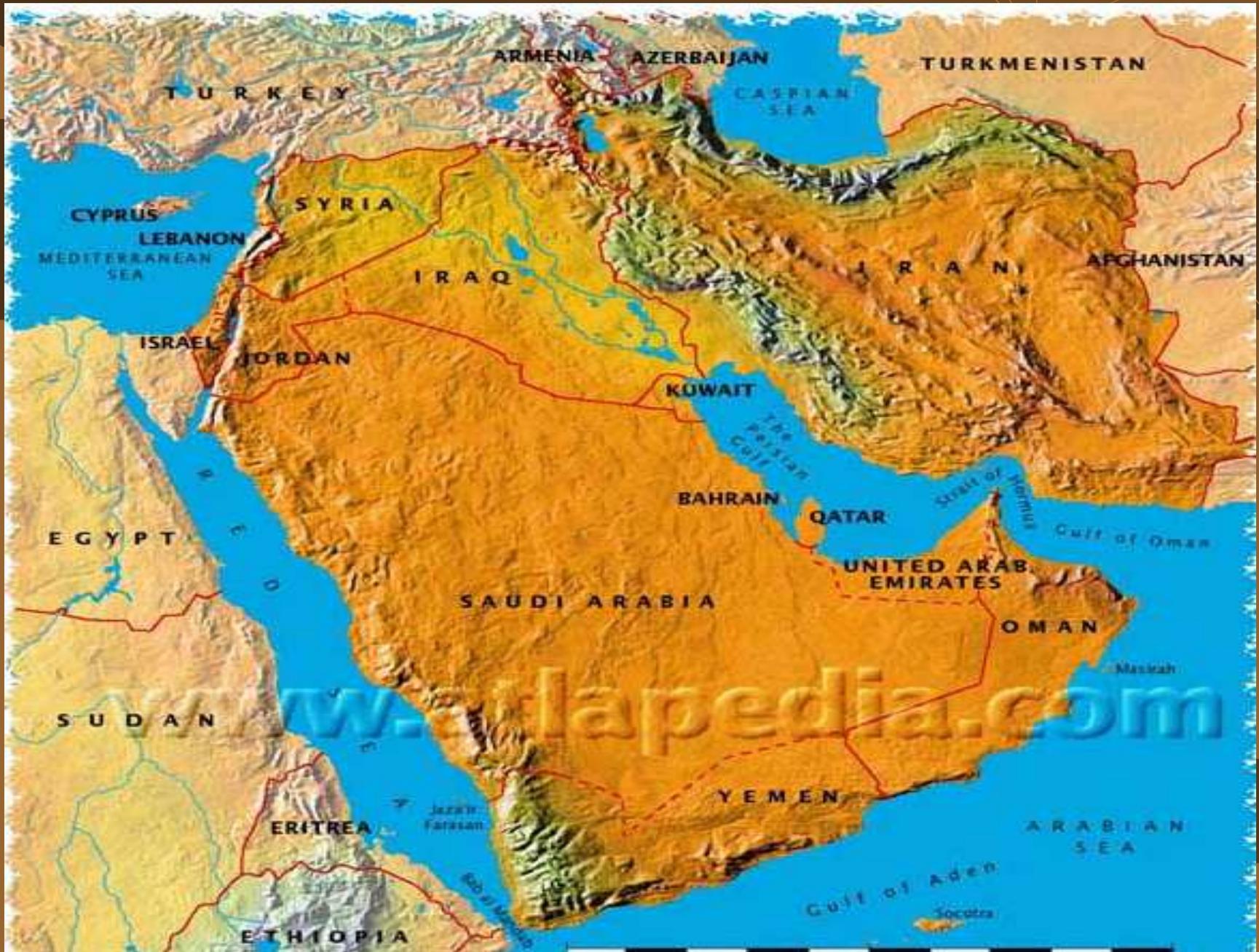


Jordan Meteorological Department (JMD)

WMO Workshop on Climate Monitoring
including the implementation of
Climate Watch Systems in West Asia
Jordan Country Report

