



Regional Workshop on Climate Monitoring  
Including the Implementation of Climate Watch Systems for Arab  
Countries in West Asia  
27–29 May 2013, Amman, Jordan

**Climate system and services in Yemen**

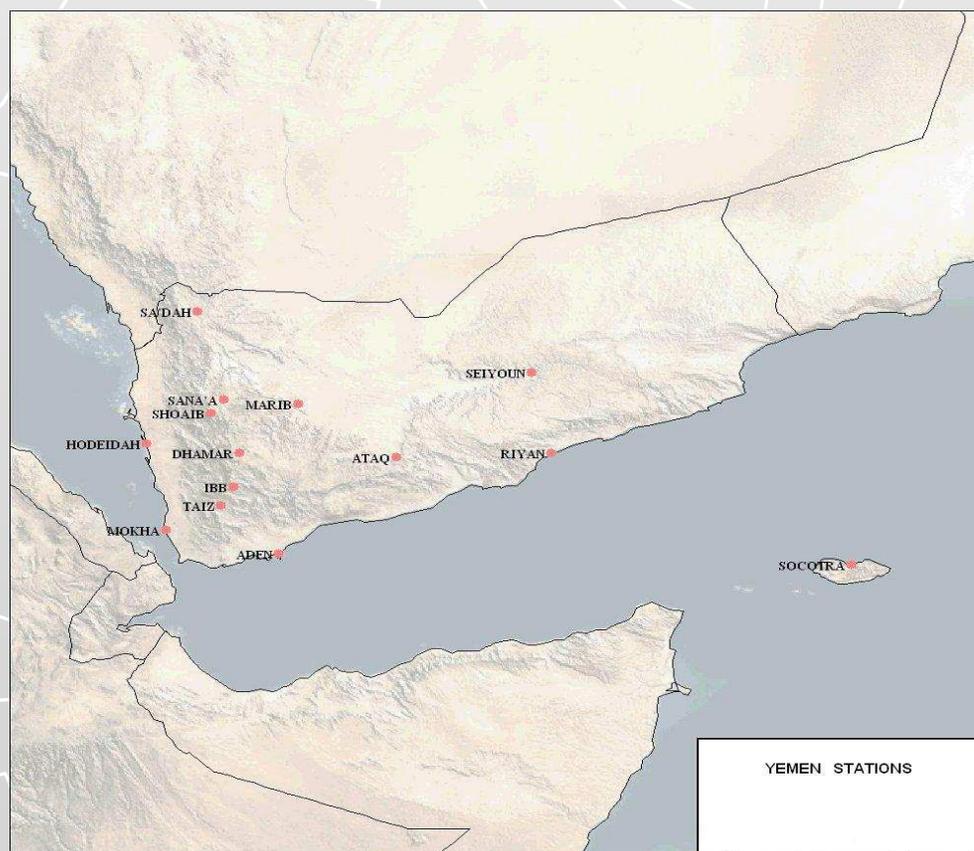
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Yemen Meteorological Service**

**Civil Aviation & Meteorology Authority  
Sana'a , Republic of Yemen**

# Geography of Yemen

- occupying the southwestern to ,Yemen located in the Middle East 12southern end of the Arabian Peninsula between latitudes °and 19° N 42and longitudes ° 55and ° E
- It is bordered by Saudi the ,Arabia to the north Oman ,west the Red Sea to to the east and Gulf of Aden and Arabian Sea to .the south
- The country land area is about 555,000 square kilometers which includes mountains, ridges, valleys, wadies and desert areas.



# Topography of Yemen

*Yemen can be divided into five geographical regions.*

## **1-Mountainous region**

**A- North-South mountain region which parallels to the Red Sea. The region includes Sana'a ,Dhamar,Ibb,and Taiz .**



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# Topography of Yemen

*Yemen can be divided into five geographical regions.*

## **1-Mountainous region**

**B-East`-west mountain region**  
paralleling to the Gulf of Aden. The region contains Haja ,Al Mahwuit ,Sada ,Marib and Amran. The height of these mountains varies from 1,000 to 3,700 meters .These mountain regions contain several plains and basins forming extensive agricultural areas.



