



MEDARE Expert Group meeting on
Developing an implementation strategy for
building Mediterranean long-term, high
quality and homogenised climate datasets
(27-28 September 2012, Istanbul, Turkey)

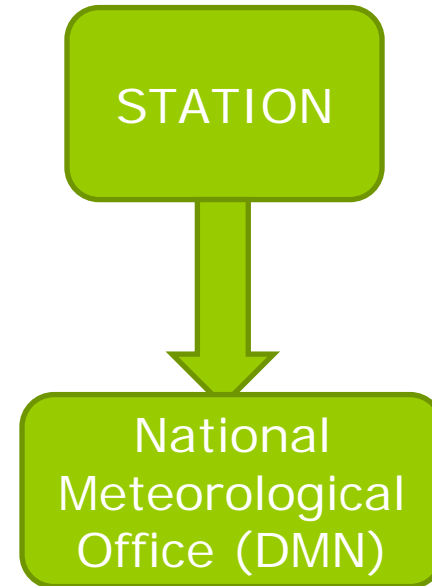
Morocco

By Fatima Zohra El GUELAI,
Moroccan NMHS

Climatological data flow

Before 2000

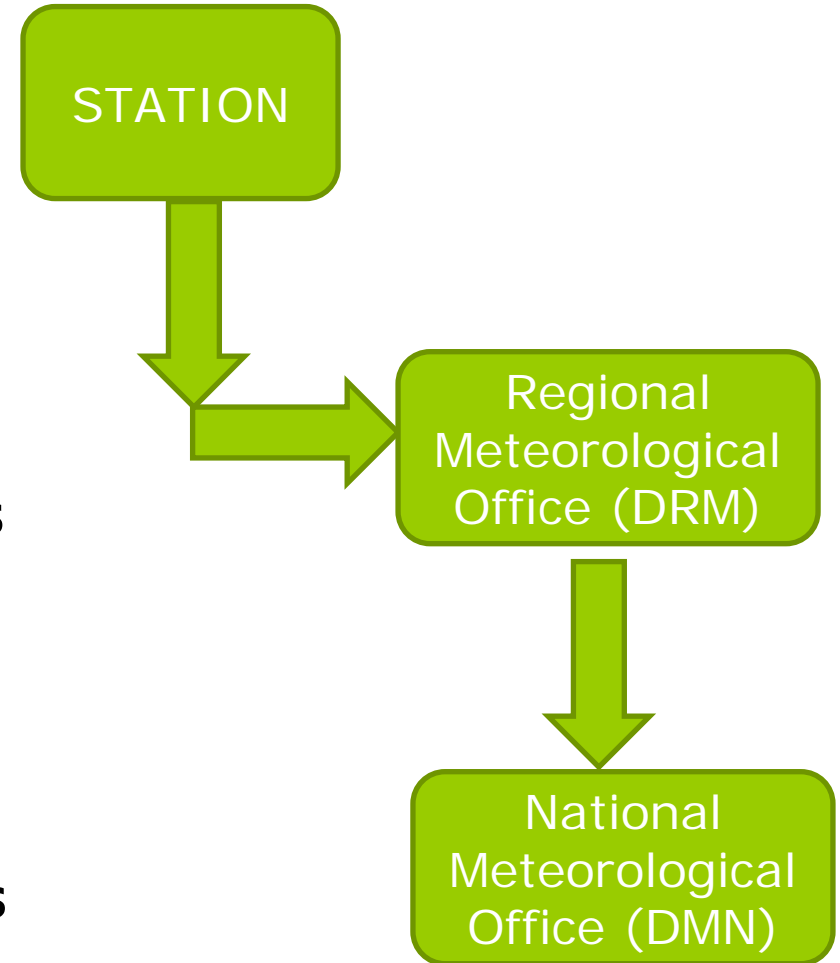
- Paper documents (CRQ, TCM ,...) were sent and archived at the DMN
- Data key entry was done at the DMN
- Data was stored in the CLICOM database