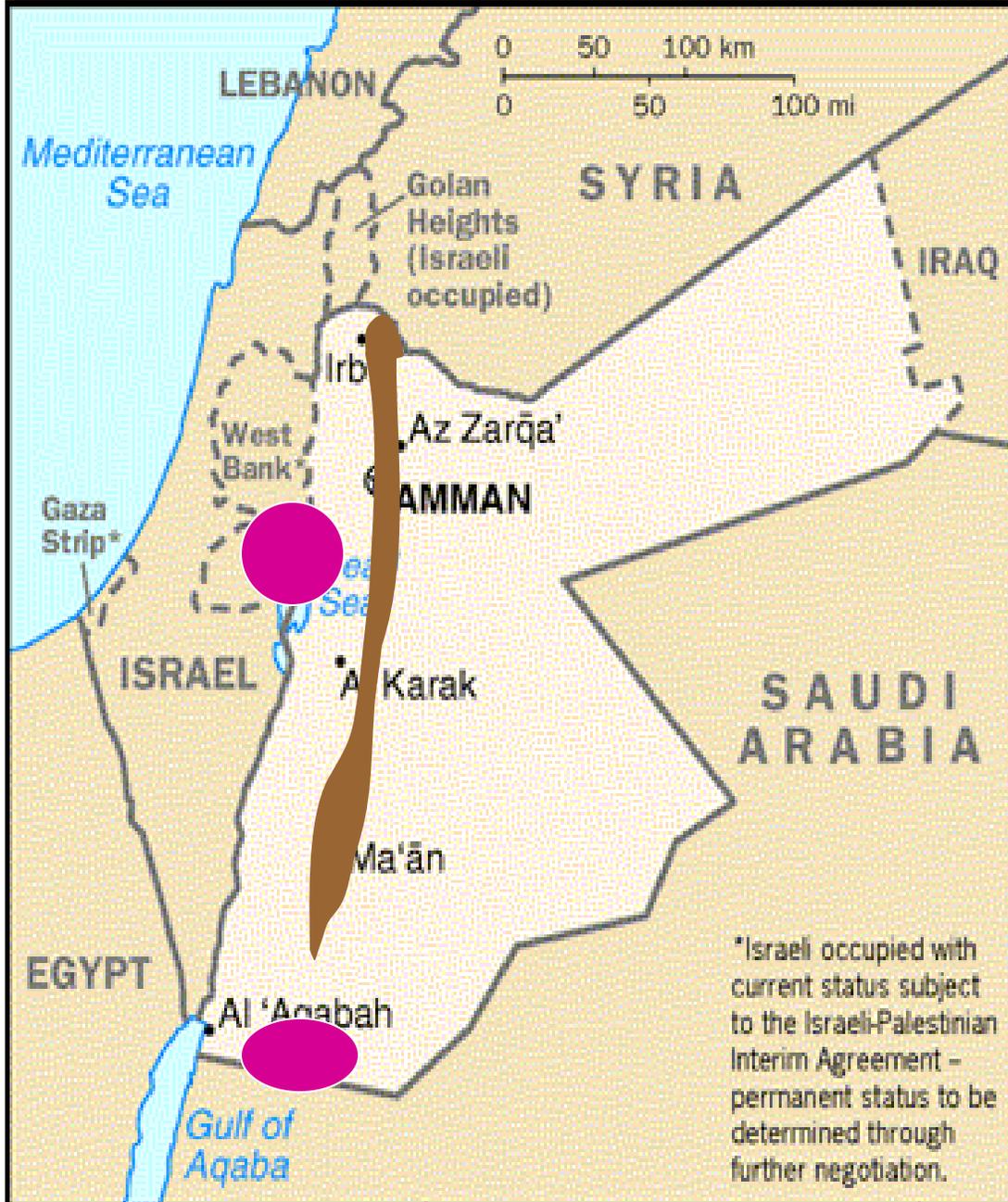
Dr.Ahmad Abu obeid

Amman-Jordan 27-29 May





*Israeli occupied with current status subject to the Israeli-Palestinian Interim Agreement - permanent status to be determined through further negotiation.



