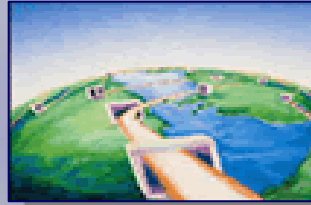


SEMIDE
EMWIS



Climate Indicator Malta

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MEDWIP EMWIS workshop
3rd/4th July 2007



Overview

- Availability of data
- Coverage and accessibility
- Usefulness of indicator
- Additional Comments



1. Data Availability

Indicator

Number of extreme hydrologic events /year



Annual average of surface water temperature

N/A

Data sources coverage and accessibility

Type of Data	National Source	Coverage /Availability
General Weather data and archives on a daily/monthly and yearly basis	Malta Weather.com	Local and National Accessible online can easily be copied to excel format and free of charge
Daily weather data but no evapotranspiration data	Malta Meteorological Organisation	Local and National No URL access Available on request
Data used is that taken from the Meteorological Station	NSO Environmental Statistics	National 2002 + 2006 Both documents accessible online and free of charge

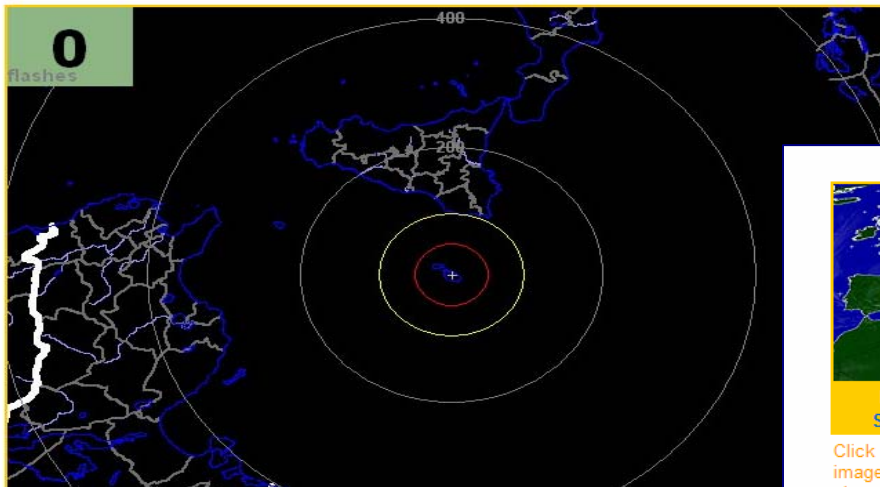
★ Chart and satellite data

MaltaWeather.com **Jesta Season** in Malta & Gozo *click here for details*

Home	Current Observations	Rainfall Readings	5-day Weather Forecast	3-day Marine Forecast
Malta's Climate	Mediterranean Weather	Weather Services	Charts & Satellite Images	Photo Gallery
About Us	Forum	Archives	Glossary	Contact Us

LATEST CHARTS & SATELLITE IMAGES

Satellite data: Latest at Mediterranean and European level



Hourly cloud cover and weather data

Latest Visible Satellite Image	Latest Infra-Red Satellite Image	Latest Significant Weather Map	Latest Rainfall Around Europe
Click on any of these images to view a larger picture			
Both satellite images are compressed to about 100 Kbytes, but are otherwise exactly as Meteosat disseminates them - coloured with a resolution of 800 x 600 pixels and with landmass outlines. Every effort is made to ensure that these pictures are as up-to-date as possible, they usually arrive within 5 minutes of reception.			
Latest Temperatures Around Europe*	Max. Temperatures Around Europe*	Min. Temperatures Around Europe*	
* Images are from the Institute for Geophysics & Meteorology at the University of Cologne in Germany. Times shown on the charts are in GMT.			

Weather Archives

Temperature Records (since November 1987):

- MAXIMUM - Mean | Lowest | Highest
- MINIMUM - Mean | Lowest | Highest
- AVERAGE - Mean of Max + Min

Rainfall records (since May 1985):

- Mean Monthly Rainfall | Number of Rain Days | Highest 24 Hour Totals
- Number of Thunderstorm Days | Number of Days with Hail

Records of Extreme Weather

- Mean Weather Records | Extreme Weather Records
- WIND RECORDS (since 1996) | WIND GUSTS - Maximum