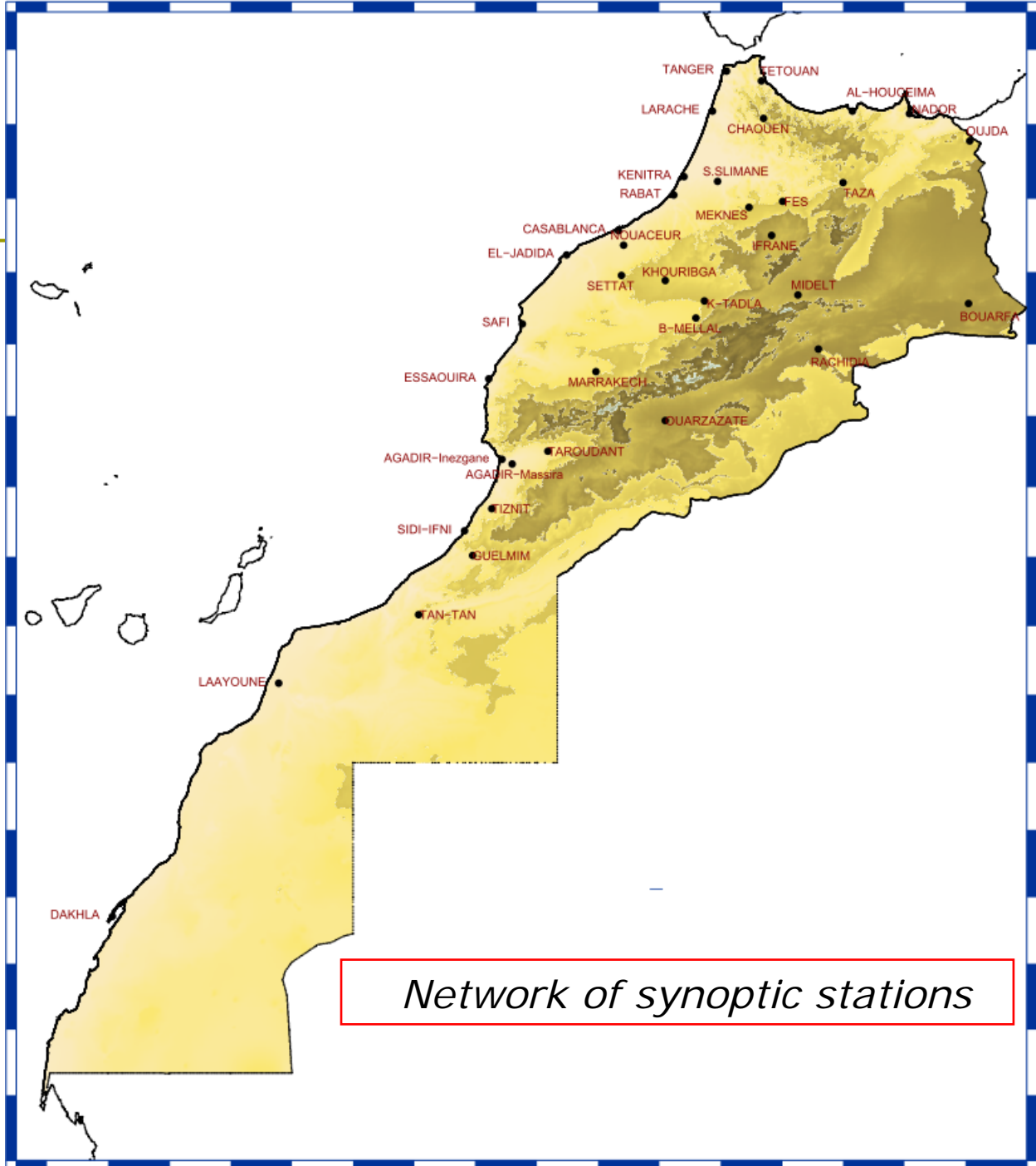


Climatological data flow

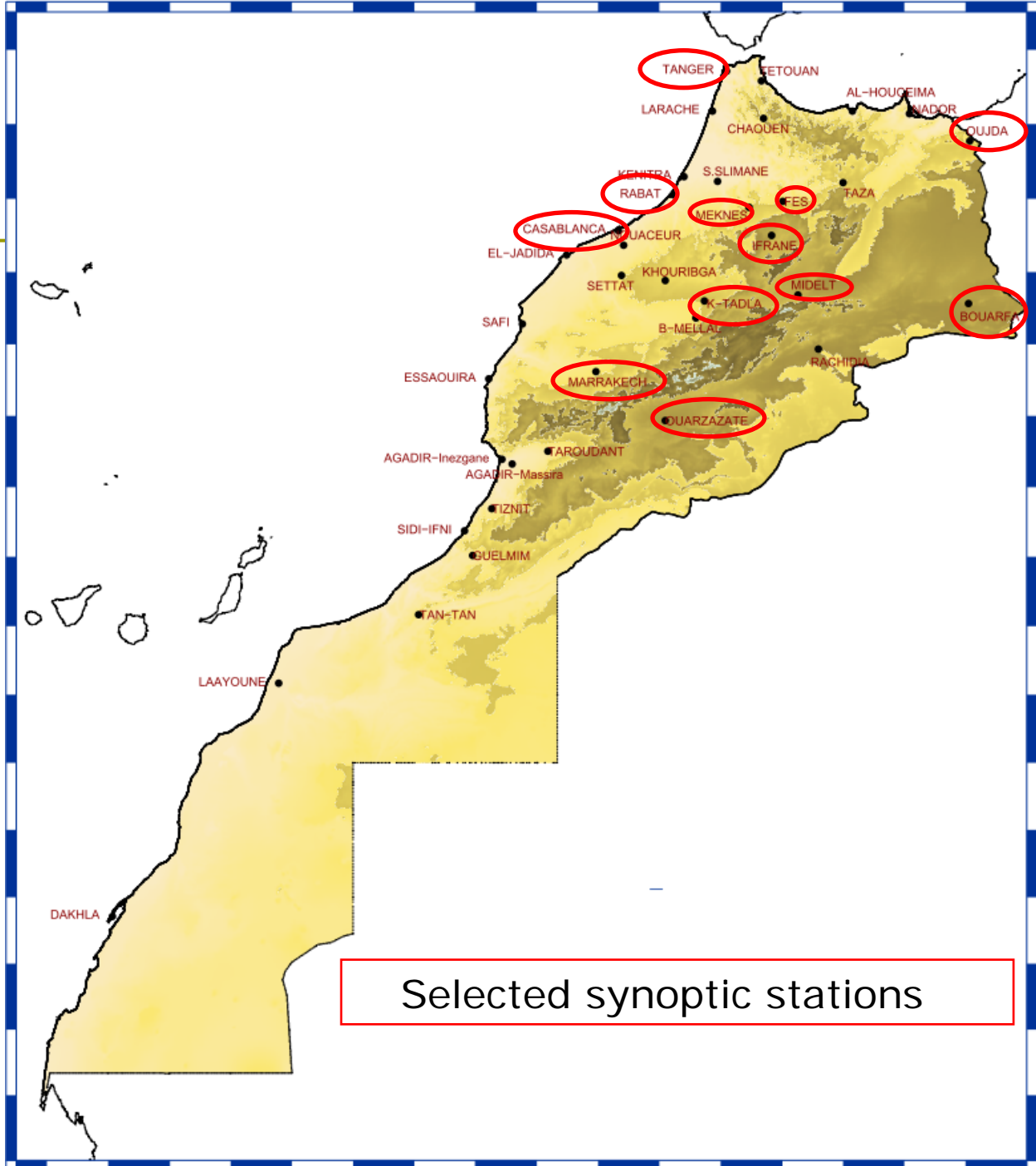
After 2000

- Documents (CRQ, TCM ,...) are sent from stations to DRMs (regional center) and archived there
- Data key entry is done at DRMs
- Data is stored in ORACLE database (GDCLIM) at DRMs
- The data entered in the 5 DRMs is integrated into the central base at the DMN





Network of synoptic stations



Selected synoptic stations

Digitalisation of Hourly Data

□ **The DMN has begun since 2009 a project of digitizing hourly data available in the CRQ documents for network synoptic stations with its own funds.**

□ **The number of digitized CRQ:**

-During 2009 : 65000 CRQ (~ 178 years)

-During 2010: 80000 CRQ (~ 220 years)

-During 2011: 80000 CRQ (~ 220 years)

□ **13 hourly parameters are digitized:**

visibility, wind direction, wind speed, time past, time present, SLP, pressure, temperature, humidity, water vapor pressure, total cloud cover, wet-bulb temperature and the dew point temperature

□ **Data is not introduced yet into the database GDCLIM. This will be done in the near future, after doing quality control.**

Digitalisation of Daily Data

■ Almost all daily Temperature and rainfall data is already digitized and is available in the DMN climatological database called GDCLIM since 1960.

