creating the electronic inventory | On going |
| Paper Imaging | Scanning hard copies into image | On going |
| | Image validation | On going |
| | Creating Inventory | On going |



Planned activities cont.....

| Digitize data values | Data entry and imaged chart tracing | Not yet |
|------------------------|-------------------------------------|---------|
| | Quality control | Not yet |
| | Create a softy copy inventory | Not yet |
| Archiving digital data | Archiving folders onto database | Not yet |

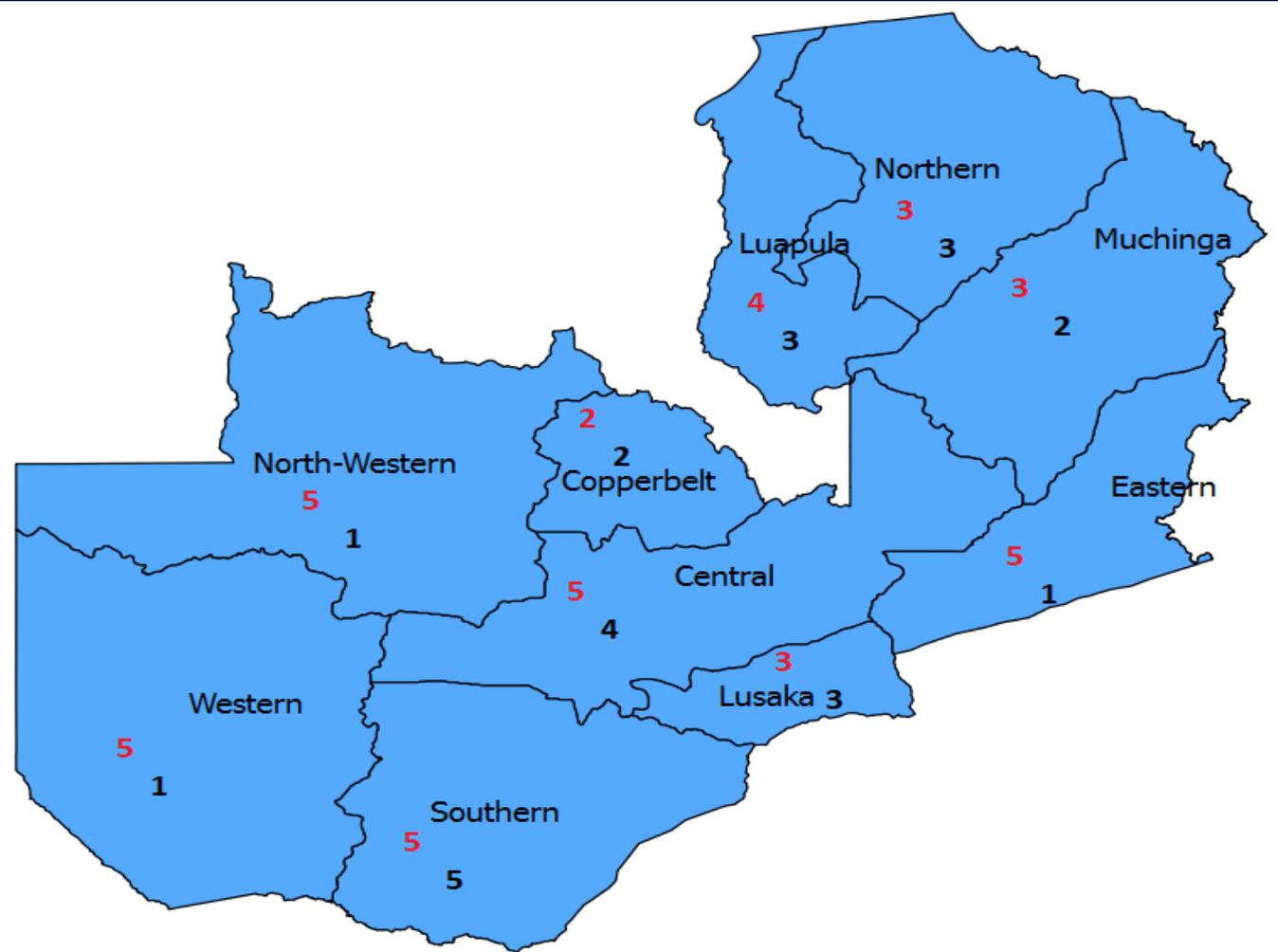


40 ZMD stations across the country

90% work has been done on Paper archiving

from the 10 Provinces in ZMD archive room

30% work done on paper imaging



Imaging Media tools

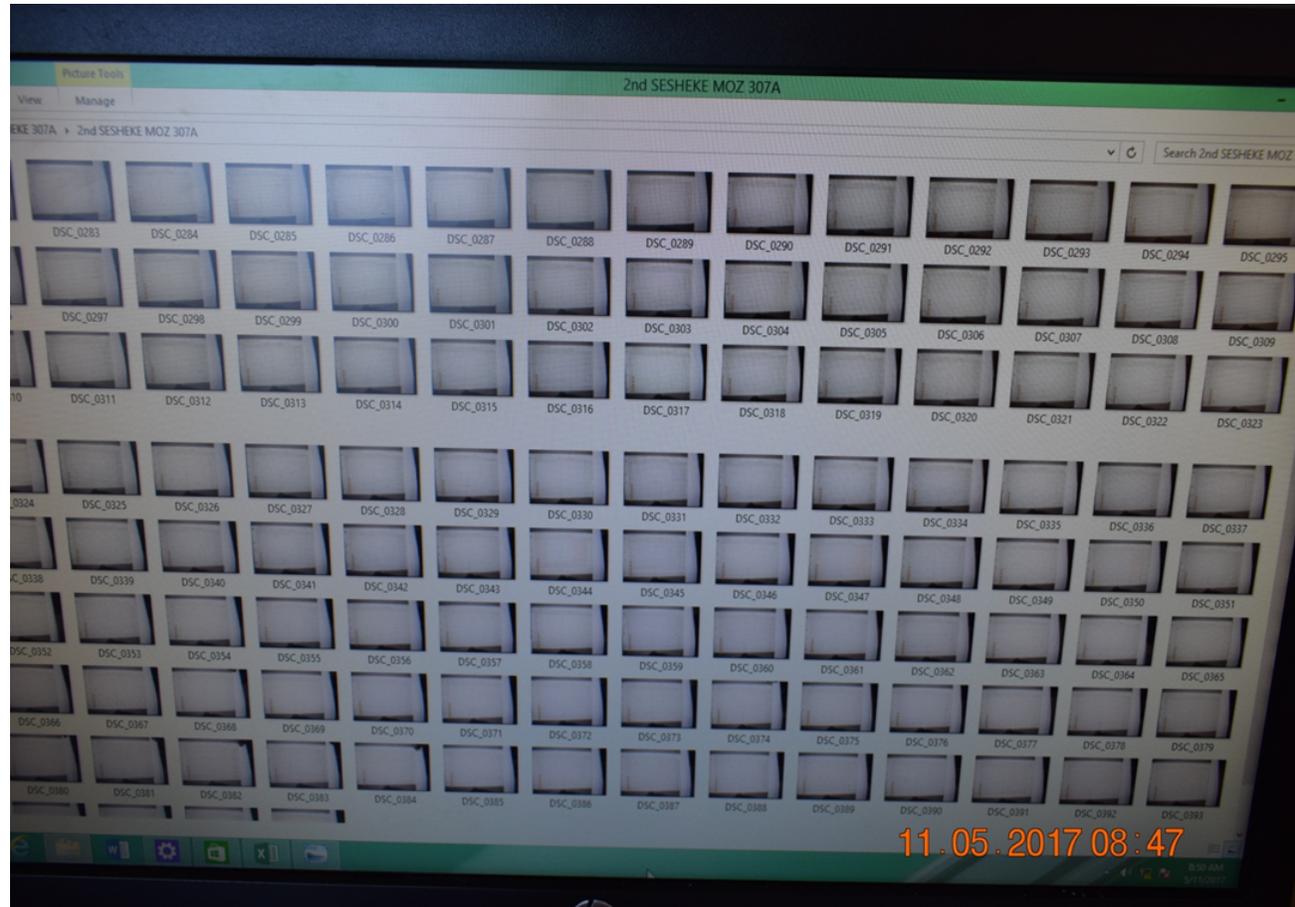
- Digital camera and photocopier have been used: capturing data from climate forms.
- Downloading captured images onto the computer.
- Creating image folders/file inventories on the computer.



