



***WMO WORKSHOP ON CLIMATE MONITORING INCLUDING THE  
IMPLEMENTATION OF CLIMATE WATCH SYSTEMS  
FOR ARAB COUNTRIES IN WEST ASIA,  
AMMAN, JORDAN, 27-29 MAY 2013***

**Current status and priority needs of climate  
monitoring and predicting in EGYPT**

**By**

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**Egyptian Meteorological Authority**

# Egypt background

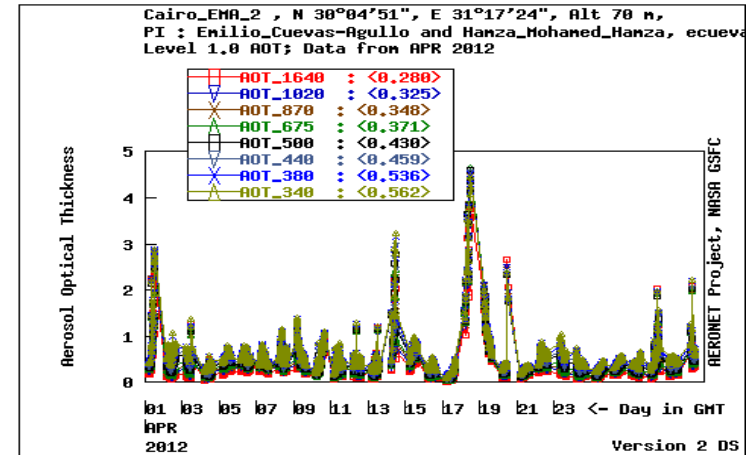


- Egypt is located in North east Africa East Mediterranean between 22° to 32 ° North and 24 ° to 37 ° East.
- Egypt climate is semi desert characterized by hot dry summer, moderate winters and very little rain fall,
- the country is characterized by particularly good wind regions in the coastal zone in the Mediterranean sea and red sea
- The main source of water supply in Nile river about 95%.
- The main workers of Population 90 millions are agriculture, industry, tourists ,and fisher. etc

# Network observations in Egypt

- Egypt has 120 surface stations . 40AWS, 35 climate station .
- 10 agro meteorological station
- 6 upper air station
- 4 station for pollution
- 2 station areonet station
- ( EMA station , Cairo university station ),PM10 station for observed aerosols

Particles With diameter 10 micrometer or less .



# Current activities in Egyptian meteorological Authority EMA

- In EMA website [www.nwp.gov.eg](http://www.nwp.gov.eg)
- Available weather charts ( cosmo 14km )
- For issue early warning heat waves , dust storm and daily weather report.
- Dust model for forecast dust and dust storm
- RCC activities Seasonal forecast
- Supporting with lead centers in seasonal forecast IRI dynamical forecast and other centers and statistical forecast CPT .
- Repots in Aerosols station Cairo station.

# Examples of output in EMA

## **Seasonal Forecast Report**

**April- May-June 2013**

**Issued by**

**Seasonal Forecast Team**

**Under supervision of**

**Dr. Ashraf S. Zakey**

*The General Director of Scientific Research Department at the Egyptian Meteorological Authority (EMA)*

# Marine and weather forecast over the east Mediterranean

- EGYPTIAN METEOROLOGICAL AUTHORITY (EMA)
- CAIRO NUMERICAL WEATHER PREDICTION CENTER

**Marine and Weather Forecast**

**Over**

**East Mediterranean**

**ISSUE TIME: ON SAT 25TH MAY, 2013,**

**AT 00:39 UTC**

**Warning**

**24 hours Weather Outlook**

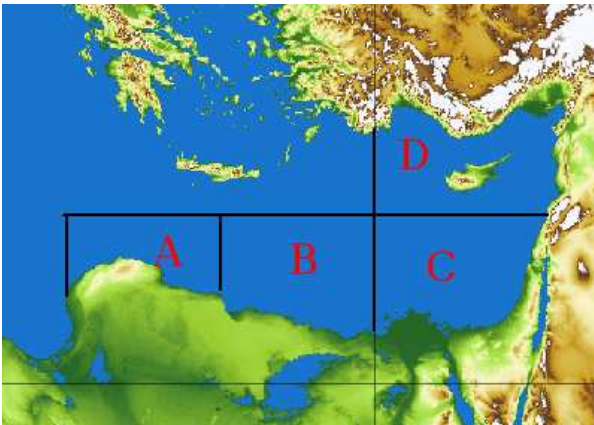
**Surface Wind**

**Region A Region B Region C Region D**

- **Direction** N N NW to N N
- **Speed (knots)** 8 13 11 10
  - **Sea State:**

**Slight in All Regions ( 1 - 3 Beaufort)**

- **Sig. Wave Height:**
- **1.1 to 1.5 meters**
- **Visibility:**
  - **1**



# Workshop in Cairo activities in RCC

- In Cairo 28 dec2012 hold with plome organization and UNICCO work shop in Management of climate risk on north Africa and Mediterranean region .
- In Cairo organizes the persanord 04 in supporting Acmad and WMO 27jan 2013- 1 feb 2013 .north African and Mediterranean region ( Training in seasonal forecast with statistical model CPT .
-