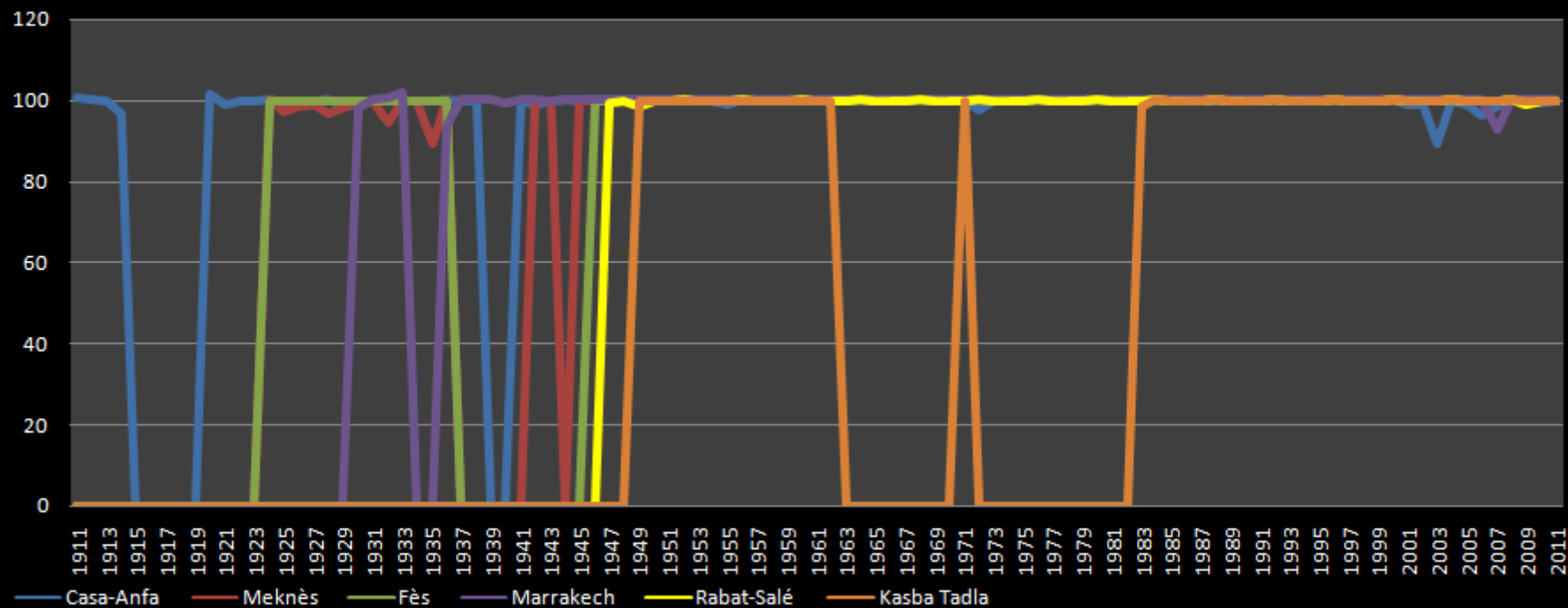
■ Through International project, many daily data from the TCM microfiche of METEO-FRANCE have been digitized and ingested in GDCLIM

Daily Data: Metadata

STATION	WMO ID	LONGITUDE	LATITUDE	ALTITUDE (m)	PROVINCE	WATERSHED	OPENING DATE	TCM available in MOROCCO
OUJDA	60 115 001	1° 56' W	34° 47' N	465	OUJDA	MOULOUYA	1919	since 1951
MEKNES	60 150 001	5° 31' 22 W	33° 52' 56 N	556	MEKNES	SEBOU	01/01/1922	since 1952
IFRANE	60 160 001	5° 10' W	33° 30' N	1 664	IFRANE	SEBOU	01/12/1954	since 1951
MIDELT	60 195 001	4° 44' W	32° 41' N	1 508	MIDELT	MOULOUYA	01/01/1921	since 1951
BOUARFA	60 200 001	1° 57' W	32° 34' N	1 142	BOUARFA	MOULOUYA	03/03/1980	since 1981
TANGER-AERO	60 101 001	5° 54' 20 W	35° 43' 35 N	14	TANGER	MEDITERRANEE	1921	since 1941
OUARZAZATE	60 265 001	6° 54' W	30° 56' N	1 136	OUARZAZATE	DRAA	1931	since 1931
MARRAKECH	60 230 001	8° 2' W	31° 37' N	464	MARRAKECH	TENSIFT	01/01/1918	since 1931
CASA-ANFA	60 155 001	7° 40' W	33° 34' N	56	CASABLANCA	ATLANTIQUE	01/01/1911	since 1959
FES-SAIS	60 141 001	4° 58' 30 W	33° 55' 58 N	571	FES	SEBOU	01/01/1961	since 1941
RABAT-SALE	60 135 001	6° 45' 29 W	34° 2' 46 N	74	SALE	ATLANTIQUE	05/01/1900	since 1951
KASBATADLA	60 190 001	6° 16' W	32° 52' N	51	BENI MELLAL	OUMRABII	01/01/1925	since 1951

