Implementation of Data Rescue programs and producing national climatologies in Burkina Faso, Mali and Niger

March 2nd – July 31st 2015

Hama Kontongomde

Mission Report

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Terms of Reference and objectives of the mission

The activity is executed under, and funded by, the Programme of Cooperation for Climate Change Adaptation in West Africa and addresses programme component 4 : 'Implementation of data rescue programs and producing national climatologies'

The mission objectives were to initiate and supervise the data rescue activities for the beneficiaries through:

- **Modernizing and re-arranging their paper archives by**
  identifying appropriate space, (ii) cleaning rooms, (iii) purchasing shelfs and archive boxes as needed, (iv) filing all paper according to an appropriate system (station, year; format etc.), (v) establishing an inventory, and (vi) establishing procedures to maintain the archive

- **Consolidating their national climate databases by**
  storing all digitized national data (including those held abroad) in a central place, (ii) consolidating element definitions where needed, (iii) applying quality control and (iv) produce at least two copies of the national data base to be kept outside NMHS Headquarters for data base security reasons, and (v) establishing procedures to maintain the data base

- **Preparing a sustained imaging process by**
  Identifying imaging priorities regarding stations and elements, (ii) identifying and purchasing appropriate imaging equipment, (iii) defining the imaging process including quality control, (iv) establishing procedures to sustain the imaging process

- **Constituting national support teams** of experts, retirees, and students etc. to assist the beneficiaries in data rescue.

- **Establish a detailed work plan and provide** a final report including a draft proposal for digitizing imaged data- as per time table below

- **Carry out missions to the beneficiary countries** as well as to ACMAD as per time frame below

- **Ensure appropriately labeling** all activities carried out, and equipment purchased, under this project

- Identify and liaise with ongoing and planned climate data-relevant projects and activities in the beneficiary countries as well as in the region, and liaise closely with ACMAD including on WACA-DARE.

Periods in the three countries

15 March – 15 April 2015 Ouagadougou, Burkina Faso

16 April - 15 May 2015 Bamako, Mali

16 May – 03 June 2015 Ouagadougou, Burkina Faso

04 June – 06 July 2015 Niamey Niger

07 July – 30 July 2015 Ouagadougou, Burkina Faso

Direction Générale de la Météorologie - Burkina Faso (Base Country)

15 March – 15 April 2015
16 May – 3 June 2015
7 July – 30 July 2015

Briefing meeting

A meeting was organized on 16 March 2015 by the Director General of the Direction General de la Meteorologie and Permanent Representative (PR) of Burkina Faso with WMO, Dr. Pascal Yaka and his staff with the WMO expert to be briefed on the ToRs and objectives of the joint Government of Greece – WMO project "Enhancing climate services in Burkina Faso, Mali and Niger". The WMO expert explained the objectives of the project, the ToRs of his mission as well as the main activities to be conducted.

The PR welcomed this WMO initiative to help find solution for a better and definitive process for the archives. The situation of the climatological paper archives is a real concern and this project is critical for the Direction General de la Meteorologie.

Mr. Jean Marc Bazié, Mr. Lazare Sawadogo and Ms. Beogo Damata were appointed to work with the expert.

Visit of the archives rooms

The archives were dispatched in different small rooms. Ms. Beogo Damata who in charge of archives, has performed a good job in archiving the observations books in nice boxes but the work to re-arrange all these documents is tremendous.

A suggestion to combine two big offices by removing the separation wall was accepted by the Director General and this was removed in two weeks.

A second technical meeting was organized to evaluate the quantity of documents to be re-organized and imaged using the digital cameras.

Estimation of number of documents to re-organize and image

Synoptic stations:

Number of Observations books	9247
Number of Monthly Climatological Tables	9 247

Climatological stations

Number of Monthly Climatological Tables	3236
Number of Observations Books	3236

Agrometeorological stations

Number of Monthly Climatological Tables	3724
Number of Observations Books	3724

Number of Rainfall documents	111 074

Visit to UNDP

The UNDP in Ouagadougou could not find any mail sent by WMO concerning the cameras, the copy stands purchased through DanOffice and Kaiser Fototechnik and the PCs and shelves purchased locally. A second visit with copies of the different mails sent by WMO helped the staff on UNDP initiate the process to (1) get the equipment out of customs and (2) request the local service providers to deliver the PCs and shelves. It took more than a month to UNDP to deliver the equipment to the Met service in Ouagadougou.

Re-organizing the paper archives

The existing shelves were not suited for a good archiving system. New shelves were purchased through the UNDP and installed in the new archiving room

The Met service had previously purchased archive boxes, Following the **Estimation of** number of documents to re-organize and image, it appeared that more boxes were needed. The WMO expert purchased 300 more archive boxes.

New shelves

New archiving shelves and archive boxes

Mr Belemnaba and Mr KI

MM Belemnaba, Waongo, Zonga and Ms. Beogo

Mr. Ambroise Dieudonné Marie Belemnaba and Mr. Cyriaques Ki, retired weather observers in synoptic stations were identified and recruited through a part-time contract of 11 months with WMO to assist in reorganizing the climate paper records as of 1 July 2015.

The Director of Climatology and Observation network suggested to start with the reorganizing of the strip charts for the 10 synoptic stations. This activity was conducted during the first week of July.

Ms Beogo Damata, archivist of the Direction
Générale de la Météorologie storing
documents in archive boxes

Imaging archiving records

Mr. Ali Zonga and Mr. Soumaila Waongo were identified through a part-time contract for 11 months with WMO to assist in imaging the climate paper records as of 1 July 2015. They will be supervised by Mr. Jean Marc Bazié and Mr. Lazare Sawadogo.