# the developing In the future

- Establish hydrological model to issue early warning and monitoring drought .
- Developing dynamical model for forecasting seasonal forecast .



# RCC network in north Africa

WMO take A decision to establishment RCC in north Africa RA1 in November 2010 supporting from Acmad and WMO

The NMHSs of Algeria, Egypt, Libya, Morocco and Tunisia agreed to work together to implement a RCC-Network for North Africa. Each country will participate in this Network and will contribute or lead in the performance of the respective RCC functions for the entire North African region.

- The North African RCC-Network also agreed to include as many as possible highly-recommended RCC functions defined by WMO.
- Distribution of functions agreed for the North African RCC-Network, allowing each of the five countries to implement a Node of the RCC-Network
- The pilot phase and administration phase finish in march 2013.

# Currently Designated GPCs



Links to GPCs:

[http://www.wmo.int/pages/prog/wcn/wcasn/clins/producers\\_forecasts.html](http://www.wmo.int/pages/prog/wcn/wcasn/clins/producers_forecasts.html)

# RCC Functions

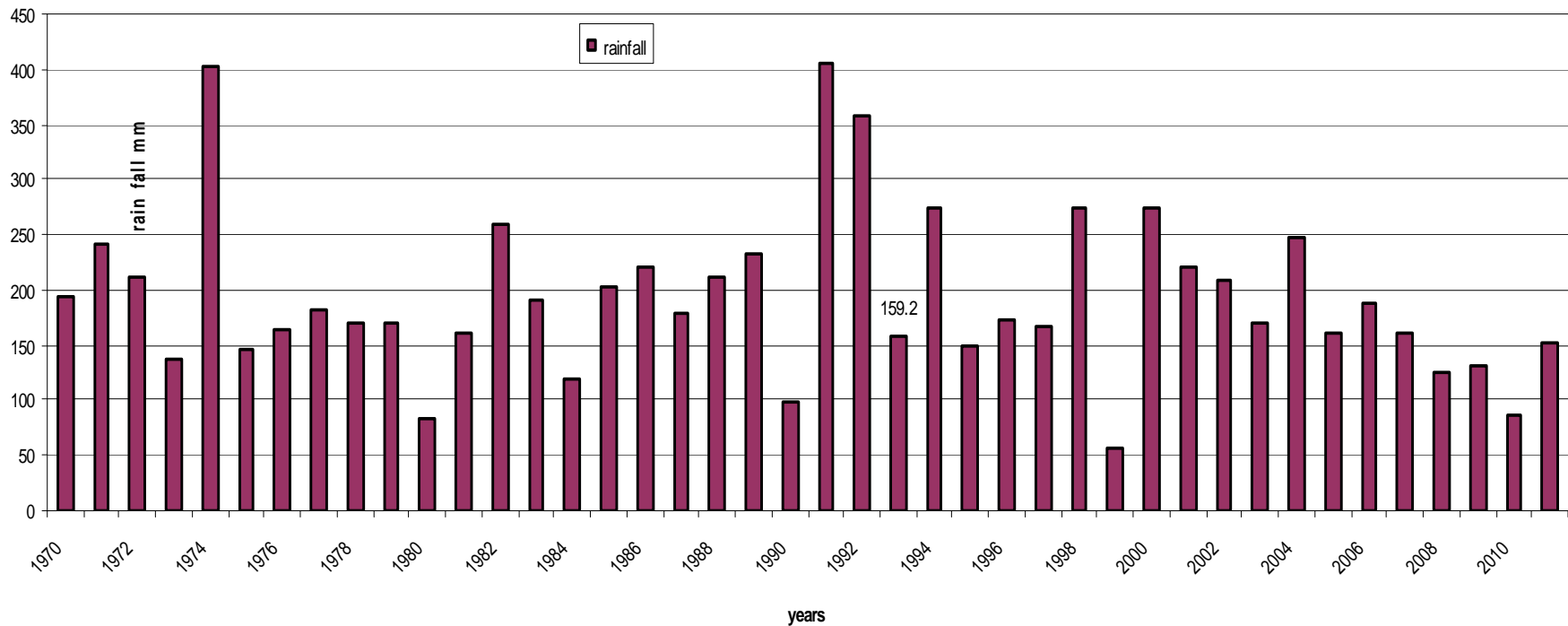
- Mandatory Functions:
  - Operational Activities for LRF
  - Operational Activities for Climate Monitoring
  - Operational Data Services, to support operational LRF and climate monitoring
  - Training in the use of operational RCC products and services
- Highly Recommended Functions:
  - Climate prediction and projection
  - Non-operational data services
  - Coordination functions
  - Training and capacity building
  - Research and development