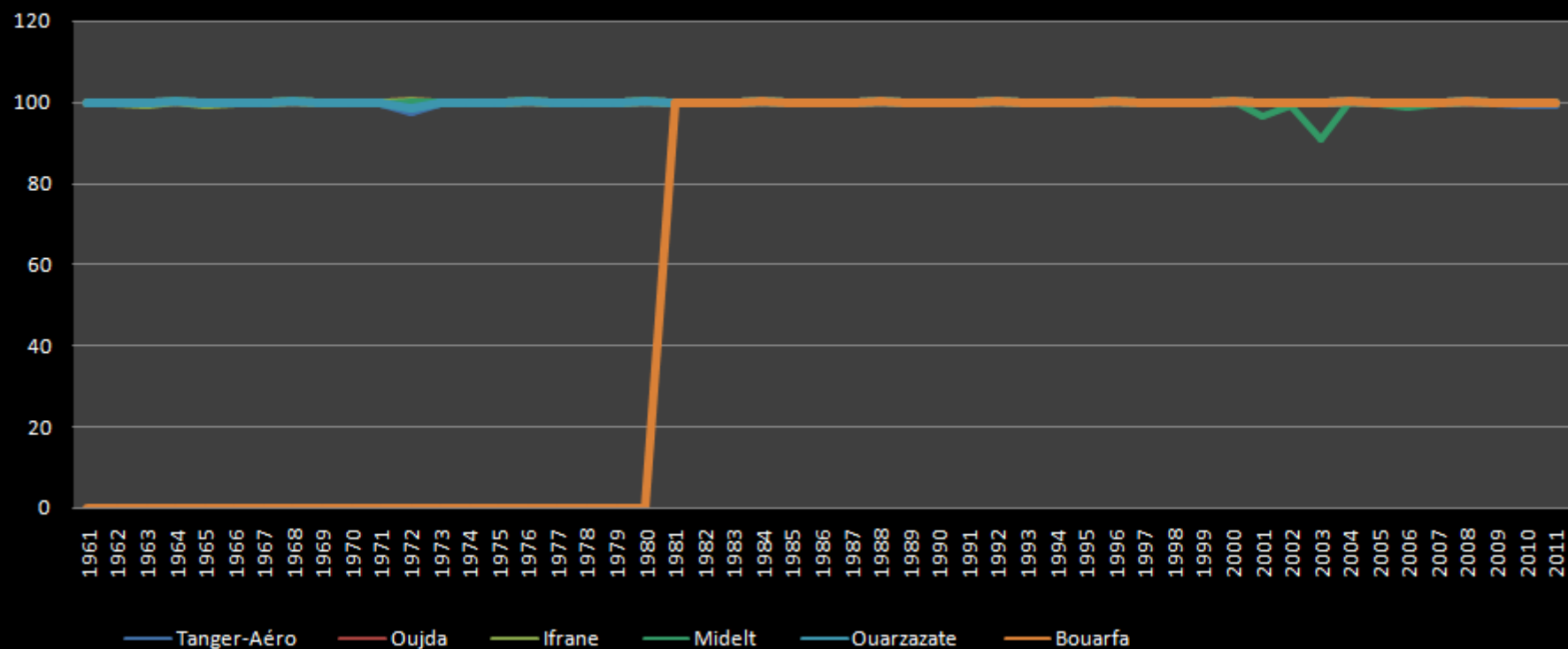
Daily Tmax

Poucentage of availability of Tmax data in GDCLIM