Area

total: 92,300 sq km

land: 91,971 sq km

water: 329 sq km

26 km coast line

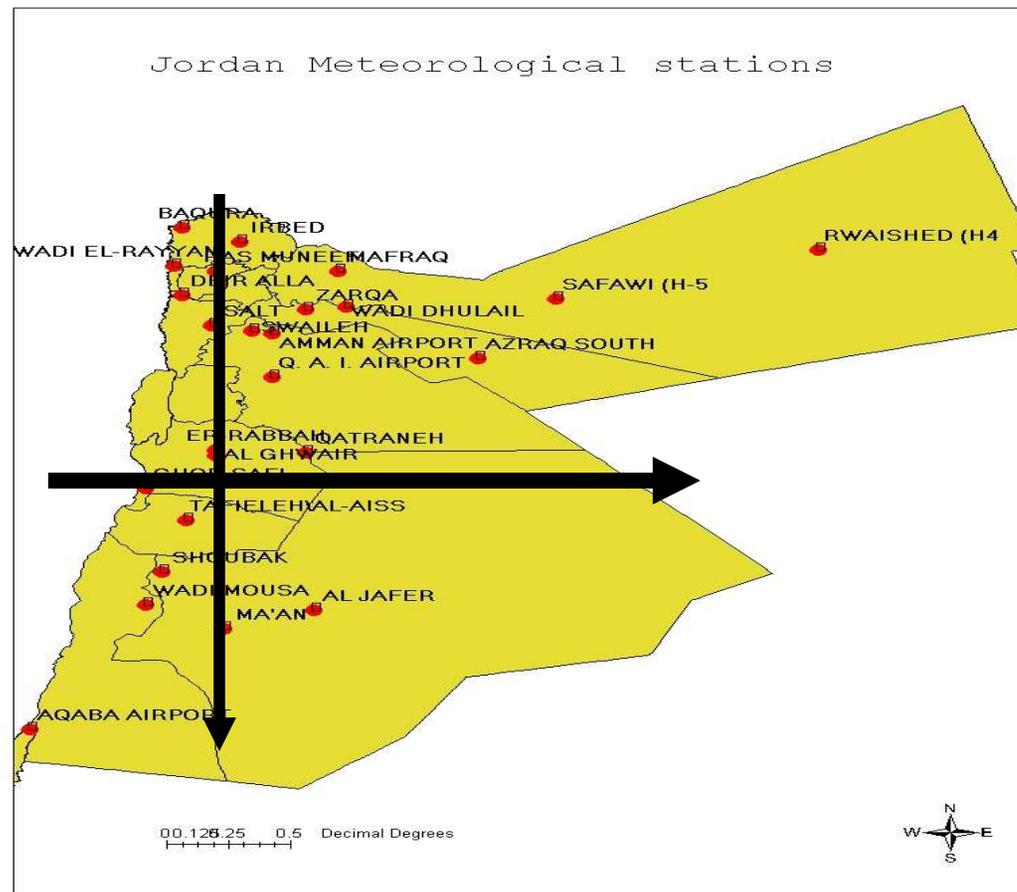
*lowest point: Dead Sea -
408 m*

*highest point: Jabal
Ram 1,734 m*

**mostly desert plateau in
east, highland area in
west; Great Rift Valley
separates East and West
Banks of the Jordan
River**

Jordan climate can be divided into 3 main types:-

1. Hilly regions
2. The Ghor(Jordan valley)
3. Desert



Jordan climate

Major characteristic:-

- **Rainy season (November to April)and very dry weather for the rest of the year.**
- **Hot, dry, uniform summers and cool, variable winters during which all of the precipitation occurs.**
- **Jordan has a Mediterranean-style climate..**
- **Jordan long summer reaches a peak during August.**
- **January is usually the coolest month.**
- **Wide ranges of temperature during a twenty-four-hour period are greatest during the summer months .**

- **Daytime temperatures during the summer months frequently exceed 36°C and average about 32°C.**
- **The winter months--November to April--bring moderately cool and sometimes cold weather, averaging about 13°C. Except in the rift depression, frost is fairly common during the winter, and it occasionally snows in Amman.**
- **For a month or so before and after the summer dry season, khamsinic conditions prevail (hot, dry air)**

Weather Phenomena

- ◆ Snow fall
- ◆ Ground frost
- ◆ Dust storm
- ◆ Fog
- ◆ Heavy rainfall (flood)

JORDAN METEOROLOGICAL DEPARTMENT (JMD)

- ◆ **The meteorological service started as a meteorological office at Amman airport in 1951.**
- ◆ **In 1955 it became a member of the WMO regional association VI (Europe), on 1967 it became an independent department.**

DATA PROCESSING

- ◆ The National Forecasting Center is the main data processing center.
- ◆ Other forecasting offices are located at Queen Alia International Airport and Military Bases.
- ◆ The raw data and products (GRID, GRIB, T4) are received from Global and Regional centers (Offenbach, Toulouse, Bracknell ...)
- ◆ Manual data decoding, plotting analysis and forecasting
- ◆ Climatic and Agro meteorological data processed in the applied and Agro met directorates using Oracle “CDMS”.
- ◆ Automatic plotting of observations on A0, A3 and A4 Charts

Observation Network in Jordan:

- ◆ **25 Synoptic Stations**
- ◆ **7 Station for Aviation purposes**
- ◆ **10 Stations for Agriculture Observation**
- ◆ **36 Stations for climate observation**
- ◆ **8 Automatic stations**
- ◆ **1 Radiosonde station**
- ◆ **Satellite station**
- ◆ **50 sites for Rain measurement**