Mr Zonga and Mr Waongo capturing images from Climatological Monthly Tables

The archivist of the Direction Générale de la Météorologie (Ms, Beogo) and the four recruited staff

The PCs, copy stand and digital cameras were installed with the help of the department of Infrastructure and equipment.

Mr Ali Zonga and Mr Soumaila Waongo were trained to use the equipment, the “Remote Camera Control” software to capture the image directly from camera to PC, and a software called "FileRenamer" to rename the images taken with the digital camera. This software also allows an organized archiving system by moving renamed images into appropriate folders, which facilitates future search.

Mr Jean Marc Bazié and Mr Lazare Sawadogo have been very cooperative and suggested a smart file naming system which is more flexible that the system used in Mali and Niger.

Climatological Database Management System

Following a training workshop on the new version of CLIDATA organized by the AGRHYMET Centre in Niamey for the CILSS member countries and some ECOWAS countries (27-31 October, 2014), new equipment composed of one server and one workstation and the new version of CLIDATA, was given to the countries. The License of the new version was provided 8 months later (June 2015). The new version was installed and the data are currently being exported from the old version to new version.

The CLIDATA data base contains daily data of the all synoptic stations, agrometeorological stations and climatological stations from the beginning of the stations up to April 2015.

Rainfall and extreme temperatures data for 22 stations (10 synoptic stations, 7 climatological stations and 5 agrometeorological stations) covering over 30 years per station were transferred for the WACA&DARE initiative

The Climsoft software is not used due to its “instability”. However, the plan is to install this system in the synoptic stations and train the observers of the stations to key enter the data at the station once a “stable” version of Climsoft is available.

During the CLIDATA workshop in Niamey, a *light CLIDATA version* was introduced to the participants. This version can be installed at the station level.

Work plan up to January 2016

Re-organization of the climatological paper archives

Documents	Deadline	Indicators	Observations
Monthly Climatological Tables (MCT)	End of August 2015	All MCTs are re-organized and stored	
Books for Synoptic stations	End of December 2015	All books are re-organized and stored	
Observations books for Agrometeorological stations	End January 2016	All books are re-organized and stored	
Observations books for Climatological stations			
Monthly Climatological Tables for Agrometorological and Climatological stations			

Imaging work plan of the climatological paper documents

Months	Number of years to be captured per month	Number of years effectively captured	Indicator % realized vs planned
July 2015	48		
August 2015	85		
September 2015	90		

October 2015	90		
November 2015	90		
December 2015	90		
Total	493		

National support team to support the Data Rescue activities in Burkina

The national support team for the Data Rescue activities is composed of:

Mr. Lazare Sawadogo
Mr. Jean Marc Bazie
Ms. Beogo Damata
Mr. Ambroise Belemnaba
Mr. Cyriaques Ki
Mr. Soumaila Waongo
Mr. Ali Zonga

The team is supervised by Mr Ernest Ouedraogo (This is likely to change as Mr. E. Ouedraogo is now the Director General of the Direction Générale de la Météorologie)

Main recommendations for Burkina

- Following a refined estimation of documents to be re-organized, 10 more shelves are needed (WMO)
- Designate an assistant for the CLIDATA system administrator (Meteo.Burkina)

Agence de la Météorologie du Mali (Mali – Météo

16 April – 15 May 2015

Briefing meeting

The WMO expert paid a courtesy visit to the acting Director of the ”Agence de la Meteorologie du Mali” (Mali-Meteo) Mr Djibrilla Maiga on 16 April 2015. The acting Director took this opportunity to conduct a meeting with his staff and the expert to have detailed information on the Terms of reference of the mission, the objectives of the project and the activities to be conducted.

Visit to UNDP

It took two weeks for UNDP Mali to go through the administrative clearance processes with the Malian customs to get the equipment purchased by WMO with Dan Office IT for the digital cameras and Kaiser Fototechnik for the copy stand.

