ANNEX 4

DATA RESCUE BY IDCC
Lessons Learned

Dr. G. D. Schietecat
Co-ordinator I.D.C.C.
Head of Data Management of RMI

The WMO-Belgian data rescue projects DATA BANK & DARE I

The main goal of both projects has been the preservation of meteorological and hydrological data and metadata primarily through microfiching of microfilmed original meteorological observation forms.

A first data rescue project called **WMO-Belgium DATA BANK project** took place from 1 January 1979 until 31 December 1988. For the 9 CILSS countries, documents were microfilmed, microfiched and some data were digitized until 1992 at IDCC (International Data rescue Co-ordination Centre in Brussels). For some non-CILSS countries, the data of one station (mostly the one of the capital) were digitized. The project resulted in a data base on microfilm (395 films rescued in 1979-1988 and 20 films received from 1989-1996), microfiche (22,616 fiches representing over one million documents) and magnetic tape, transferred to the regional AGHRYMET Centre in Niamey (Niger) with a copy kept at RMI (Royal Meteorological Institute of Belgium). Each of the 9 CILSS countries received a diazo-copy of their microfiches with inventory too.

A new project called **DARE I** (Data Rescue for Regional Association I) was set up for 42 non-CILSS countries in Africa. Officially DARE I started 1 January 1989. Until 30 June 1997 it was executed by the IDCC. 69,134 microfiches representing nearly three and a half million forms have been rescued (885 films rescued in 1988-1996 and 870 films received from 1990-1996 with still 363 unexposed films in RA I). Worth mentioning is that during the rescue missions, the production amounted to 2 microfilms per day, on average, representing about 4,500 observation forms.

The original microfiches of both projects are at RMI with a diazo-copy of the whole set at ACMAD (Centre Africain pour les Applications de la Météorologie au Développement). Next to the microfiches 1,621 microfilms (silver film or diazo-copy) are at RMI, reproduced during the period 1979-1993.

The DARE I project

32 non-CILSS countries and ACMAD received a microform equipment consisting of a microfilmer and a microfiche reader/printer for continuation of the data rescue activities at national level. AGHRYMET received the same equipment to continue these activities in the 9 CILSS countries. All participating countries have received all microfiches made at IDCC from the start of the project up to and including 31 December 1996. All these countries have received their final microfiche inventory in book form and on 3.5” diskette with the possibility to modify and complete their microfiche inventory.

From 1 July 1997 on, each DARE I participating country is able by itself to microfilm the manuscripts and to complete their microfiche inventory. The major task of ACMAD are the purchase and development of the microfilms and the filling up and duplication of the microfilm jackets (a diazo-copy of a microfilm jacket is called microfiche).

Completion activities of DARE I

The microfilming of all documents by the IDCC was evidently not feasable. However, our data rescue missions proved that in almost all countries, the IDCC could microfilm all available MCO/TCM (Monthly Climatological Observation/Tableau Climatologique Mensuel) documents after two missions to the country concerned. The roving team consisted of 3 persons, the roving period of 10 working days. On 30 June 1997, 31 out of 42 countries could be considered completed for DARE I in accordance with the directives of WCDMP.

The IDCC's method adopted to finish DARE I during the data rescue missions was:

- During the first mission, a site survey or an installation and microfilming mission, the Director of the Meteorological Service or the DARE I contact person (mostly the Head of the Climatological Department) and the IDCC's coordinator discussed the station documents to be microfilmed.

- To this end, the synoptical stations of each climate region of the country were ordered according to the longest observation series.
- The WCDMP standard of 10 stations per 250,000 km² determined the minimum number of synoptical stations to be microfilmed – the observation period ran at least until 31 December 1990.
- When the norm was reached, the microfilming continued with the climatological and later on the hydrological stations, if possible according to the same scheme.
- If the norm was not reached, we can only hope that the Met Office will continue microfilming all the desired documents.
- If the Permanent Representative of a country with WMO did not want to have documents microfilmed, or he/she estimated that a sufficient amount of documents had been microfilmed, the project is considered finished as well.