# North African RCC-Network

<i>Functions</i>	<i>Lead</i>	<i>Co-Lead</i>
<b>LRF</b>	Morocco	Egypt
<b>Climate Monitoring Data Services</b>	Algeria	Tunisia
	Libya	Morocco
<b>Training</b>	Egypt & Tunisia	Algeria
<b>Highly Recommended Functions</b>	Morocco	Algeria, Egypt, Libya, Tunisia

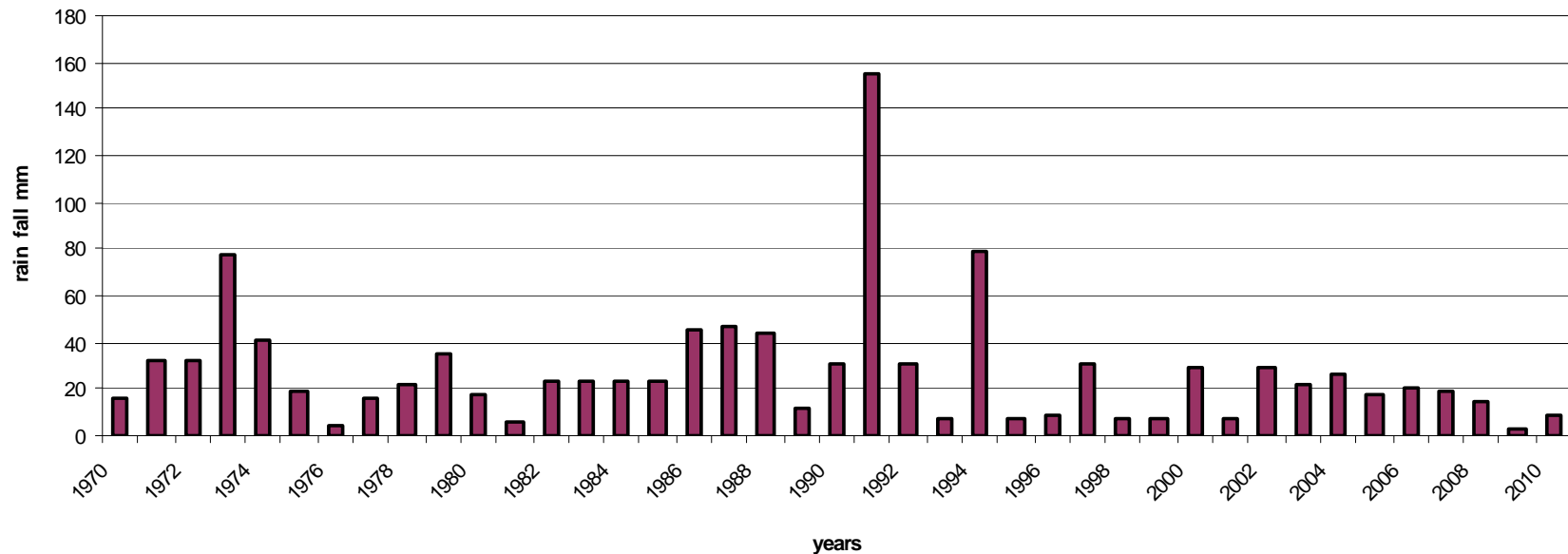
# Climate monitoring

## annual rain fall mm on alexandria 1970-2011



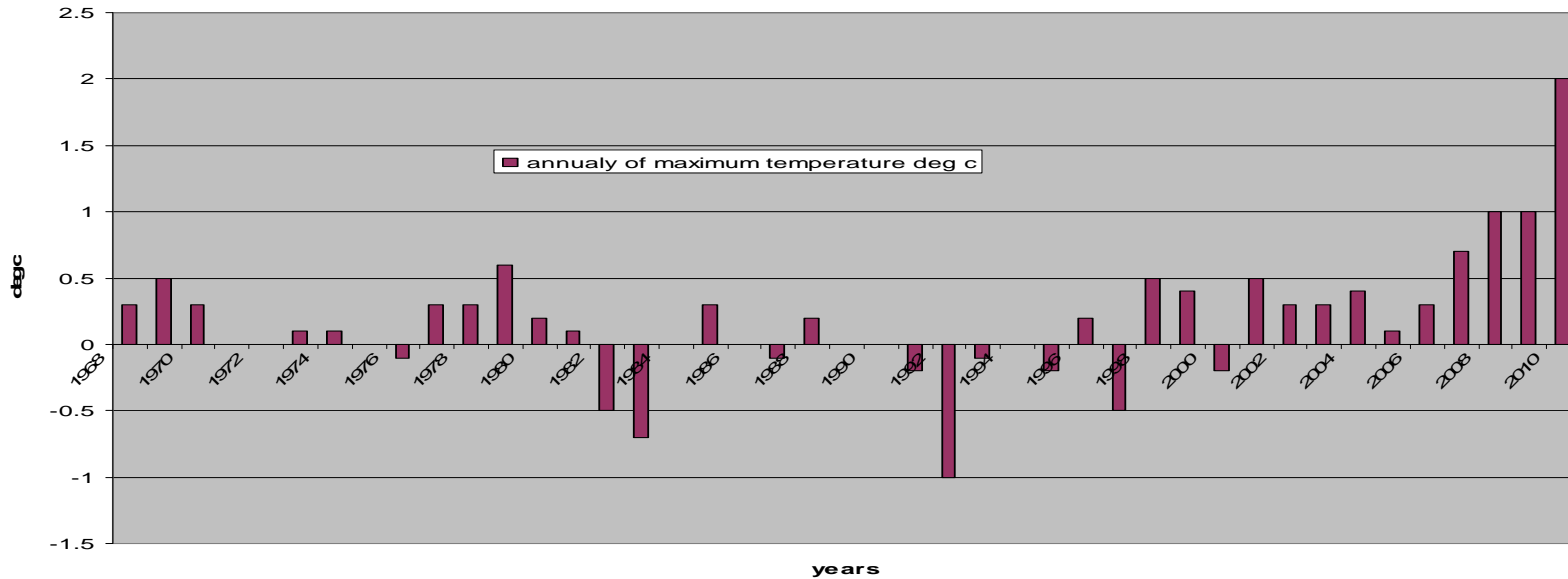
# Annual rain fall mm on cairo 1970-2010