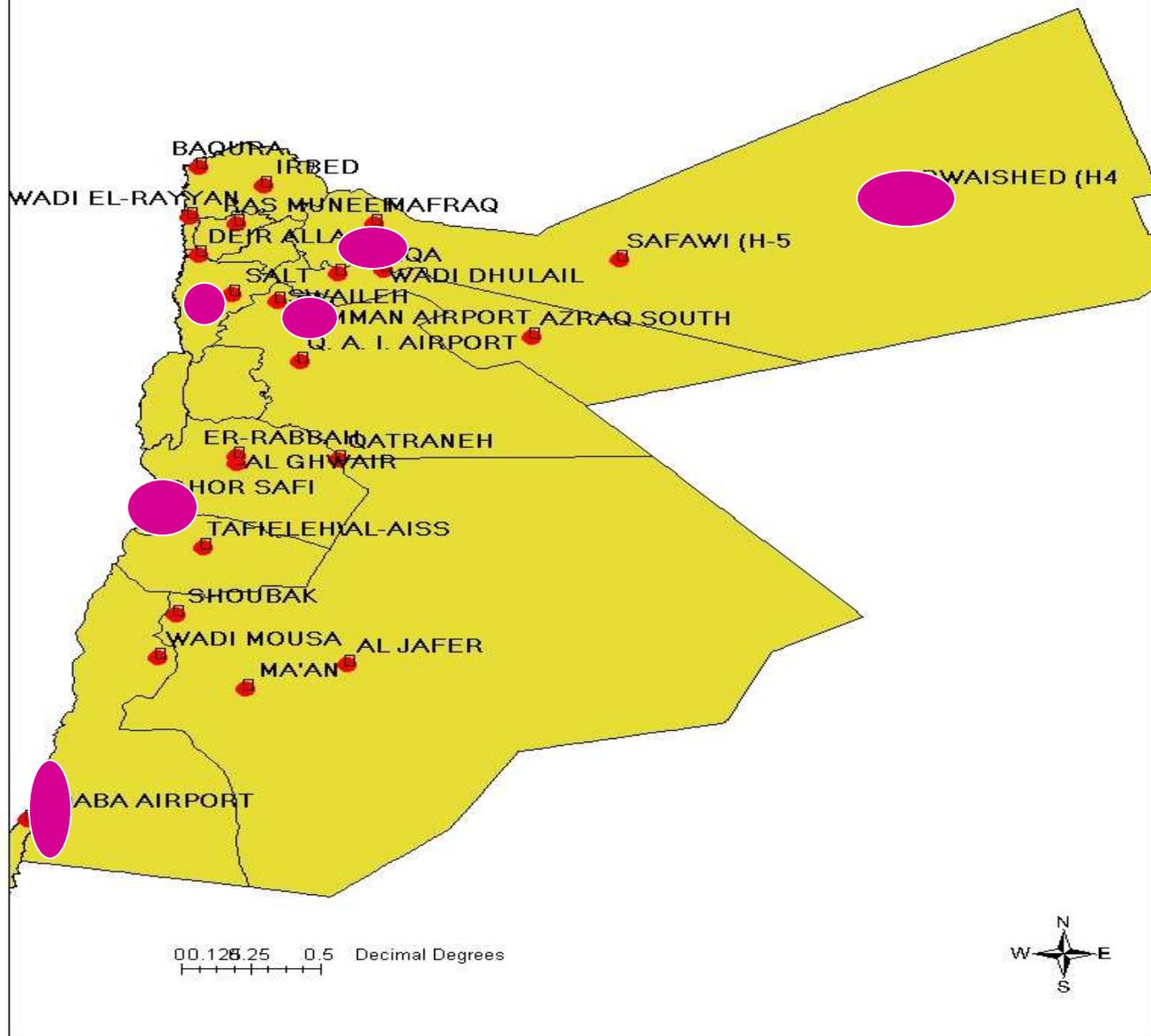
JMD Services issued for aviation purposes Including Warning Systems

- ◆ **Area forecast twice a day cover 50 miles radius for each airport.**
- ◆ **30 hours TAF are issued at the standard time.**
- ◆ **METAR and SPECI reports are issued each hour or when needed.**
- ◆ **warning reports are issued according to the synoptic situation and the weather phenomena affects the country.**

JMD Processors for warning public

- ◆ **Short and medium weather forecasting reports are issued daily and distributed to the Media and the official organizations.**
- ◆ **The agro met office has hotline contact with ministry of agriculture which concern to lead the farmers to avoid any construction in their products especially in frost or heavy rain (flood).**