# Topography of Yemen

*Yemen can be divided into five geographical regions.*

**2-The coastal plain** overlooking the Red sea, the Gulf of Aden and the Arabian sea.

The width of these coastal areas varies from 30 to 60 km<sup>2</sup> .

The region is comprised of AL-Hodeidah, Aden, Abyan, Shapwa and part of Hadramout. The weather is very hot and humid at summer but moderate in winter.



# Topography of Yemen

*Yemen can be divided into five geographical regions.*

**3-Plateau area** whose elevation is around 1,000 m, lying on the east and north of the mountainous and high lands.  
The weather is moderate



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# Topography of Yemen

*Yemen can be divided into five geographical regions.*

**4-The desert** region which covering large area .These region includes AL-Jof,Marib,Shabwa and part of Hadramout . Its weather is very hot and dry



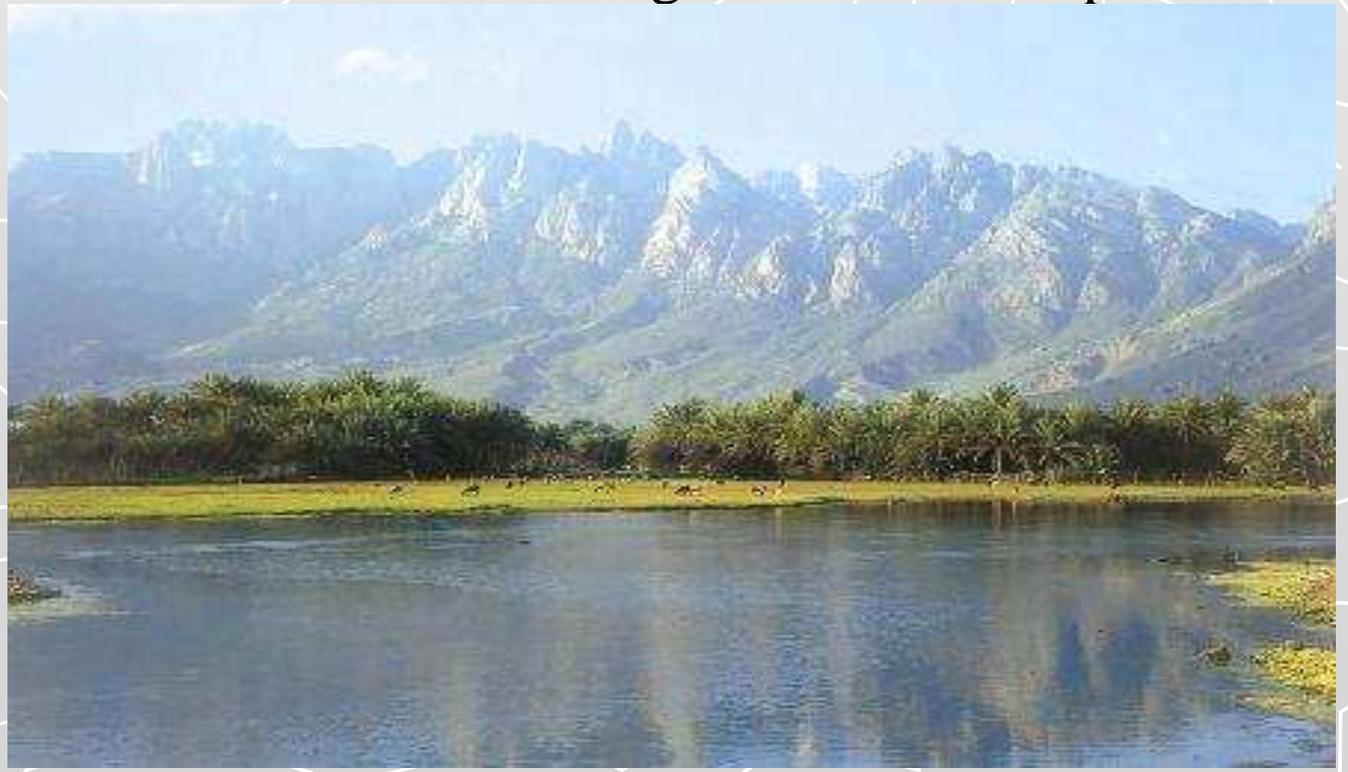
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# Topography of Yemen