IDCC's CD-Roms

For AGHRYMET, ACMAD and WMO, two CD-Roms called IDCC_1 and IDCC_2 were made with on it:

- The final microfiche inventories of all participating countries (with legend).
- For each country, an example of all types of microfilmed documents (=photocopies of documents on the microfiches).
- The Station History inventories for all synoptical stations (lists verified by the African countries themselves).
- The catalogue of microfilmed synoptical, climatological and hydrological documents available at IDCC (in graphical presentation).
- 'Readme' files with how to use information and contents on both CD-Roms.

Digitizing

It was originally planned to digitize a sub-set of data according the WCDMP recommendations but due to the poor condition of data forms and limiting funding, priority was given to microfilming. A major task remains digitizing the DARE I data on microfiches and microfilms at IDCC (until 31 December 1996) and at ACMAD (from 1 January 1997 on) as digitizing these data is a major priority in WMO's CLICOM project.

Continuation of DARE I

As from 27 May 1997 on, the DARE I coordination was transferred to ACMAD in Niamey. ACMAD received IDCC's PC network, the microform equipment with remaining supplies and a diazo-copy of the 91,750 microfiches at IDCC (+ 2,408 new microfiches to be duplicated and inventoried at ACMAD).

The actual role of IDCC is to give general information on WMO's data rescue activities and to be responsable for the WMO data bank on microfilms/microfiches from 9 CILSS and 31 non-CILSS countries. A Memorandum of Understanding must be filled in to consult the fiches.

Lessons

Project document

1. The Project Document is highly important and should be as clear as possible (mostly drawn up by 'experts' and managed by 'co-ordinators'). The document should be flexible regarding field work.

2. If possible, the Project Document should give priorities regarding the observing stations, type of data,…

3. During the period 1989-1991, the IDCC worked with a Project Document with a working plan split up in 5 overlapping phases which was in practise impossible to perform. During the period 1992-1996, IDCC opted to work according to tasks which could be finished in a rather random order, depending on the circumstances and the budget allowances.
   The tasks called phase points were: Site Survey missions, Installation and Training missions, Follow-up missions, Station History (metadata), equipment purchase, countrywide filming by national staff, Regional Centre co-ordination, selection of Reference Climatological Stations (for the Global Network of Climatological Stations), inventorying, cataloguing, collecting and merging data from other countries, processing of films, information management, project management.

Reports

4. Reports like semestrial activity reports, reports of the meetings of the Supervisory Committee and mission reports are necessary for a good follow-up of the project.

Main problems

5. Some countries have been hesitant to join the project because of the guarantee of the security of data at the IDCC. Transferring the project to ACMAD seems to overcome this problem.

6. In many countries of Africa, the IDCC had to face the feeling of the countries that they are being robbed when microfilming their documents. Before filming is started, good arrangements should be made to overcome misunderstandings. The filming of a restricted data set (like 10 stations per 250,000 km²) is preferable.

7. To get a clear overview of what remains to be microfilmed or digitized in different countries of Region I is still problematic: the roving team was not always correctly instructed and got not always access to (all) the archives in spite of the agreements of the P.R. with WMO and the recommendations of WMO/WCDMP.

8. In Regions I and IV, meteorological documents are deteriorating very quickly. If we only focus on digitizing the data, most documents will be lost forever. Digital filming and optical scanning are at the moment, the best alternative for microfilming and microfiching.

9. The Religion problem: one has to take into account the daily interruptions and the non-working days (on Friday and Saturday and Sunday in many countries of RA I).

Transfer of the project

10. The transfer to ACMAD of the coordination of the data rescue activities was fixed at the beginning of the project. The difficulty is that the whole process (microfilming – development of microfilms – filling up of jackets – diazo-duplicating of the jackets - inventorying) was pointed out for a Belgian environment. The climatic and working conditions at ACMAD are highly different. In our opinion, a digital filming process is more likely to succeed. Moreover, microform equipment and microfilms/microfiches have become very expensive last years (for example, the diazo-copy of 1 microfiche costs over 0.1 $).

Equipment

11. Equipment should not be sent as a package but separately: during transport, a package is sometimes separated which can cause a lot of problems with customs clearance.