Jordan Meteorological stations



Station Information

No.	STATION	WMO No.	Elevation (M)	Latitude N	Longitude E	Open Date
1	AMMAN AIRPORT	40270	779	31 59	35 59	1/1/1922
2	MA'AN	40310	1069	30 10	35 47	1/1/1938
3	IRBED	40255	616	32 33	35 51	1/1/1938
4	SHOUBAK	40300	1365	30 31	35 32	1/1/1938
5	QATRANEH	40275	768	31 15	36 07	7/20/1938
6	DEIR ALLA	40285	-224	31 13	35 57	1/1/1952
7	BAQURA	40253	-170	32 38	35 37	1/1/1955
8	AQABA AIRPORT	40340	51	29 33	35 00	2/1/1956
9	WADI EL-RRAYAN	40256	-200	32 24	35 35	1/1/1960
10	AZRAQ NORTH		533	31 51	36 49	4/25/1960
11	WADI MOUSA		1115	30 20	35 26	1/1/1961
12	AL JAFER	40305	853	30 17	36 09	1/1/1965
13	Q. A. I. AIRPORT	40272	722	31 43	35 59	1/1/1966
14	WADI DHULAIL	40267	580	32 09	36 17	11/11/1967
15	RAS MUNEEF	40257	1150	32 22	35 45	1/1/1968
16	GHOR SAFI	40296	-350	31 02	35 28	1/1/1974
17	AZRAQ SOUTH	40288	527	31 50	36 49	11/1/1980
18	SWAILEH	40269	1050	32 00	35 54	1/1/1985
19	RWAISHED (H4)	40250	683	32 30	38 12	1/1/1934
20	MADABA		785	31 43	35 48	1/1/1937
21	JORDAN UNIVERSITY		980	32 01	35 53	1/1/1938
22	MAFRAQ	40265	683	32 22	36 15	1/1/1951
23	ER-RABBAH	40292	920	31 16	35 45	1/1/1952
24	UNIVERSITY FARM		-230	32 10	35 37	1/1/1976
25	SALT	40263	915	32 02	35 44	1/1/1960
26	ALHASAN/TAFILEH	40298	1200	30 47	35 43	1/1/1972
27	SAFAWI (H-5)	40260	674	32 12	37 08	6/1/1963
28	RAMTHA		590	32 30	35 59	1/1/1976

Presentation of climate data

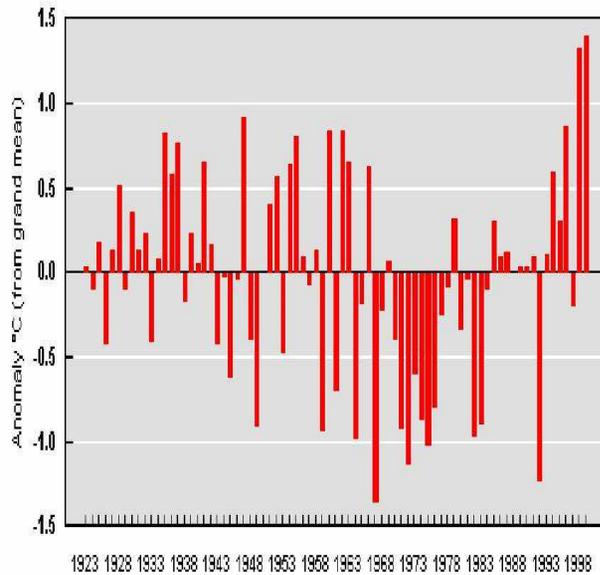
- Tabular and Graphical
- Maps
- Standard publications

The Department of Meteorology
Climate Division

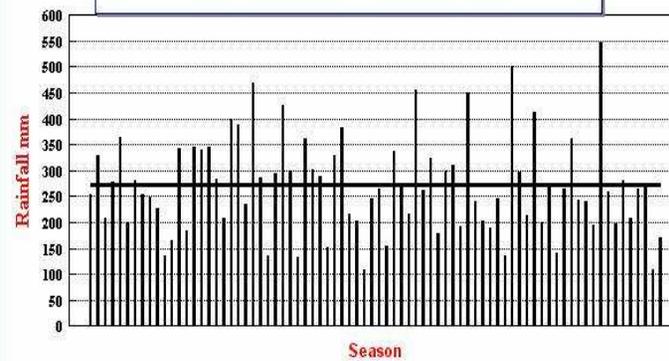
Statistics of Rainfall 'mm' since the beginning of the season until the morning of 15/05/2003