## Annual rain fall mm on cairo 1970-2010

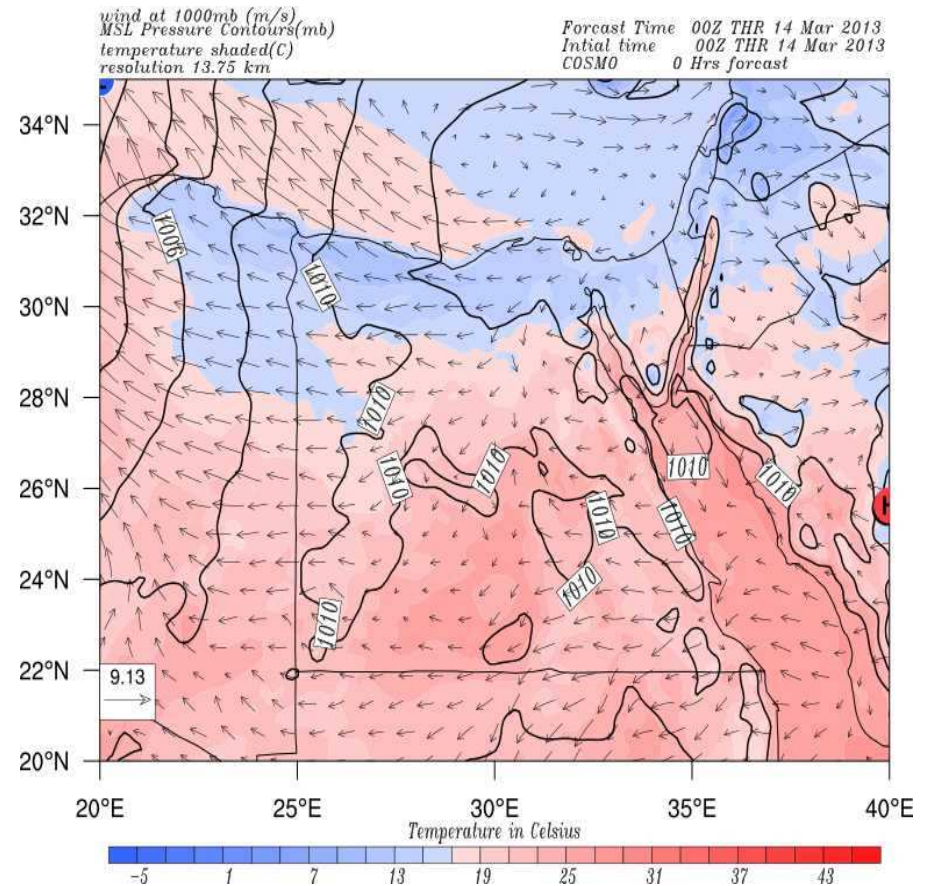
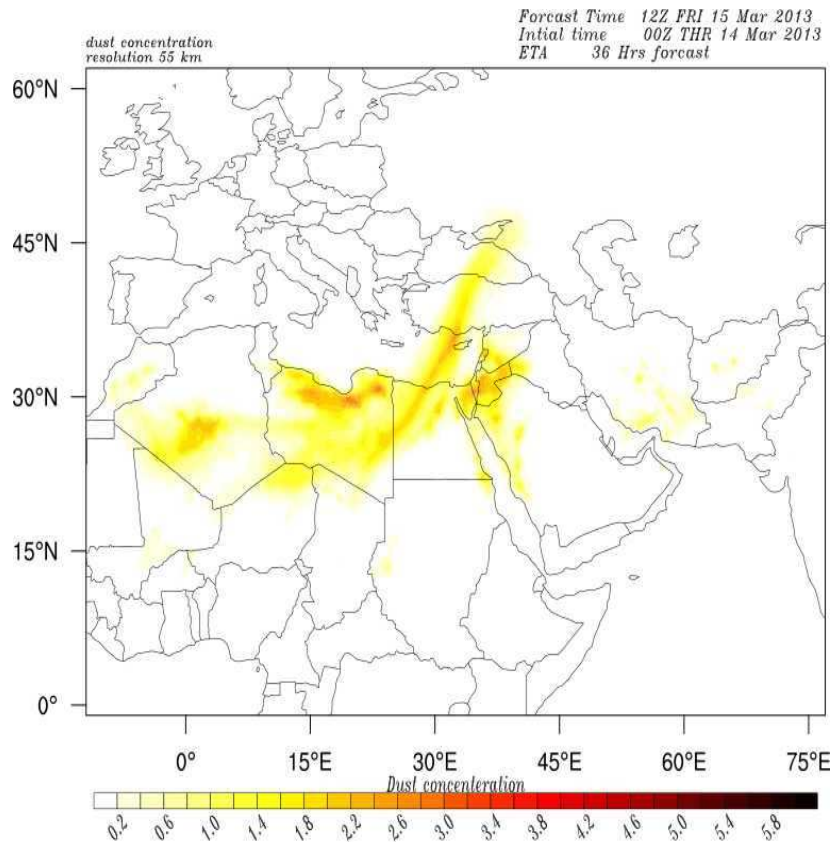