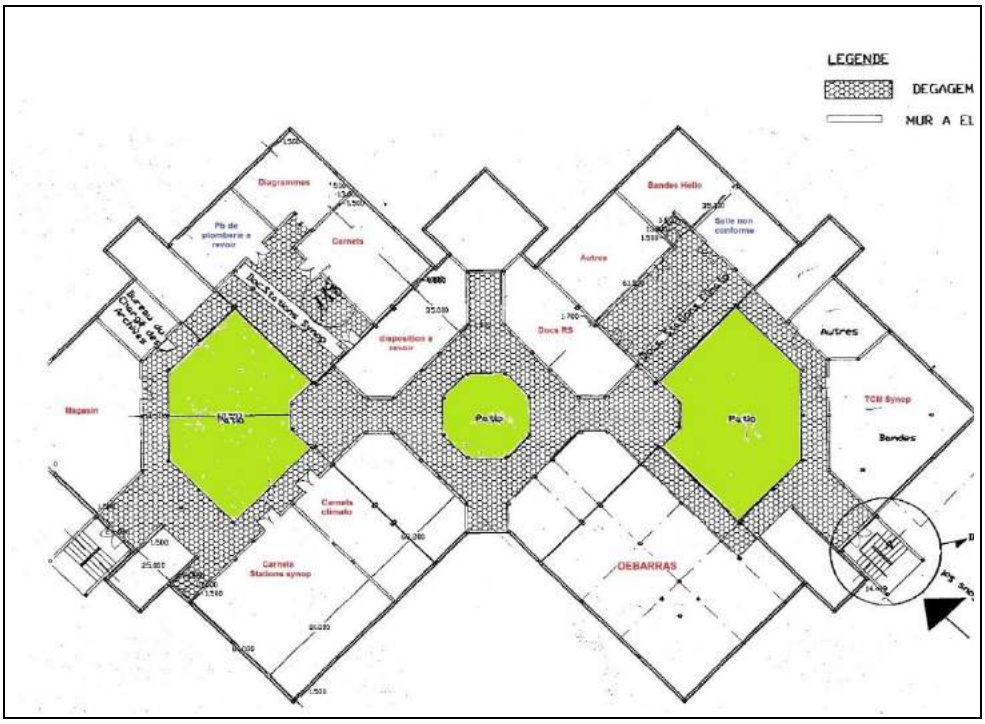
Reorganization of paper archives

The rooms of the basement of the building that serve as archiving rooms for the climate paper records contains very good shelves acquired by Mali-Météo from its own budget. The rooms and the shelves were full of dust and needed a thorough cleaning. The acting Director instructed his staff to hire a private company to clean the selected rooms and dust off the shelves and documents. The ceiling of on room was not water-proof and water was dripping from the ceiling. The decision was made not to use this room.

MM. Modibo Koné, Mamady Keita and Konate Sanogo of Mali-Météo were appointed to assist in the reorganization and they began to work immediately.

Two retired weather observers of synoptic stations, MM Mamadou Diakité and Makandian Keita, were identified and recruited through a part-time contract for 11 months with WMO to assist in reorganizing the climate paper records as of 1 July 2015.

The archive boxes previously purchased by Mali-météo was insufficient to store all the climatological paper records (Observations books, Monthly Climatological Tab es, Strip charts etc... The WMO expert purchased 300 archives boxes



Future allocation of the basement rooms for the climate archives (Meteorological Observation books, Meteorological Monthly Climatological Tables, Strip charts etc..)

One archiving room for MCTs

Work plan adopted for reorganizing the climatological paper archives

Activities	Documents	Duration	Observations
Reorganizing Monthly Climatological Tables (MCT) in archive boxes	1.) MCT of Synoptic Stations 2.) TCM Stations climato et agrometeo	3 months 2 months	
Reorganizing Observation books	1.) Observation books for Synoptic Stations 2.) Observation books for Stations climatological et agrometeorological stations	3 months 2 months	

Imaging the climatological paper records

Two PCs and two external drives were purchased through UNDP Mali. (Annex 2)

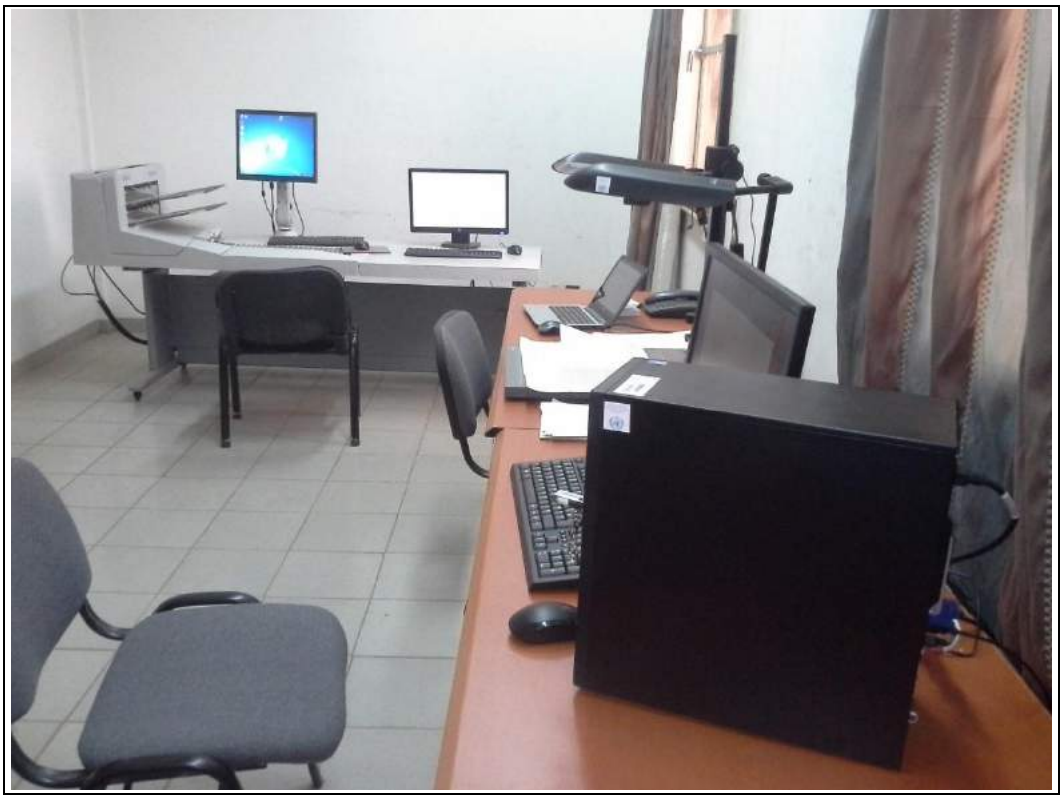
Mali-Météo acquired from its own budget, an A3 size fast scanner (OPEX DS2200) with Micronet company in Mali. The scanner is connected to a server and a workstation serves for the scanning.