•  
**5- Islands** ,this part of the country consists of Islands scattering along coast of Red Sea and Arabian Sea. There is about 120 Islands, most of which locate in the Red Sea .The biggest island in Red Sea is Kamaran while in the Arabian Sea ,the largest and most important island is Socotra.



# Present operational network

YMS has been operating under Civil Aviation & Meteorology Authority (CAMA), Ministry of Transport. Now there are;

- 20 Surface observation stations spread all over the country.
- 6 Agro met plus hydromet stations.
- 10 Climatologically stations
- 5 Automatic weather stations
- 8 Automatic wind stations

# Climate Service

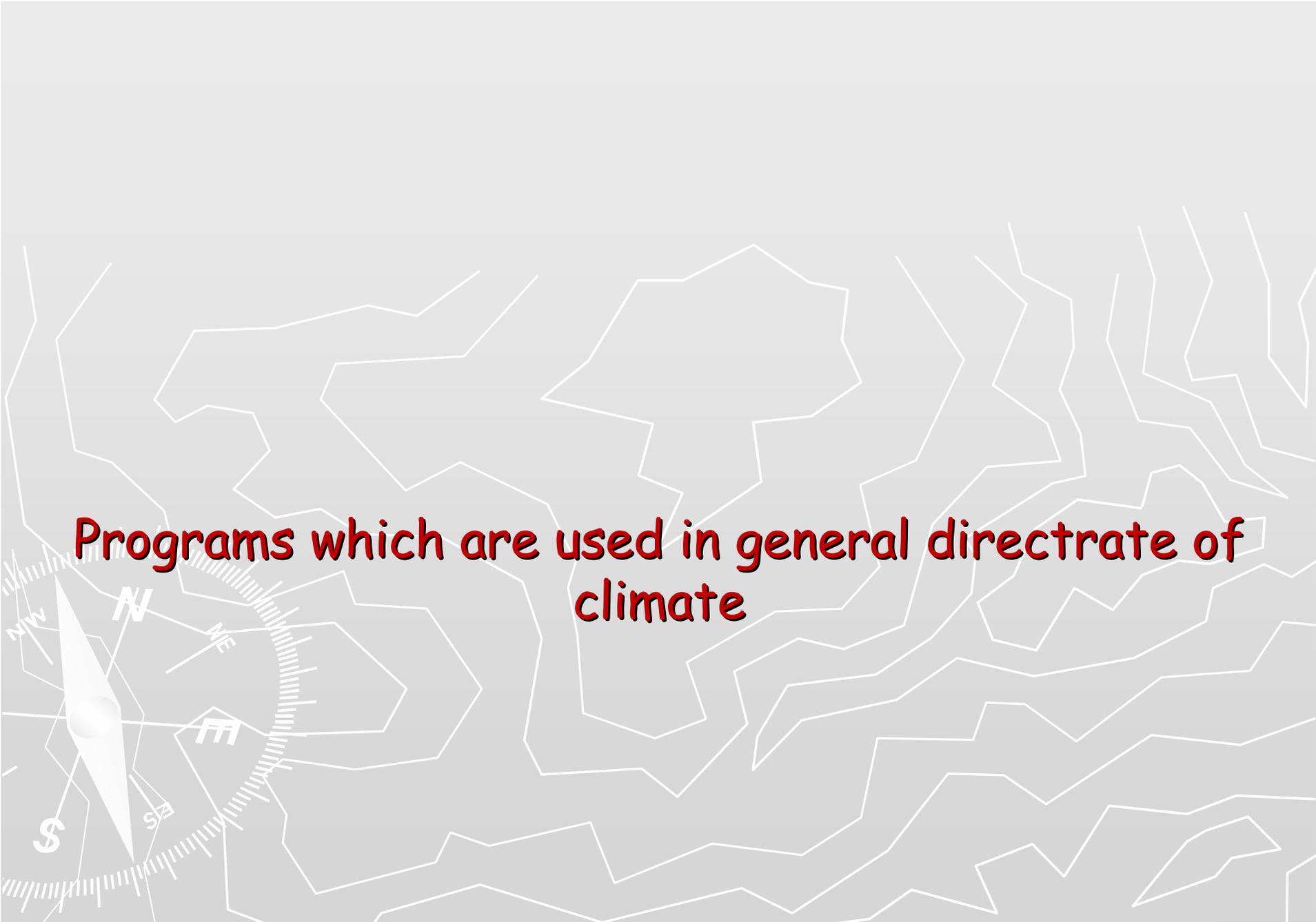
## Data Management.