# Climate monitoring

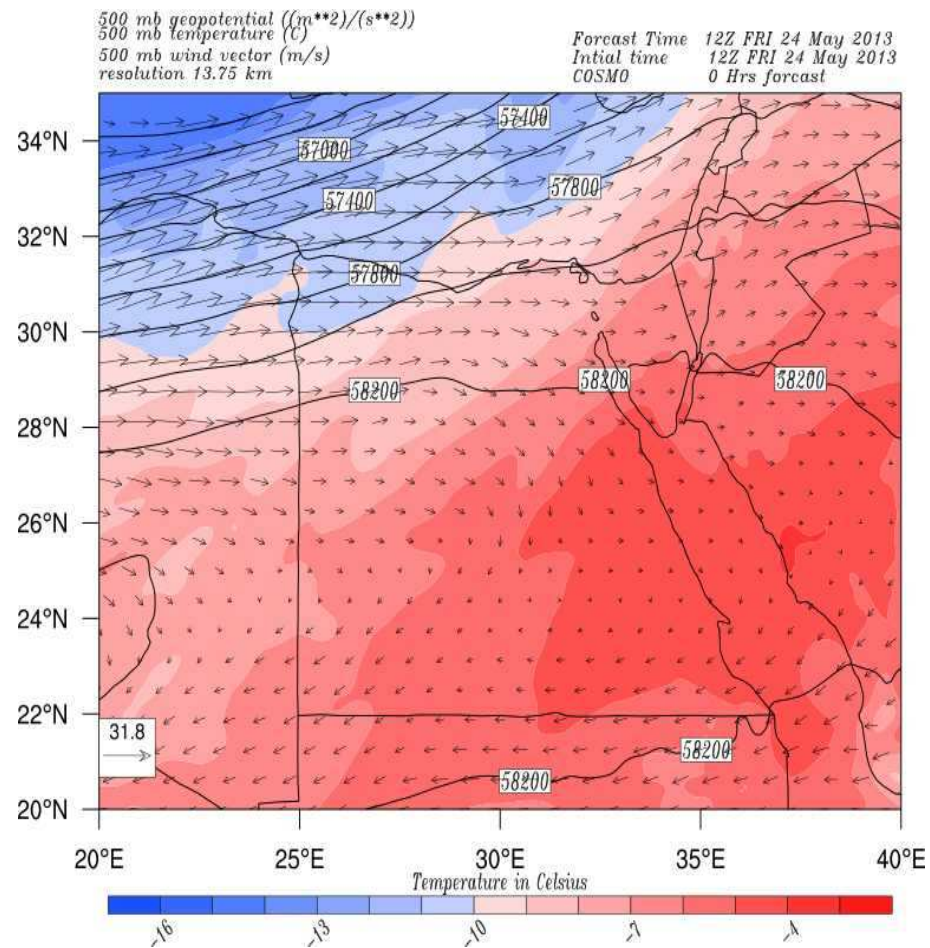
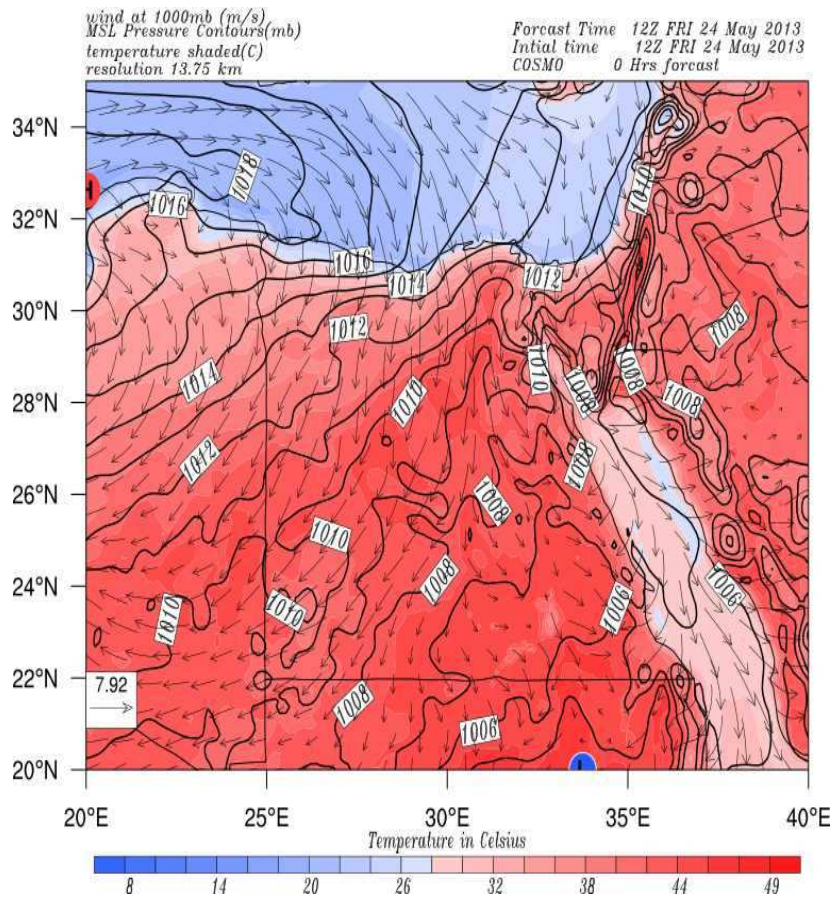
- Warmest years 2010,2009,2008,2007  
annuamly of maximum temperature ( normals 60-90)