OPEX DS22000 can scan two-sided and A3 documents. It uses software called the CertainScan. The annual License of CertainScan costs 1580 Euros. This License was not activated although Micronet has un-officially allow the use of the software up to June 1st, 2015

The staff of Mali-Météo were trained in December 2014 to use this equipment but the training was basic and nobody was able to use it.

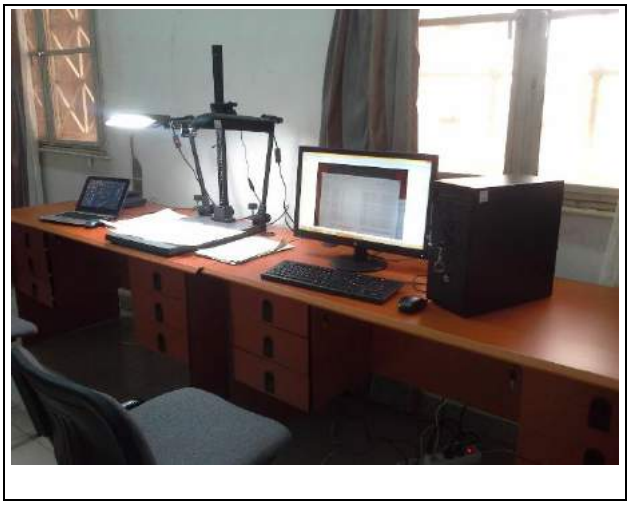
After two weeks of work, I was able to operate the OPED DS22000 scanner and I could trained MM Mamady Keita and Konate Sanogo on how to use this equipment and the associated CertaiinScan software. The License of CertainScan has been activated as from 1 June 2015.

The acting Director, Mr Djibrilla Maiga agreed to transform one big office into an “Imaging Lab” were the imaging unit (digital camera, copy stand and PC) and the OPEX DS2200 scanner were installed. MM Mamady Keita and Abdoulaye Sanogo were trained to use both equipment.



The “Imaging Lab”
Mali

The OPEX 2200 scanner OPEX



Camera, copy stand and PC installed

A software called "FileRenamer" (US $ 29 Annual License) to rename the image taken with the digital cameras was installed. This software also allows an organized archiving by moving renamed images in to appropriate folders, which facilitates future search. MM Mamady Keita and Konate Sanogo were trained to use it.

A second scanner acquired in the framework of a national project called “Protection civile* was installed to digitize strip charts

Mr Diarra Mamadou and Ms Habibatou Bathily were identified and recruited through a part-time contract for 11 months with WMO to assist in imaging the climate paper records as of 1 July 2015.

Work plan adopted for data capture with digital cameras

Activities	Documents	Duration	Observations
Capture	1.) Monthly Climatological Tables (MCT) for synoptic stations	4 months	
	2.) Monthly Climatological Tables (MCT) for climatological and agrometeorological stations	3 months	
	3.) Strip Charts (Rainfall and Humidity)	3 months	Scanner A3 / OPEX

Climatological Database Management

The CLIDATA server installed in 2005 encountered problems and the system was not operational until 2013. This procedure is awkward since CLIDATA has a more sophisticated data entry module with better quality controls.

Daily rainfall data of 118 rainfall stations and monthly and daily summaries of synoptic data from 13 synoptic stations and 12 agro-meteorological and climatological stations are entered in CLIMBASE and not directly into CLIDATA. They are then transferred in CLIDATA. This procedure cannot be explained to the extent CLIDATA provides a key-entry module ith more sophisticated quality controls.

Following a training workshop on the new version of CLIDATA organized by the AGRHYMET Centre in Niamey for the CILSS member countries and some ECOWAS countries (27-31 October, 2014), new equipment composed of one server and one workstation and the new version of CLIDATA, was given to the countries. The License of the new version was provided 8 months later (June 2015)

No other person except the system administrator, Ms. Ba Affoussiata, had access to CLIDATA. This was corrected after I suggested to Ms. Ba to provide users-access accounts in CLIDATA to three selected staff of Mali-Meteo. One staff of the Mali-Meteo should be assigned as assistant to the System administrator.

Ms Ba needs a formal training in the administration of Clidata. This is imperative if Ms. Ba Affoussiata is to play her role of System Administrator. Such training could be done either in Burkina under the supervision of Mr. Jean Marc Bazié or in Niger under the supervision of Mr Moussa Mouhaimouni. Mr Bazié and Mr Mouhaimouni are the best CLIDATA system administrators in West Africa.

In the framework of the WACA & DARE initiative, rainfall data and temperature of 22 stations for over 30 years (18 synoptic stations and 4 agro-meteorological and climatological stations) were transferred to ACMAD

National support team to support the Data Rescue activities in Burkina

The national support team coordinated by Mr Modibo Kone is composed;

Ms. Afoussiata Ba
Mr. Adama Kone
Mr. Abdoulaye Sanogo
Mr. Mamady Keita
Mr. Diarra Mamadou
Ms. Habibatou Bathily
Mr. Mamadou Diakité
Mr. Makandian Keita

Main Recommendations in Mali

Climatological archiving rooms

1.) Move as soon as possible all the documents from the basement room in which water drips from the ceiling. This room should not be used for archives

2.) Acquire working blouses and mufflers for the four officers.

3.) Labeled doors of rooms containing each type of archives.