Station	Seasonal Mean	Latest Event	Cumulative up to date	Assumed Cumulative	Performance (Cum/Assumed)
RAS MUNEEF	582.2	0.0	944.2	579.5	163%
IRBED	455.4	0.0	880.5	452.6	195%
BAQURA	393.7	0.0	657.0	392.6	167%
RAMTHA	213.8	0.0	382.4	212.1	180%
SALT	558.9	0.0	849.6	557.9	152%
SWAILEH	490.0	0.0	680.2	488.4	139%
DEIR ALLA	284.2	0.0	459.2	283.4	162%
WADI EL-RAYYAN	301.3	0.0	545.0	300.5	181%
MADABA	324.9	0.0	360.0	324.7	111%
AMMAN AIRPORT	272.5	0.0	354.7	270.9	131%
ROMAN AMPH. / AMMAN	404.1	0.0	525.2	403.7	130%

Anomalies of Annual Mean Temp. (Amman)



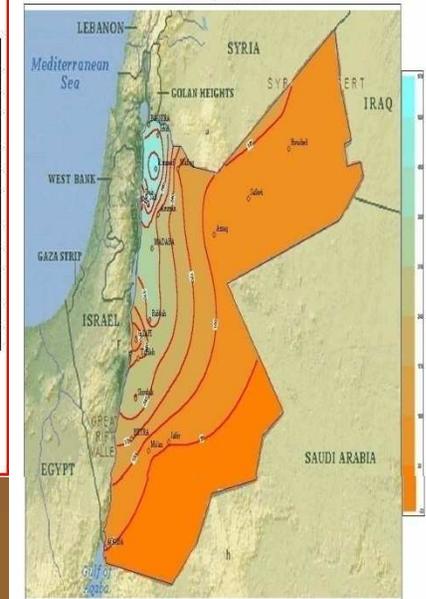
Seasonal Rainfall for Amman Airport



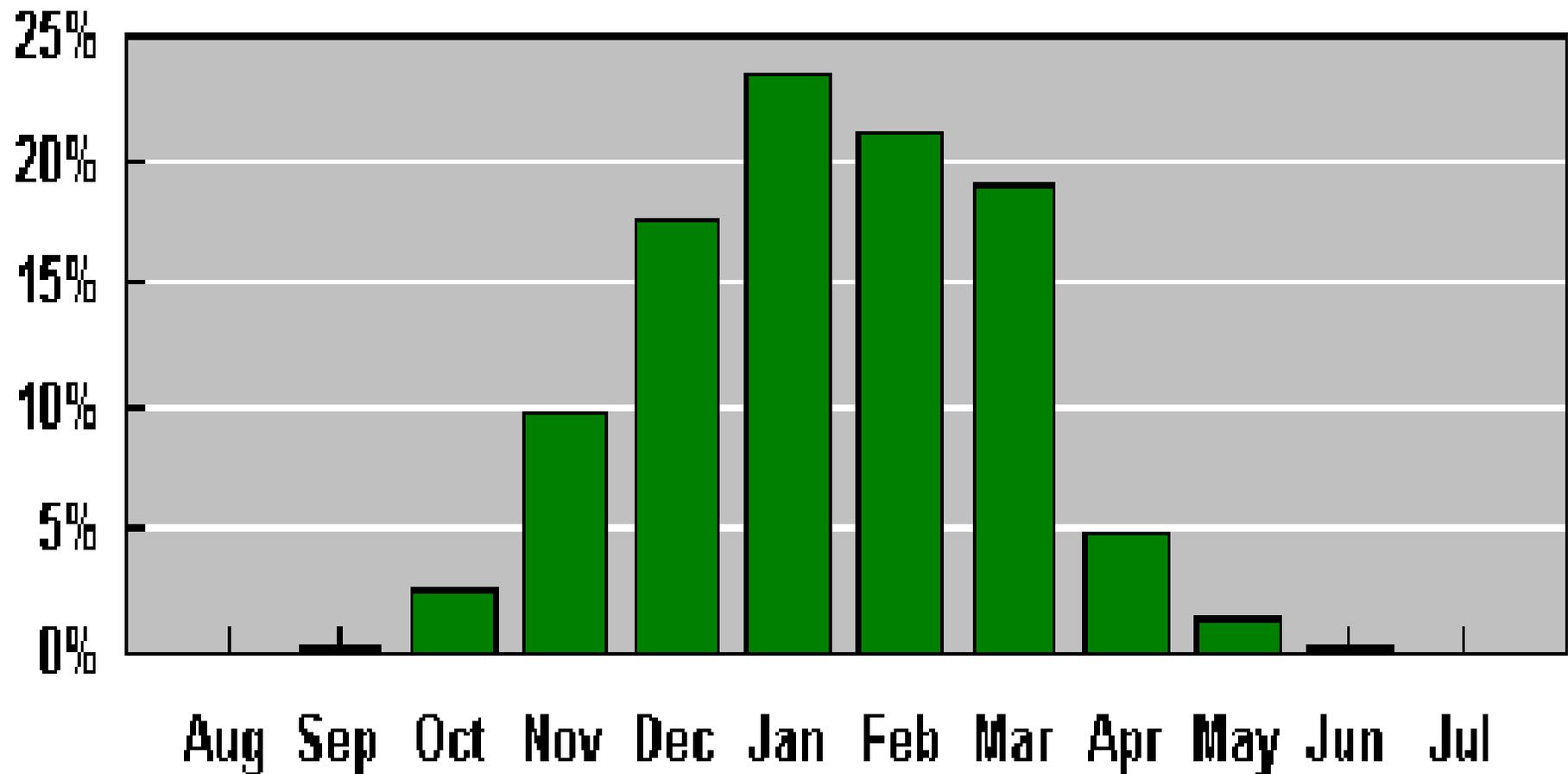
Season 1922/23 - 1999/2000

■ Season — Annual Mean

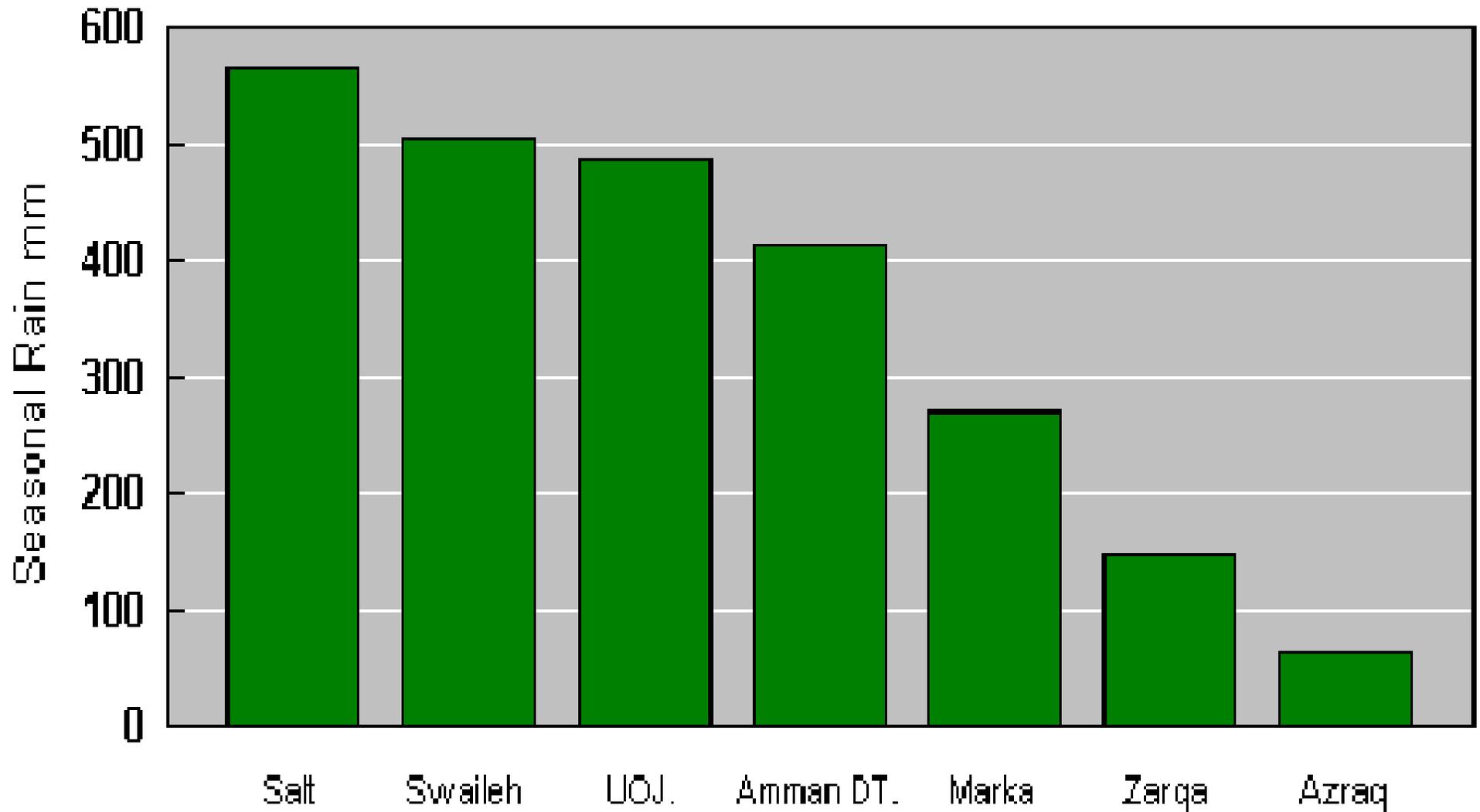
Normal Precipitation, Total 'mm'