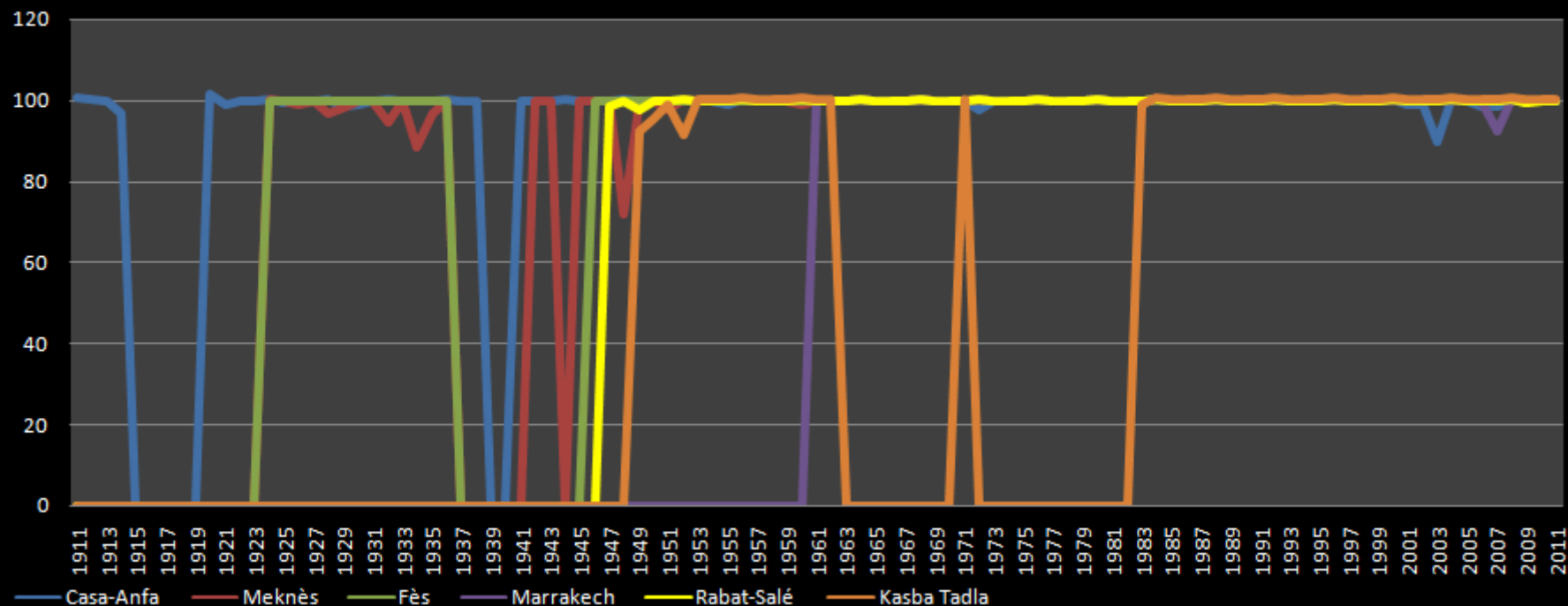
Daily Tmax

Poucentage of availability of Tmax data in GDCLIM (continuation)