1. Collecting Data in different forms
2. Data processing
3. Data maintains; Paper and Digital formats
4. Data store, in compressed form: diskettes and optical tape
5. Publishing monthly and annually data summaries.

# Climate Service

## ■ AVAILABLE CLIMATE ELEMENTS

1. Air pressure
2. Dry, Wet, Maximum and Minimum Temperatures.
3. Soil Temperature
4. Relative Humidity
5. Vapor Pressure
6. Dew Point
7. Wind Speed And Direction
8. Cloud Type and Amount
9. Rainfall
10. Weather Phenomena
11. Solar Radiation
12. Visibility summaries.

The background of the slide features a light gray map of West Asia, with white lines representing geographical features like coastlines and rivers. In the bottom-left corner, there is a white compass rose with a needle pointing towards the top-left. The compass rose is labeled with 'N' for North, 'NW' for North-West, 'NE' for North-East, 'S' for South, and 'SE' for South-East. The main title is written in a bold, red, sans-serif font across the center of the map.

# Programs which are used in general directrate of climate

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# CLICOM

- ▶ ***Before 2006 we were used CLICOM program but the disadvantage of this program was the difficulty of outputs .***
- ▶ ***• Now we are use CLDB program from Microstep-MIS company with Oracle data base.***



# CLDB

CLDB Application and utilities can be split to several categories:

- client utilities: select, report and windrose
- maintenance software : DB Manager ,Manual data Entry
- Data import software
- Data processing and quality control software
- Data storage software

Region: Yemen  
 Station: SANA'A  
 Entry form: Dly.data  
 Month: March  
 Year: 2011  
 Data set: Climatic observations  
 Options:

historical  
 changed  
 warning  
 unchecked  
 invalid  
 max: -999999  
 min: 999999  
 sum: 0

Daily data

Day	Temp. Dry. Min. Dly	Temp. Dry. Max. Dly	Wind. Gust. Dir. Dly	Wind. Gust. Speed. Dly	Prec. Sum. Dly	Sun. Duration. Sum. Dly
01-03-2011	10.5	28.4	030	16	000.00	
02-03-2011	08.2	28.0	030	12	000.00	
03-03-2011	09.5	27.5	030	16	000.00	
04-03-2011	08.8	28.0	040	14	000.00	
05-03-2011	10.0	27.6	250	16	000.00	
06-03-2011	12.0	27.4	270	24	000.50	
07-03-2011	10.8	18.9	110	12	001.20	
08-03-2011	08.0	26.4	020	15	000.00	
09-03-2011	09.0	26.1	240	17	000.00	
10-03-2011	11.0	27.4	340	18	000.00	
11-03-2011	11.5	27.0	320	18	000.00	
12-03-2011	14.6	26.4	200	20	000.00	
13-03-2011	13.9	25.5	250	24	000.00	
14-03-2011	12.2	27.4	090	14	000.00	
15-03-2011	09.0	23.8	090	12	000.00	
16-03-2011	07.2	21.6	030	14	000.00	
17-03-2011	08.6	22.4	020	18	000.00	
18-03-2011	07.2	21.0	030	14	000.00	
19-03-2011	09.6	23.0	030	13	000.00	
20-03-2011	06.5	25.0	040	16	000.00	
21-03-2011	07.0	25.4	030	14	000.00	
22-03-2011	07.0	27.0	030	13	000.00	
23-03-2011	09.0	28.5	320	14	000.00	
24-03-2011	08.1	28.5	360	10	000.00	
25-03-2011	11.5	27.2	260	14	000.00	
26-03-2011	11.8	26.5	070	17	000.00	
27-03-2011	12.8	27.0	030	16	000.00	