Scanning and Imaging room

1.) Reinstall Windows 8.1 on the second PC and connect the A3 scanner acquired through the "Emergency Preparedness project". This equipment should be uses to scan strip charts)

2.) The spare camera should be kept by Mr Adama konaté and used if the camera breaks down

3.) The server of the OPEX DS22000 should be transferred to the servers room

4.) Mali-Météo should include in its annual budget the renewable of the CertainScan software license (1,570 euros) for June 2016

Database Management System (CLIDATA)

1.) It is imperative that a staff with computer knowledge be assigned as deputy to the CLIDATA system administrator.

2.) Create CLIDATA user accounts for Mr Modibo Kone, Mr Abdoulaye Sanogo and Mr Mamady Keita (Mrs. Affoussiata Ba) - DONE

3.) Backup the CLIDATA database on the second 2-Tera bytes external drive (Ms. Ba Affoussiata.

4.) Organize for Ms Affoussiata Ba and at least another staff of Mali-Météo, a three-week training on the CLIDATA system administration. Jean Marc Bazié from the Direction générale de la Météorologie of Burkina agreed to conduct this training in Mali. (period to be determined) (Action WMO)

Direction de la Météorologie Nationale Niger

6 June 2015 - 4 July 2015

Briefing meeting

A first meeting was held on 6 June 2016 with the Director and key officials of the National Meteorological service of Niger and the WMO expert. The Director and his staff welcomed this WMO Data Rescue initiative and assured the expert that the Meteorological service will provide full support for this project. The Director explained the new structure of the Met service and appointed Mr. Moussa Mouhaimouni and Mr. Saadou Moussa to work with the expert,

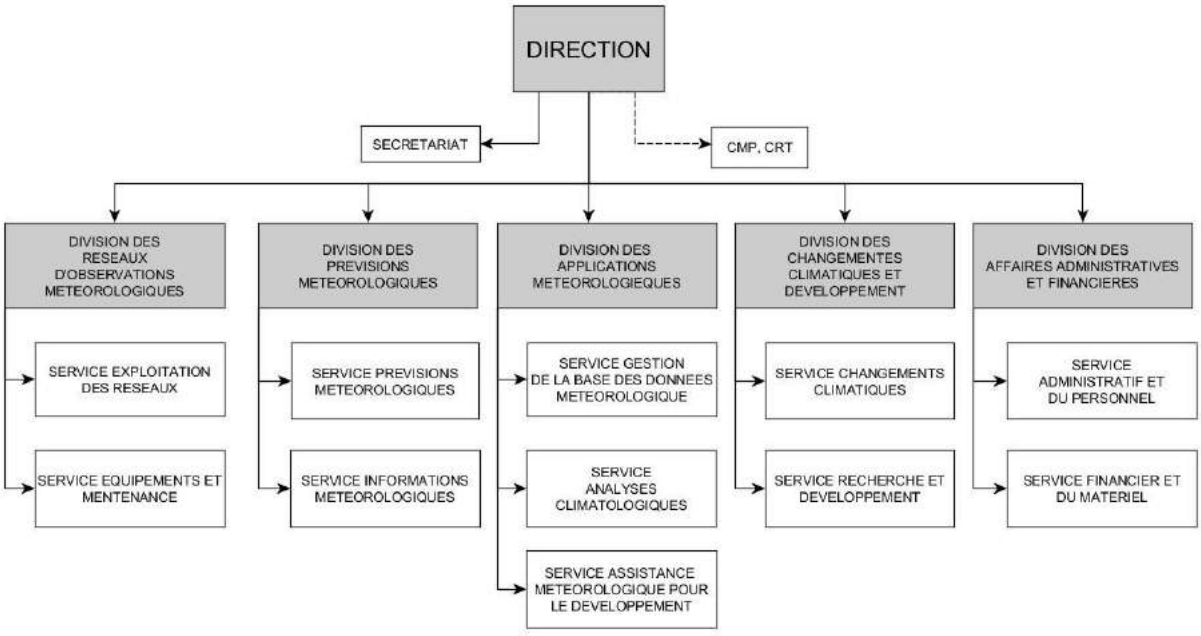


Chart of the Direction de la Météorologie of Niger

Visit to UNDP

After three visits to UNDP in Niamey with all the mail sent by WMO, it took three weeks to get the cameras, the copy stands out of from customs.

Re-organization of the climatological paper archives

A quick visit of the paper archives room showed that this room not suitable at all. Two big windows let the dust penetrate the room and the floor is entirely degraded. The room needs some heavy masonry work if this room is to be retained for the climatological paper records.
The Director suggested to use another room as an alternative but this room is too small and also needs masonry work. Therefore, he suggested to focus on the imaging of paper records and the climatological data management with the system CLIDATA. Nevertheless, the

archives are well organized. The Monthly Climatological Tables (TCM) and the observation books are grouped by decades and stations.

The shelves are not of good quality and are not suited for archiving the records. New shelves need to be purchased. Only one company offers good quality shelves but they are too expensive (more than 3 times the shelves constructed in Burkina). It is suggested to purchased them in Burkina and transport them to Niamey.

In accordance with the Director, it was decided to hire a private company to dust off the room and use blowers to remove dust from the documents before storing them in archives boxes. Company “Le Bouclier” was selected the cleaning was completed.