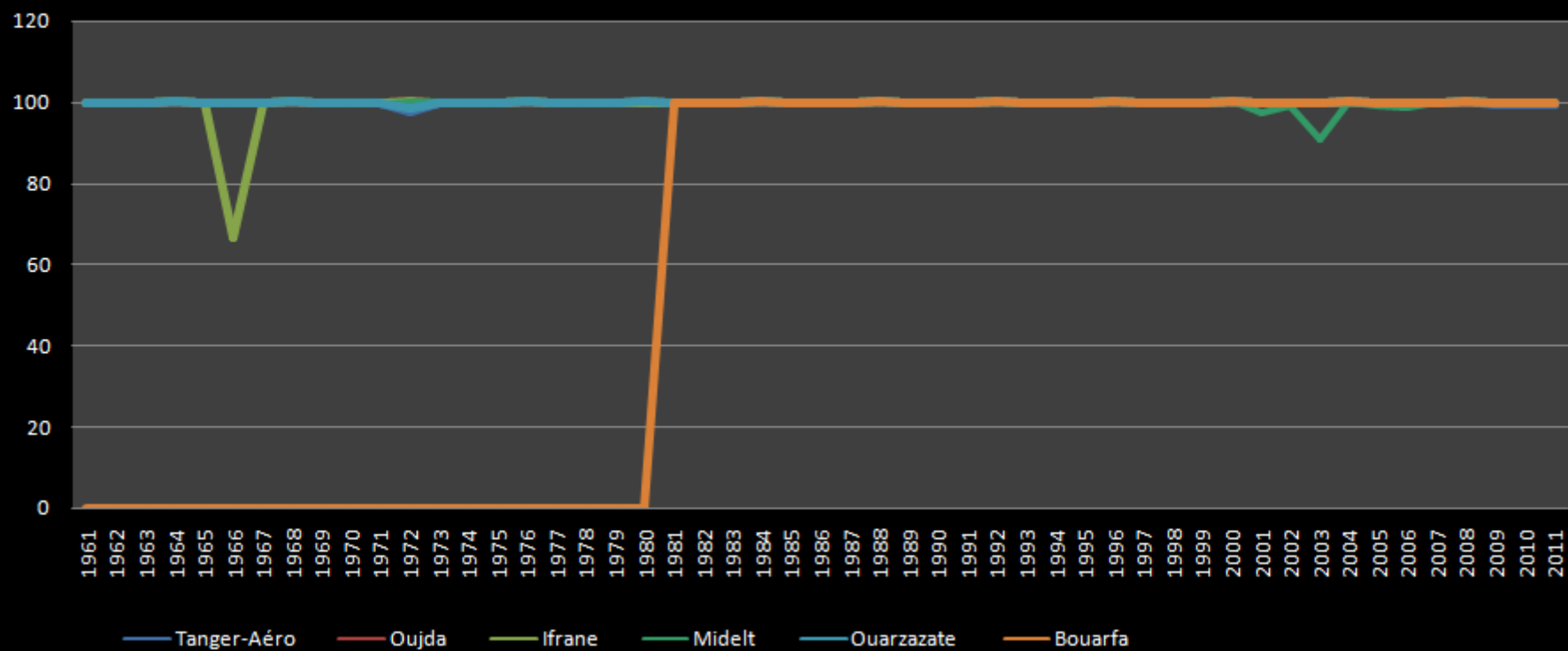
Daily Tmin

Poucentage of availability of Tmin data in GDCLIM



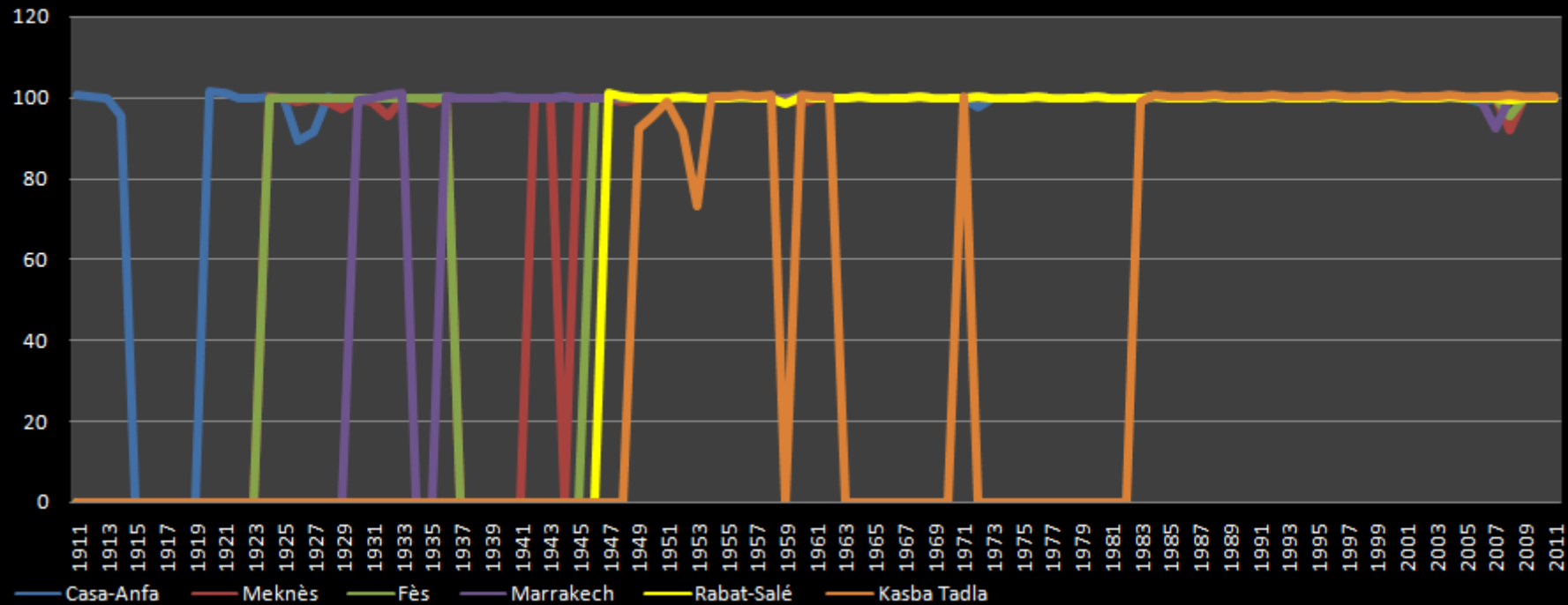
Daily Tmin

Poucentage of availability of Tmin data in GDCLIM (continuation)



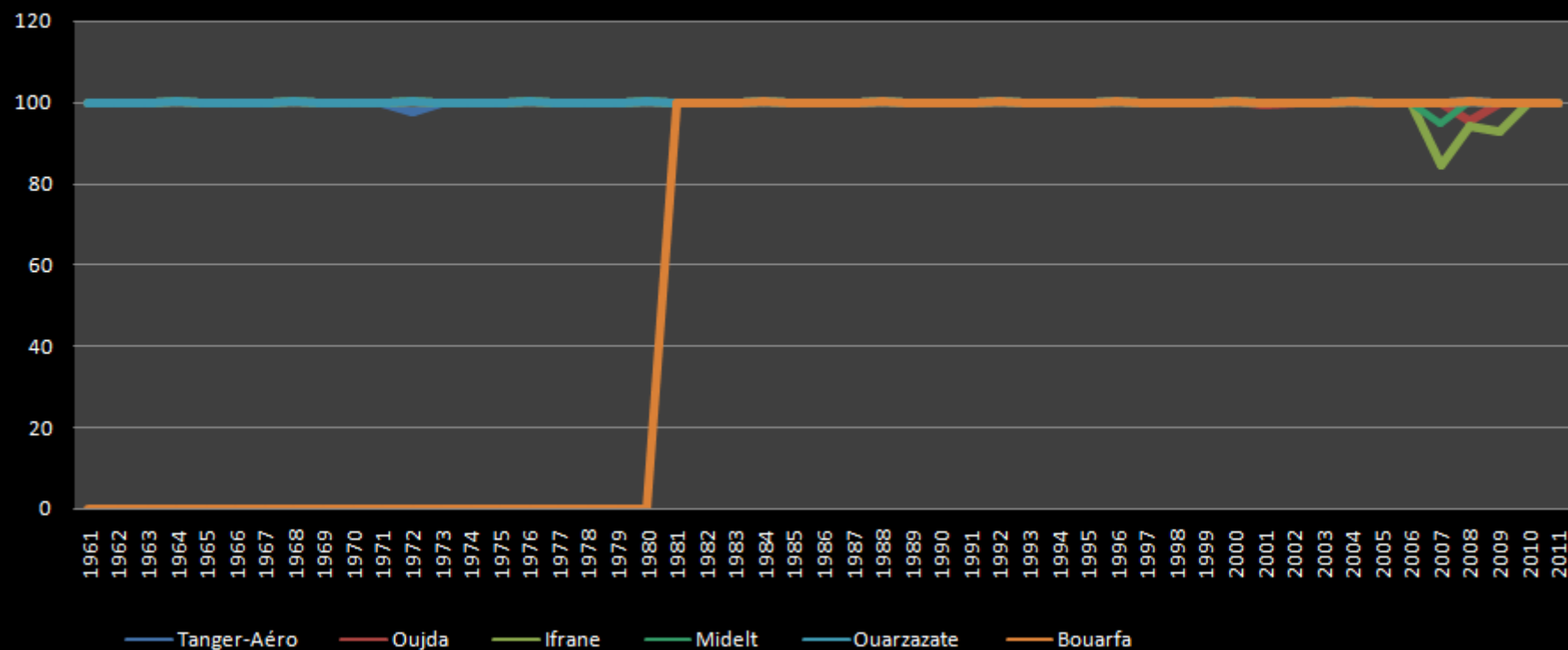
Daily RR

Poucentage of availability of RR data in GDCLIM



Daily RR

Poucentage of availability of RR data in GDCLIM (continuation)



Prospect

- Keeping and scanning all of the climatological documents
- The hourly data digitizing operation is stopped after three input phases due to the lack of FINANCING. We must seek external sources FINANCING to follow this task.