# Output of dust model and weather surface charts and wind speed available in the website.



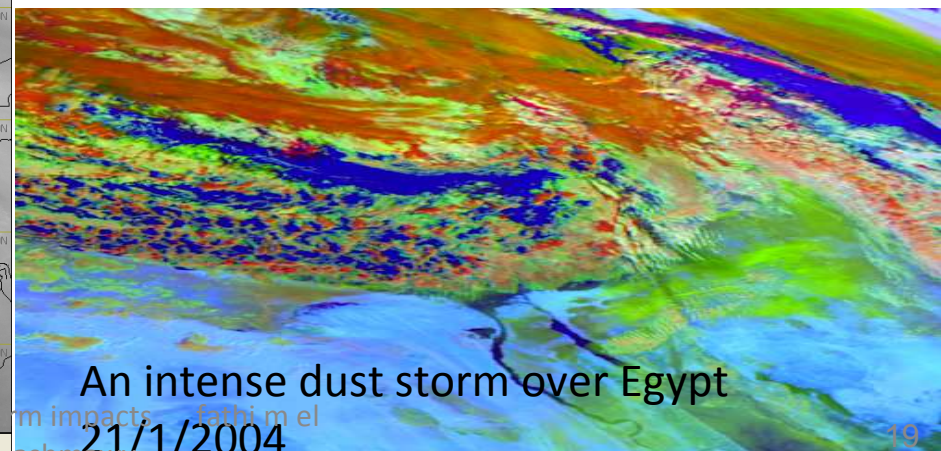
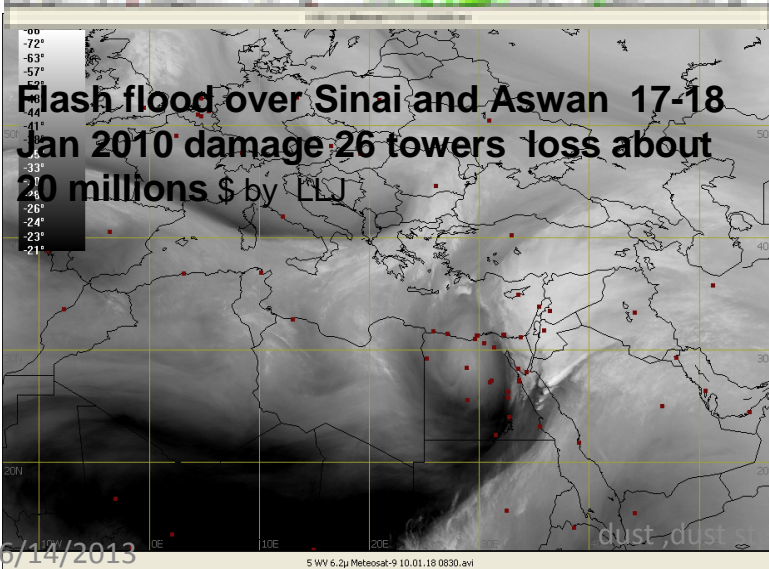
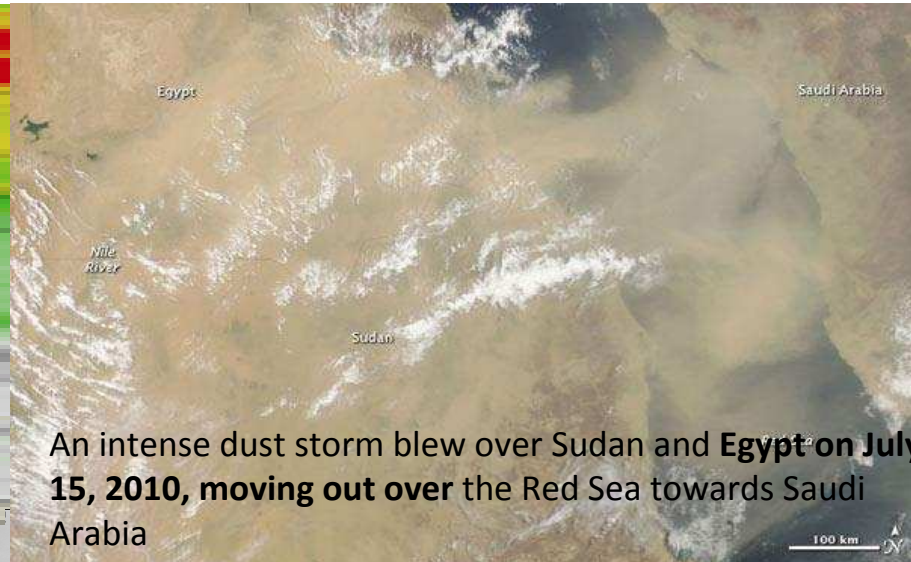
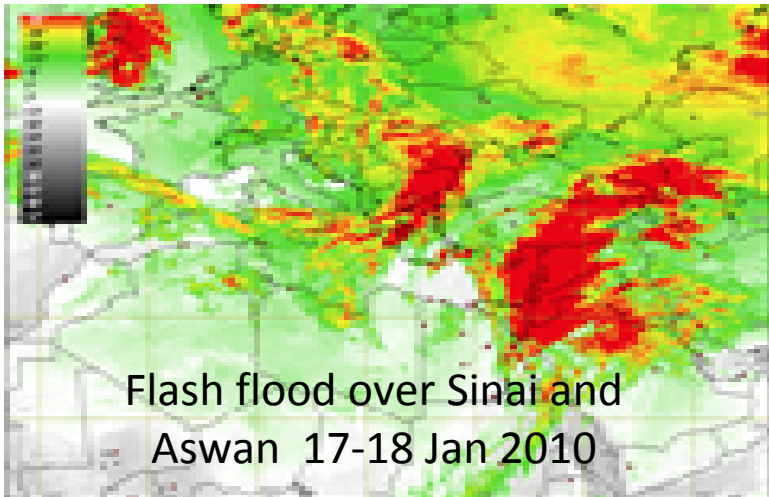