Climatological archives room

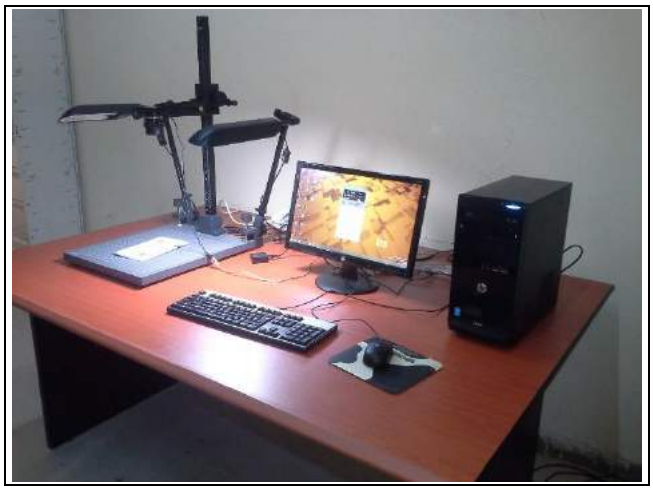
Floor of the Climatological archives room

The shelves used in Niger need to be changed

One of the window of the archive room

Recruitment of part-time staff

The Ministry of Transports of Niger has recruited for the National Meteorological service some 20 young graduates in various fields. Two of these graduates are archivists and were designated by the Director to image the paper archive using the digital cameras. Some of these newly recruited employees will be used to reorganize the paper archives. The Director decided that there was no need to hire part-time personnel



Imaging equipment in Niger

The two archivists Mr. Lompo Mano Nasser and Ms. Nana Aichatou capturing data from paper archives

Equipment purchased locally

1000 archive boxes of 10 cm size and 120 archive boxes of 20 cm were purchased for the observations books and the Monthly Climatological Tables respectively. Due to Purchase

Orders (POs) not received on time, the boxes were not delivered to the Met service during my stay.

Urgent activities to be conducted

1.) The whole current room (floor, walls, windows etc.) needs heavy masonry work .

2.) We could not find a company to make appropriate shelves. Only one company could provide shelves but these shelves were too expensive. The possibility of buying the shelves in Ouagadougou (Burkina Faso) and convey them to Niamey was suggested by the Director of the Niger Met service.

Imaging activities using digital cameras

Due to the slow customs procedures by UNDP in Niamey, the equipment (digital cameras and copy stand) were received late.

One of the computers, the copy stand and one camera purchased under this project were installed to digitize climate archives

The software "FileRenamer" (US $ 29 Annual License) to rename the image files created was installed. This software also allows archiving image files organized by redirecting them to the appropriate directories, which facilitates the search. Officers also learned to use it.

Work program to image paper climatological records

2015

Synoptic Stations	July	August	September	October	November	December
Maradi						
Niamey						
Tahoua						
Zinder						
Agadez						
Birni N'Konni						

The imaging the climatological records of Tillabery, Maine Sorao, Dosso, Goure, Diffa, Bilma, and Gaya is scheduled for 2016.

Climatological Database Management

The License of the new version of CLIDATA obtained through the AGRHYMET Programme was in communicates in June 2015 to the CILSS and some ECOWAS countries and is ready to be installed.

The version was not installed during my mission due to multiple responsibilities of the head of CLIDATA system of Niger, Mr Moussa Mouhaimouni

The four workstations PCs connected to the server CLIDATA for data entry are obsolete and should be replaced rather quickly. The keyboard keys are blocking and sometimes break off, causing input errors which requires heavy quality controls afterwards.

Daily rainfall data of 200 rainfall stations and 12 daily parameters of the 15 synoptic stations daily data from 24 agro-meteorological and climatological stations are have been key-entered in CLIDATA

Daily data prior to 2005 were imported from CLIMBASE and CLICOM into CLIDATA
The stations metadata in CLIDATA are incomplete and sometimes inaccurate in particular: stations opening date are all set to January 1st 1900 and the geographical coordinates (latitude, longitude) are either missing or wrong.

This problem must be corrected as soon as possible using Global Positioning System (GPS) for the Synoptic, climatological and Agrometeorological stations.

Rainfall data and Min and Max Temperatures of 15 synoptic stations were transferred to ACMAD for the WACA&DARE initiative

National support team to support the Data Rescue activities in Niger

The support team to supervise the activities is composed;

Ms. Sitta Adamou
Mr. Moussa Mouhaimouni
Mr. Moussa Saadou
Mr. Ganda Boubacar
Mr. Lompo Mano Nasser
Ms. Mahamadou Nana Aichatou Ibrahim

The team in coordinated by the PR Mr Labo Moussa

Main recommendations in Niger

Paper archives rooms

1.) The floor of the current archive room needs to be repaired as a matter of urgency. The wall needs painting etc.

2.) It was not possible to find a company which could to make appropriate shelves. One company could provide shelves but these shelves were too expensive. The possibility to purchase the shelves in Ouagadougou in Burkina Faso and transport them to Niamey in Niger was suggested by the Director of Meteorology from Niger. This possibility can be investigated with the UNDP in Ouagadougou and Niamey. If this solution is adopted, 25 shelves are needed.

Climatological Data Management System CLIDATA

1.) It is urgent to designate an assistant for the CLIDATA system Administrator Mr Moussa Mouhaimouni

2.) It is also urgent to replace the 4 PCs used for data entry

African Centre for Meteorological Applications for Development (ACMAD)

24 – 25 June 2015

IEDRO project

The IEDRO project which started in 2013 is still going on. With a UNDP one-year project of 100,000 $US, ACMAD was able to recruit a team of 4 persons to image the microfiches. To show the importance of rescuing these microfiches, UNDP requested ACMAD to key-enter data of two stations from the imaged files in a database. Tahoua in Niger and Dori in Burkina were chosen and the data of these two stations are currently being key-entered. These data will be used for project development in these two regions.