Region: Yemen  
 Station: SANA'A  
 Country form: Auto weather St.

Date: Tuesday , March 06, 2012

Data set: Climatic observations

Options:

historical  
 changed  
 warning

Hourly data

Hour	Wind.Dir	Wind.Speed	Wind.Gust.Dir	Wind.Gust.Speed	Visibility	W
00:00	115	1.2		02	04.0	0
01:00	337	1.7		02	04.0	0
02:00	000	0.6		01	04.0	0
03:00	000	0.8		02	04.0	0
04:00	262	1.3		02	03.0	0
05:00	270	2.2		04	03.0	0
06:00	212	2.5		05	03.0	0
07:00	000	0		04	03.0	0
08:00	164	3.1		07	03.0	0
09:00	051	5		09	03.0	0
10:00	334	7.1		12	05.0	0
11:00	243	6		15	05.0	0
12:00	035	13.4		20	03.0	0
13:00	043	15.7		22	03.0	0
14:00	040	14.6		21	03.0	0
15:00	047	10.3		16	03.0	0
16:00	037	6.2		09	03.0	0
17:00	040	3.8		06	04.0	0



Region	Station	Variables
<input type="checkbox"/> Mountain stations	<input type="checkbox"/> MARIB	<input type="checkbox"/> All variables
<input type="checkbox"/> Sea	<input type="checkbox"/> MATNEH	<input type="checkbox"/> Entry form Auto weather St.
<input type="checkbox"/> South	<input type="checkbox"/> MOKHA	<input type="checkbox"/> Entry form Dly.data
<input checked="" type="checkbox"/> Yemen	<input type="checkbox"/> RADA	<ul style="list-style-type: none"> <li>- Prec.Sum.Dly</li> <li>- Sun.Duration.Sum.Dly</li> <li>- Temp.Dry.Max.Dly</li> <li>- Temp.Dry.Min.Dly</li> <li>- Wind.Gust.Dir.Dly</li> <li>- Wind.Gust.Speed.Dly</li> </ul>
	<input checked="" type="checkbox"/> RIYAN	<input type="checkbox"/> Entry form Dly.Form1
	<input type="checkbox"/> SA'DAH	
	<input type="checkbox"/> SAHAREEG	
	<input type="checkbox"/> SANA'A	
	<input type="checkbox"/> SEIYOUN	
	<input type="checkbox"/> SUDUHA	

Predefined period: From: Tuesday, March 01, 2011 12:00:00 A < >  
 Month: To: Thursday, March 31, 2011 11:59:59 P Now

Sources:  Automatic Weather St  Notification messages  Radiation monitoring  Climatic observations