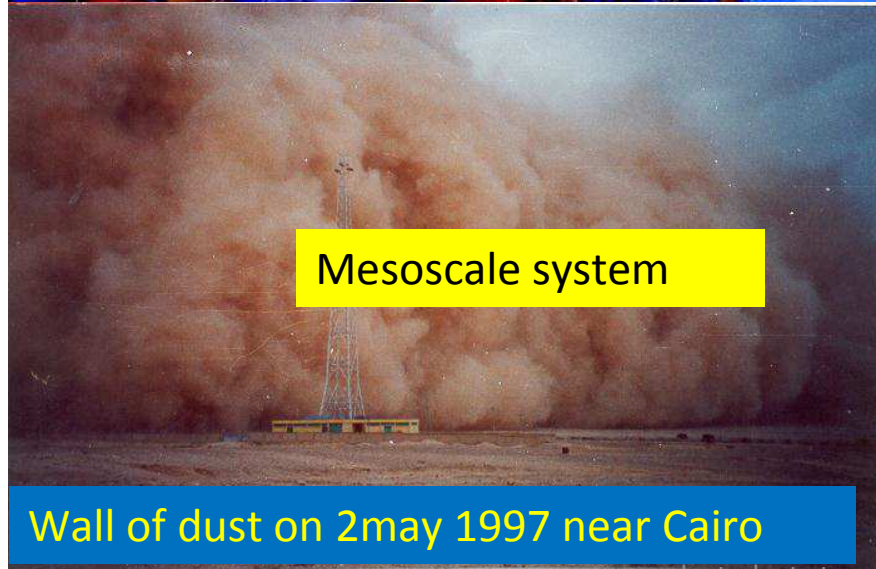
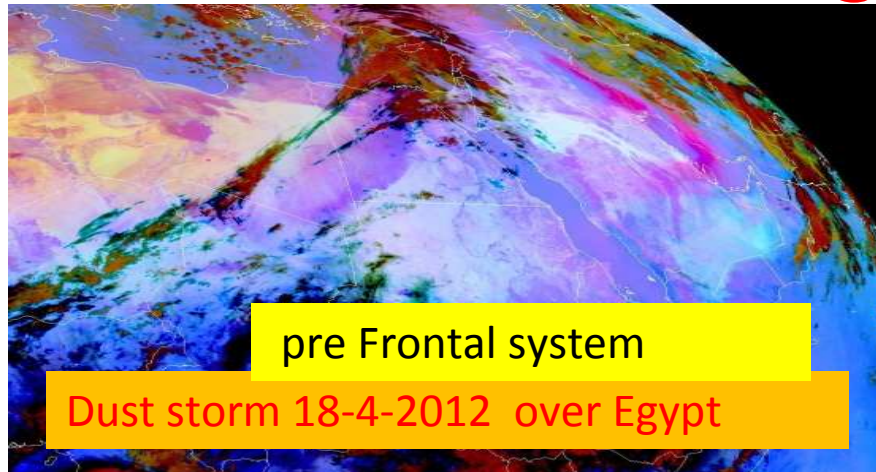
# examples of Extreme weather affect Egypt

- Flash flood January 2010 over SINA and Aswan .
- long lasting and sever Heat waves 1998during Jule and August .
- sever Dust ,sand storm 17 April 2007, 18 April .2012,2may 1997.
- Drought affect on Egypt and the countries of source of water supply in river Nile (Ethiopian ,Kenya) and increase the conflict between the countries due to decrease water supply
- due to Sea Level Rise (SLR) increase soil salinity due to increased evaporation are expected to reduce the quality of shallow groundwater supplies in the coastal areas.

# Sever weather phenomena on Egypt.



# Examples of dust storm hit Egypt



6/14/2013

dust ,dust storm impacts fathi m el  
ashmawy

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Thank you