12. Sending equipment that will not remain in the country, in advance, is always risky (due to customs regulations).

13. Equipment that will remain in the country has to be send long enough beforehand, at least three to four weeks before the start of the mission.

14. Taking equipment along as hand-luggage is the best solution, but mostly the most expensive. But be aware of the fact that travelling with these devices without the correct customs documents entails very big problems (except with a special passport).

15. The (ir)regularity of power fluctuations and power supply is a major problem in Africa. A power stabilizer and a power generator are no luxury addings to the equipment.

16. In most African countries where the microform equipment was sent but not mounted by IDCC's experts, under the so-called 'Quick Start' procedure, the donated equipment appeared not to function the way it should.

17. The delivery of the equipment is best prepared and executed together with the Installation mission.

18. Be aware of supplies like toner, ink, drums, diskettes, CD-Roms… for copiers, printers, PC's. These supplies are often expensive and sometimes not available in African countries.

Information

19. A leaflet or brochure describing the project was very helpful to avoid misunderstandings.

20. A booklet on data rescue experience in Region I and an Operational Handbook on the project were also very helpful.
All non-CILSS countries received a documentation package on DARE I (leaflet + booklet + Operational Handbook).

21. Our Memorandum of Understanding to be filled in before data can be consulted, worked very well (the signature of the P.R. of the country concerned is essential).

22. During all Installation missions, along with the user's manuals, a brochure containing tips for the exact use of the equipment and a text on the preparation of the documents before starting the microfilming was distributed.

Missions

23. The communication problem: a telephone call/letter/telex/fax/e-mail to the Permanent Representative to prepare the mission (contact person, clearance of equipment, assembling and preparing the documents, station histories, room with electricity, local teams, local transportation,…) is highly advisable. However, in many cases we received no answer.

24. The transportation problem: for security reasons, the roving team should not hire a car and rather make use of the facilities of the Met. Office (which means, in general, long waiting times).

25. The working conditions were quite different in every country calling for a different approach in almost every instance.

26. Quick Start missions: microfilming started before the donated equipment was shipped and the installation was left to the countries. This proved to be pernicious even with a manual and supplementary instructions. Therefore, microfilming was only started after the shipment of the equipment and the training of one or more local teams.

27. A Site Survey mission is not plain sailing all the way, and staying at least four days on the spot is certainly no luxury. A Site Survey together with an Installation mission can also produce the desired results.

28. During Installation and Training missions, local staff always helped the IDCC team. However, during Follow-up missions, help was scarce.

29. 3 persons per roving team working at a frequency of 4 to 6 missions a year on 15 working days for a Site Survey + Installation and Training mission, to 10 working days for a Follow-up mission gave the best results.
A roving team is best replaced by another team after 5 year of continuing missions.

30. A mixed roving team consisting of Belgian and African experts led to a lot smoother training session but microfilming slowed down considerably.

31. Special attention was given to the working of the equipment delivered for the CLICOM project. To this end, an informatician joined the roving team (one of the 3 persons). In some countries we could not see the functioning of CLICOM because we were not allowed to visit the computer room.

32. The assistance of UNDP regarding border-crossing, equipment clearance and even hotel reservations was mostly good and very appreciated.

Payment of local staff

33. Payment for overtime microfilming was allowed during the DATA BANK project but not during the DARE I project. This lead to more than twice as many microfilms during the DATA BANK project but during DARE I Follow-up missions in so-called 'Quick Start' countries, no one was willing to help anymore (with their superior's approval).

34. In one country, the local cooperation to DARE I was made dependent upon a daily payment of the local staff also due to a payment for overtime microfilming during a 'Quick Start' mission.

Supervisory Committee

35. An administrative and scientific committee consisting of the President of Region I and representatives of WMO, the Belgian funding administration and the RMI, evaluated, supervised and reorientated (if necessary) the workplan and budget.
During yearly meetings, a list of countries was drawn up for data rescue activities. This proved in practise 2 major disadvantages:

- Upcoming dangerous situations: some African countries became too quickly unsafe for travel and rescue missions during the following year.
- Missing advantages: most airlines offer very low fares for certain destinations during certain periods.