WACA&DARE

Data currently in the system are gathered from countries experts coming for training at ACMAD. Daily rainfall data, Min-Temp data and Max-Temp data of 23 stations from Cameroun, Nigeria are in the WACA&DARE database. More data from some countries including Burkina Faso, Mali and Niger are available and will be entered in the system. But in general, data from the countries to feed WACA&DARE are scarce.

It is suggested that the WMO Regional Office for Africa through its sub-regional offices in Nairobi and Abuja be involved in this WACA-DARE project. They could use all the forum with PRs from Africa to show the importance to calculate climate indexes using Rclimdex software.

CLIMSOFT

A joint ACMAD-WMO Regional Workshop on Climate Database Management System focusing on the CLIMSOFT system was organized from 12 to 16 January 2015 in Ndjamena, Chad to:

- promote the exchange of knowledge on the status of observing systems and climate data in countries;
- Train national experts in the installation and operation of climate data management system (CLIMSOFT);
- Improve the recognition, access and retrieval of climate data for different uses;
- Accelerate the transition for reporting traditional observation data in Table-Driven Code Forms (TDCF): BUFR or CREX

Participants of 20 countries attended the workshop and were trained on the installation and management of CLIMSOFT.

Following the meeting in the strategy for CLIMSOFT in Nairobi, Kenya, the precise role of ACMAD with regard to CLIMSOFT is yet to be clearly defined, particularly after Mr Albert Mhanda left ACMAD.

Conclusion

In all the three countries, this data rescue project is seen as a major contribution of WMO in the preservation of the climatological archives and the development of good quality national climatological databases.

During the mission, the expert received full support from the Direction Generale de la Meteorologie of Burkina Faso, the Agence Nationale de la Meteorologie of Mali and the Direction Nationale de la Meteorologie of Niger. All three institutions expressed enthusiasm for the project and appointed staff to work with the expert.

Despite its slow process, UNDP has been helpful in getting the equipment out of customs and in the purchase of equipment locally

A review of what has been achieved should be undertaken in 6 months through a one-week mission in each of the three countries. The objectives of this mission will be

1. Assess what has been achieved with regard to:
    - The re-organization of the paper archives
    - The imaging of the climatological paper records
2. Establish a plan to sustain the data rescue project
3. Initiate the development of “climatologies” in different sectors such as water, health, agriculture, energy, agriculture etc. to contribute to the Global Framework fro Climate services.

Annex 1

List of Persons met during mission

Direction Générale de la Météorologie - Burkina Faso

Dr Dieudonné Pascal Yaka, PR of Burkina Faso with WMO

Mr. Ernest Ouedraogo, Director of Climatology and Observation network

Mr. Pierre Zongo Director of Applications and Disasters Risk Reduction

Mr. Koudaogo Simporé, Director of Infrastructure and Equipment

Mr. Jean Bosco Yilboudo, Chief Public relations

Mr. Badini, Chief Administrative, Financial and Legal affairs

Agence de la Météorologie du Mali (Mali-Météo) MALI

Mr. Djibrilla MAIGA Directeur General p.i. de l'Agence Nationale de la Météorologie du MALI

Mr. Birama DIARRA Directeur des Application Météorologiques et Climatologiques

Mr. Mamadou Adama DIALLO Coordonnateur du programme de pluies provoquées et du cadre national pour les services climatiques

Mr. Aliou TEKETE Directeur du Réseau d'Observation et des Prévisions Météorologiques

Mr. Moussa NIAMBELE Directeur Administratif et Financier

Mr. Modibo KONE Chef du Service Climatologie

Direction de la Météorologie Nationale, BP. 218 Niamey - Niger

Mr. Moussa LABO Directeur de la Meteorologie Nationale

Mr. Abdoul Karim TRAORE Chef Division Changement Climatiques et Développement

Mr. Mamane TCHIFFA Chef Division des Réseaux d'Observation Météorologiques;

Mr. Mr. Lawan Gaptia KATIALOU Chef Division Prévisions Météorologiques

Mr. Ganda Aboubacar Chef Service Gestion des bases de données Météorologiques

Mr. Moussa Mouhaimouni Chef Service Analyses Climatologiques, Responsable du Système de Gestion de la Base de Données CLIDATA

Mrs Sita Adamou, Chef service Applications Météorologiques

Alhadir Chef Division Affaires Administratives et Financières (DAF);

African Centre for Meteorological Applications for Development (ACMAD)

Mr. Alhassane Adama DIALLO
Director General
Email : dgacmad@acmad.org

Mr. Andre KAMGA FOAMOUHOUE
Chief, Climate and Environment Department

Ms. Mariama Sabiou ABBAS
Web master and Climsoft administrator

Annex 2

Equipment and material purchased for the three countries

	Burkina Faso	**Mali**	**Niger**
Equipment purchased through WMO procurement Unit	2 Digital cameras Sony 1 copy stand	2 Digital cameras Sony 1 copy stand	2 Digital cameras Sony 1 copy stand
Equipment and services purchased through UNDP in each country	2 PCs 2 Tera-byte External Disks	2 PCs 2 Tera-byte External Disks	2 PCs 2 Tera-byte External Disks 1000 archives boxes of 10 cm 120 archives boxes of 15 cm
	18 shelves (each shelf is double face, 2 meters wide and 2.5 meters high)		Cleaning of the archives room and dusting off the paper records by a private company “
Purchased by the WMO expert	300 archives boxes 1 roll of Kraft paper and small material	300 archives boxes	

Dispatching of the equipment in each country

For the imaging unit:

1 PC and
2 digital cameras
1 copy stand
1 external 2-Tera bytes disk

For the Climatological database management system

1 PC
1 external 2-Tera bytes disk

MALI - Allocation of the basement rooms for the climate archives (Meteorological Observation books, Meteorological Monthly Climatological Tables, Strip charts etc..)