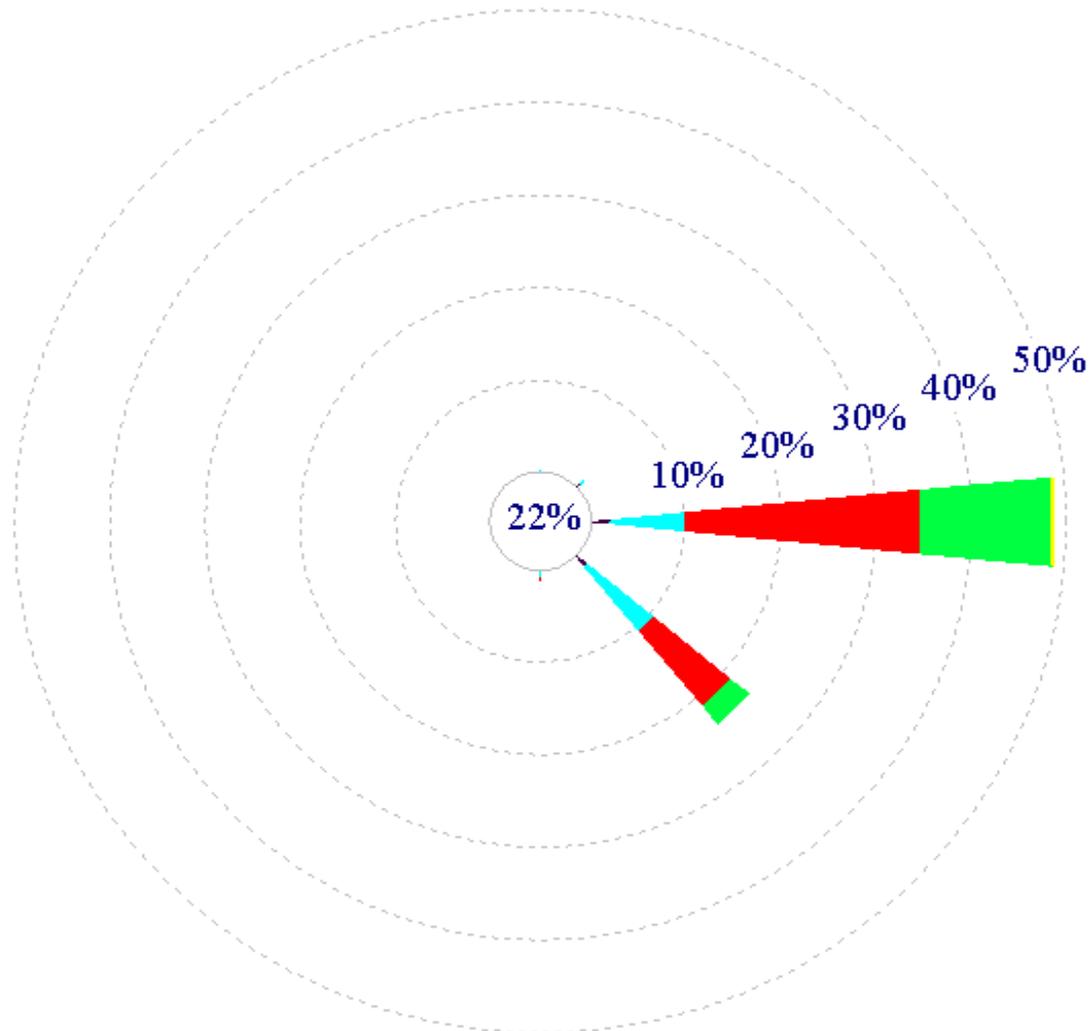
Aggregation:  Max  Mean  Min  Sum  Count  
 <raw data>

MeasTime	RIYAN	
<raw data>	Temp.Dry.Max.Dly deg. C	Temp.Dry.Min.Dly deg. C
3/1/2011	27.5	22.7
3/2/2011	27.3	22.6
3/3/2011	27.4	22.1
3/4/2011	27.8	22.6
3/5/2011	27.7	21.6
3/6/2011	27.9	21
3/7/2011	28.4	21.6
3/8/2011	27.9	21.8
3/11/2011	28	20.3



# ADEN

## January 2005



Mean Speed = 12.3 knots

No. of obs./all = 727 / 744



# Recommendation

- ▶ **1- Short Climate short prediction ,long , climate watching and monitoring in Yemen is new so I came to here to get some information and knowledge in these field**
- ▶ **2-I hope I learn from these workshop some method for implementation of watch system and awareness raising**

**THANK YOU**