Temporal Distribution of Rain Over Jordan

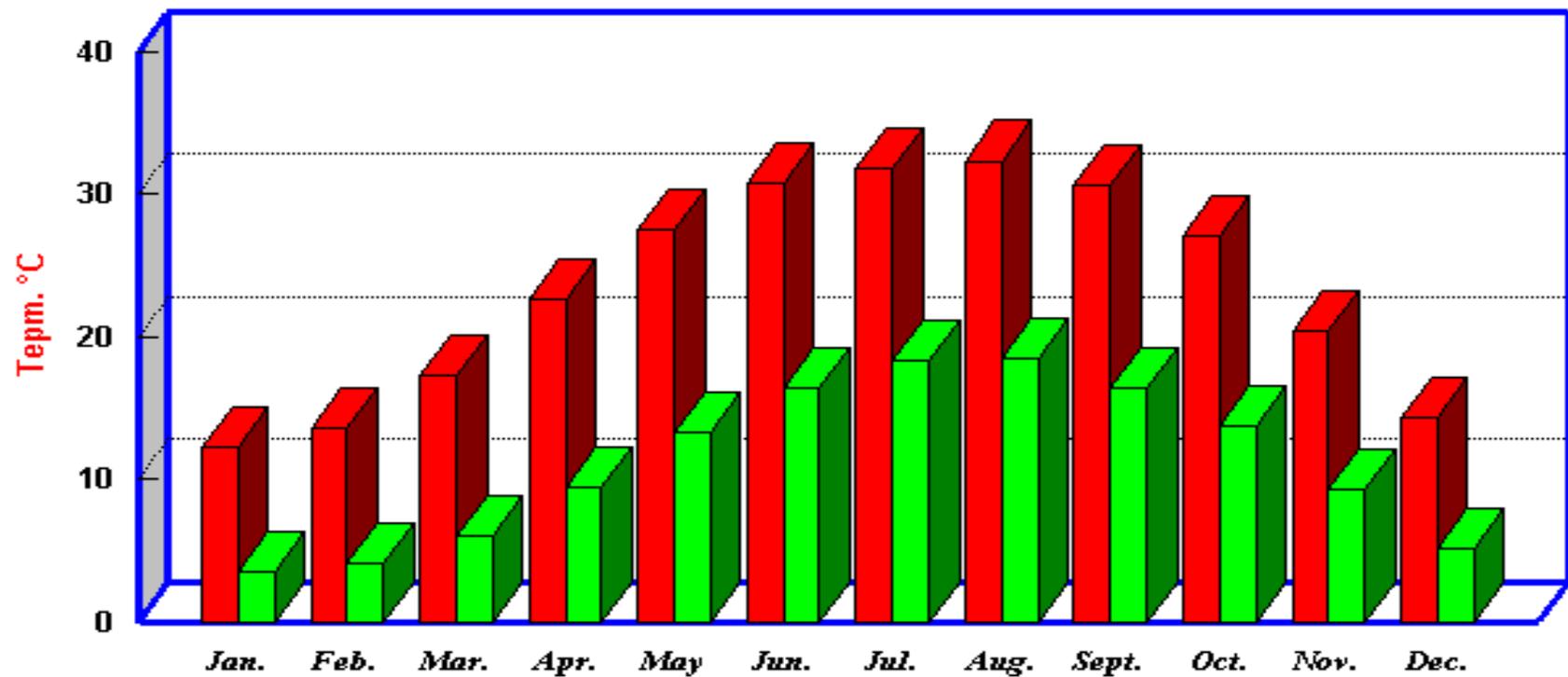


Spatial Distribution of Rain



Temperature Averages (1923-1999)

Amman Airport



■ Maximum Temp. °C

■ Minimum Temp. °C

Seasonal Rainfall for Amman Airport