Annex 3


LEGENDE
DEGAGEMENT
MUR A ELEVER
Diagrammes
Pb de plomberie a revoir
Carnets
Bureau du Chargé des Archives
Doc Stations Synop
disposition a revoir
Autres
Docs RS
Bandes Helio
Salle non conforme
Docs Stations Climato
Autres
TCM Synop
Bandes
Magasin
Patio
Patio
Patio
Carnets climato
Carnets Stations synop
DEBARRAS
Détail A
Entrée Sous Sol

Annex 4

Mali-Météo

DGM Burkina

DMN Niger

Monthly reports from the three countries

Period of 1st – 31st July 2015

DIRECTION GENERALE DE LA METEOROLOGIE
DIRECTION DE LA CLIMATOLOGIE ET DU RESEAU METEOROLOGIQUE

BURKINA FASO
Unité-Progrès-Justice

PLANIFICATION DES ACTIVITES DE NUMERISATION DES DOCUMENTS METEOROLOGIQUES

MOIS	Nombre Prévu d'Années à Numériser dans le mois	Nombre d'Années Numérisées dans le mois	Indicateur (Années-Réalisées/ Années-Prévues) en %
Juillet 2015	48	62	129%
Août 2015	85		
Septembre 2015	90		
Octobre 2015	90		
Novembre 2015	90		
Décembre 2015	90		
Total	493		

NB : -**Les TCM de Ouaga-Aéro (1952-2013) ont été numérisés. Il reste seulement une année à numériser pour Ouaga-Aéro.**

- **Prochaines étapes (Mois d'Août) : Ouaga-ville et Bobo-Dioulasso**

ACTIVITE DE CLASSEMENT DES DOCUMENTS

DOCUMENTS	ECHEANCE	INDICATEURS	POURCENTAGE REALISE
TCM SYNOPTIQUES	Fin Août 2015	Tous TCM Synop sont classés	
CARNETS SYNOPTIQUES	Fin Décembre 2015	Tous les carnets synop sont classés	
CARNETS AGRO	Fin Janvier 2016	Tous les carnets agro sont classés	
CARNETS CLIMATO			
TCM AGRO ET CLIMATO			

- **Prochaines étapes (Mois d'Août) : Classer les TCM Synop.**

MINISTÈRE DE L'EQUIPEMENT
DES TRANSPORTS ET DU
DÉSENCLAVEMENT

RÉPUBLIQUE DU MALI
UN PEUPLE- UN BUT - UNE FOI

AGENCE NATIONALE DE LA MÉTÉOROLOGIE

DIRECTION DES APPLICATIONS MÉTÉOROLOGIQUES
ET CLIMATOLOGIQUES

SERVICE CLIMATOLOGIE

Etat d'avancement des activités de sauvetage des données climatologiques à la date du 31 juillet 2015

➢ Numérisation

Les Tableaux Climatologiques Mensuels (TCM) des stations synoptiques suivantes pour les années indiquées ont été numérisés:

- Bamako-Sénou : de 1975 à 2014 (année manquante : 2003) ;
- Nara: de 1923 à 2014 (années manquantes : 1927-1928-1929-1930-1931-1938) ;
- Mopti : de 1925 à 2014 (année manquante : 1989) ;
- Nioro du Sahel ; 1962-2014 ;
- Kayes ; 2013-2014 ;
- Kéniéba ; 2013-2014 ;
- Kita ; 2013-2014 ;
- Yelimané ; 2013-2014 ;
- Sikasso : 2013-2014 ;
- Koutiala : 2013-2014 ;
- Ségou : 2013-2014 ;
- San : 2013-2014 ;
- Bougouni : 2013 ;

➢ Archivage

- Stations synoptiques : tous les TCM des stations synoptiques ont été classés avec des étiquettes.

- Stations agro : les TCM des stations de Sotuba, Katibougou, Niono, Sélingué, Ansongo et Niafunké ont été classés avec des étiquettes.

- Postes pluviométriques : les fiches pluvio des postes de Bafoulabé, Koury, Kogoni, Toukoto, M'Pessoba, Koulouba, Koula, Satabougou, Kara pour un certain nombre d'années ont été classées avec des étiquettes.

Bamako, le 11 août 2015
Chef Service Climatologie
Modibo KONE

Direction de la Météorologie National (DMN) du Niger
B.P. 128 Niamey

Etat de la numérisation

STATIONS	1939-1940	1941-1950	1951-1960	1961-1970	1971-1980	1984-1990	1991-2000	2001-2010	2011-2020
AGADEZ									
BILMA									
BIRNI N'KONNI									
DIFFA									
DOSSO									
GAYA									
GOURE									
MAGARIA									
MAINE SOROA									
MARADI									
NGUIGMI									
NIAMEY									
TAHOUA									
TILLABERY									
ZINDER									

MARADI a été entièrement numérisé jusqu'en 2010