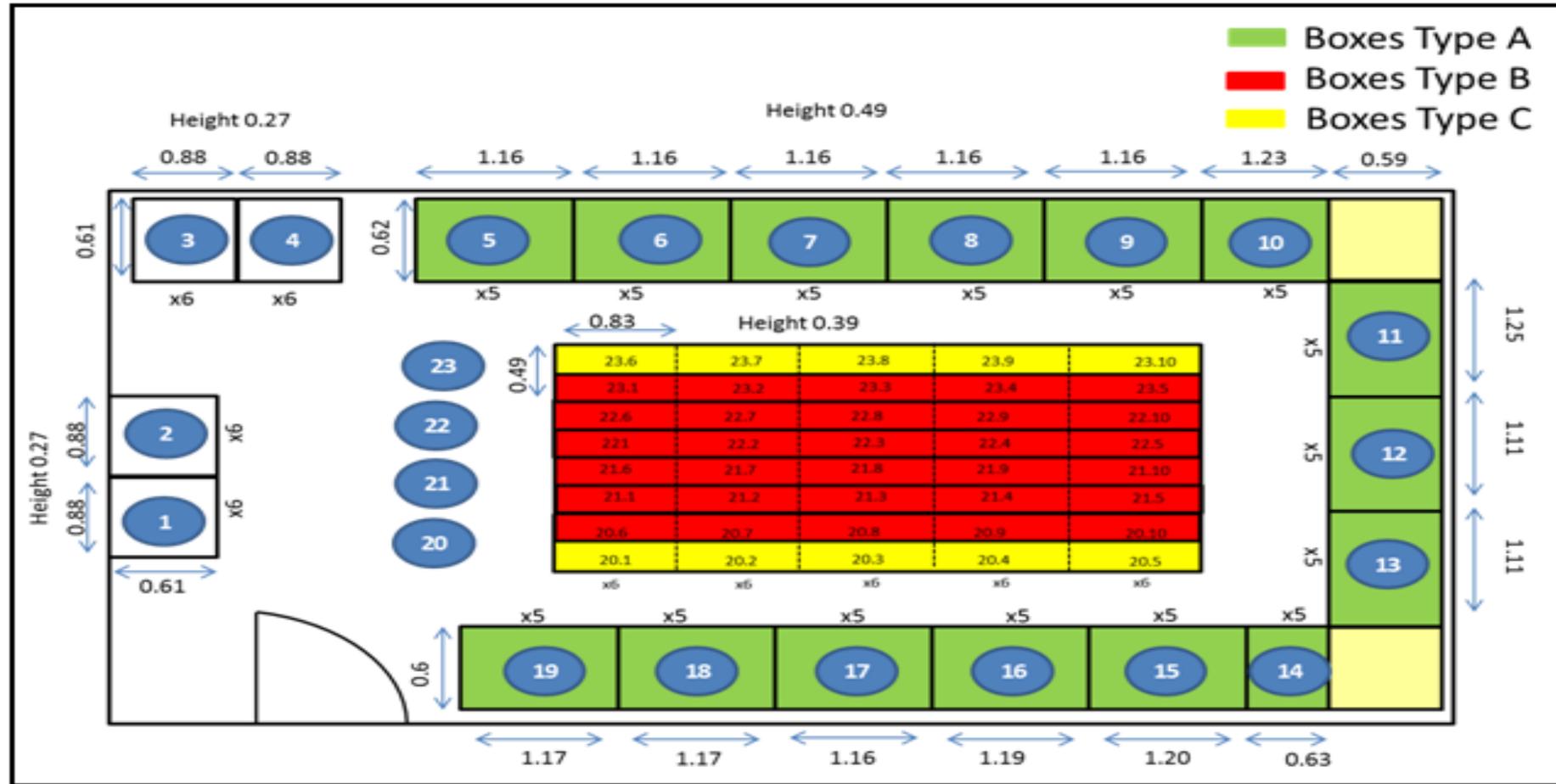
Process of capturing Images



Captured file images/soft copies



LAYOUT OF ARCHIVING ROOM



THE CURRENT STATUS OF THE ARCHIVING ROOM

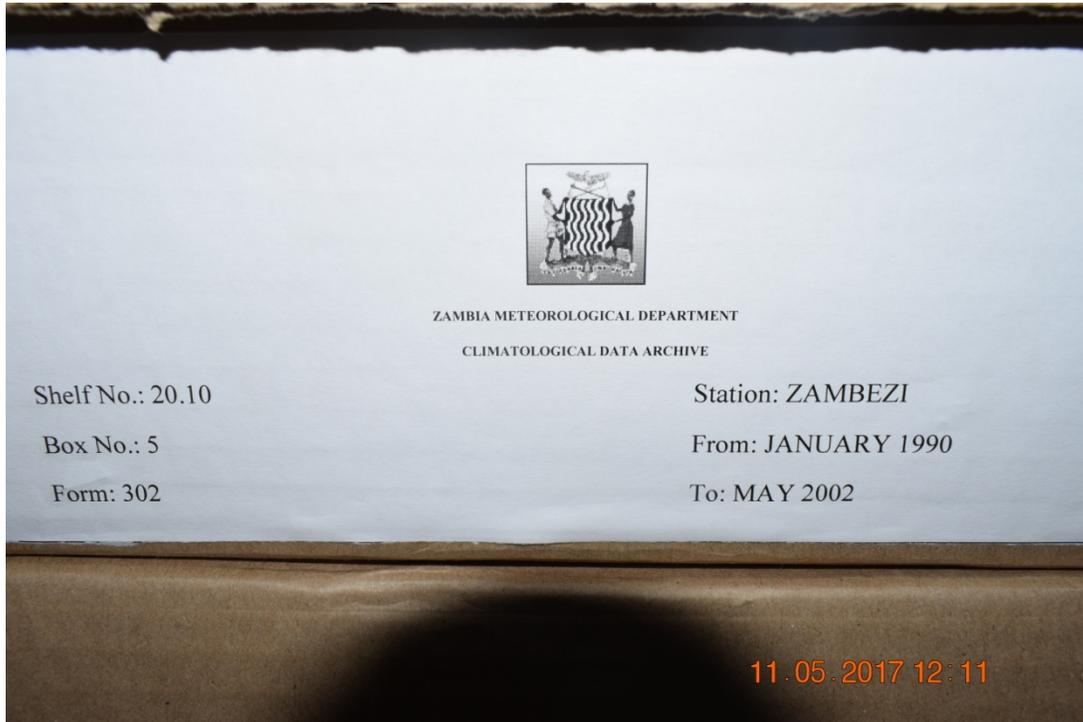


Electronic Inventory

| Shelf No. | Box No. | Book No. | Form | Station | From | To | Missing |
|-----------|---------|----------|------|---------|----------|----------|---------------|
| 20.10 | 5 | 1 | 302 | ZAMBEZI | Jan - 90 | Dec - 91 | |
| 20.10 | 5 | 2 | 302 | ZAMBEZI | Jan - 92 | Dec - 94 | |
| 20.10 | 5 | 3 | 302 | ZAMBEZI | Jan - 95 | Dec - 96 | 1997 and 1998 |
| 20.10 | 5 | 4 | 302 | ZAMBEZI | Jan - 99 | May - 02 | |
| 20.10 | 6 | 1 | 304 | ZAMBEZI | Dec - 66 | Dec - 83 | |
| 20.10 | 6 | 2 | 304 | ZAMBEZI | Jan - 84 | Dec - 96 | |
| 20.10 | 6 | 3 | 304 | ZAMBEZI | Jan - 97 | Mar - 14 | |



Archive room inventory access



Soft copy files arrangement

- Create digital data inventory files and folders.



Image of softy copies



Benefits

- secure from damage as compared to earlier arrangement
- Easy to access and retrieve
- Easy to manage and monitor
- Easy to format
- Easy to package/analyze



Challenges

- Inadequate human resource to speed up the activity.
- Late delivery of climate returns from out stations delays the archiving process.
- Inadequate space to accommodate more hard-copy data
- Inadequate tools to carry out the exercise



Way forward

- to share ideas, information and experiences to help strengthen data rescue and digitization at ZMD
- need for financial and material support for the exercise and continuity with the process



Thank You



Zambia Meteorological Department