Month	MAXIMUM	MINIMUM	AVERAGE	MEAN MONTHLY RAINFALL	RAIN DAYS
January	10.0	33.9	4.9	23.3	10.7
February	10.0	33.9	4.9	23.3	10.7
March	10.0	33.9	4.9	23.3	10.7
April	10.0	33.9	4.9	23.3	10.7
May	10.0	33.9	4.9	23.3	10.7
June	10.0	33.9	4.9	23.3	10.7
July	10.0	33.9	4.9	23.3	10.7
August	10.0	33.9	4.9	23.3	10.7
September	10.0	33.9	4.9	23.3	10.7
October	10.0	33.9	4.9	23.3	10.7
November	10.0	33.9	4.9	23.3	10.7
December	10.0	33.9	4.9	23.3	10.7

24-hour RAINFALL measured up till noon on Friday, 22nd June 2007

Location	24-hour RAINFALL
Attard	0.0 mm
Bahar ic-Cagħaq	0.0 mm
Balzan	0.0 mm
Birzebbugja	0.0 mm
Gudja	0.0 mm
Iklin	0.0 mm
Luqa	0.0 mm
Marsascula	0.0 mm
Marsaxlokk	0.0 mm
Mellieħa	0.0 mm
Mġarr (Malta)	0.0 mm
Mosta	0.0 mm
Msida	0.0 mm
Naxxar	0.0 mm
Paola	0.0 mm
Qawra	0.0 mm
Qormi	0.0 mm
Rabat	0.0 mm
San Ġwann	0.0 mm
Sannat	0.0 mm
Siggiewi	0.0 mm
Zurrieq	0.0 mm
Zabbar	0.0 mm
Zebbug	0.0 mm
Zurrieq	0.0 mm

TOTAL MEAN RAINFALL OVER THE MALTESE ISLANDS IN LAST 24HRS (noon to noon) 0.0 mm

TOTAL MEAN RAINFALL OVER THE MALTESE ISLANDS FROM LAST SEPTEMBER 1ST 458.4 mm

Environmental Statistics 2006 - data as from 1990

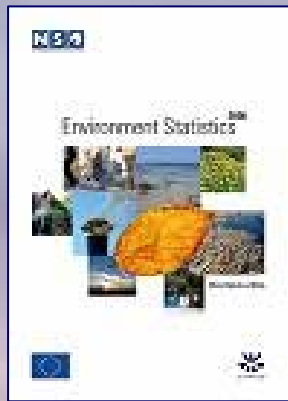


Table 2.1 Mean Wind Speed (Knots)

Table 2.2 Mean Monthly Temperatures (Degrees Celsius)

Table 2.3 Monthly Mean Bright Sunshine Duration (Hours)

Table 2.4 Total Seasonal Rainfall (mm)

Table 2.5 Temperature and Sunshine in Malta (2005) 10

Environmental Statistics 2002 - data as from 1961

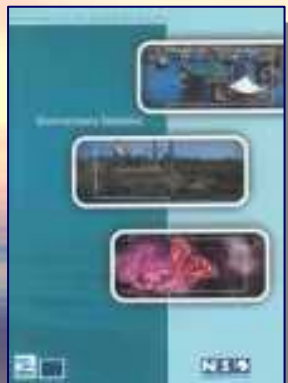


Table 11 Yearly and monthly rainfall

Table 12 Monthly mean duration of bright sunshine hours

Table 13 Number of days with wind gusts equal to one greater than 34 knots

Table 14 Yearly and monthly relative humidity at different times of the day

Table 15 Yearly and monthly lowest recorded maximum temperature

Table 16 Highest recorded maximum temperature and date

Measuring extreme events

Yearly and monthly rainfall																		
Year	WINTER				SPRING				SUMMER				AUTUMN					
	JAN	FEB	MAR	Average	APR	MAY	JUN	Average	JUL	AUG	SEP	Average	OCT	NOV	DEC	Average		
1990	197.3	1.3	6.5	68.37 w	15.6	10.3	0.03	8.64 mod	1.5	0.03	0.03	0.52 e	52.5	105.3	112	89.97 w		
1991	96.7	63.5	19.8	60 w	23.2	18.5	1.8	14.5 w	0	1	10.5	3.83 e	34.4	5.6	133	57.8 s		
1992	159.4	58.2	22	79.87 w	8.5	7.2	0	5.23 e	0.03	0	0.03	0.02 e	20.3	1.5	67.9	29.9 e		
1993	32.6	28	18.4	26.33 e	2	22.6	0.03	8.21 mo	0	0	23.6	7.87 e	53.7	65.5	57.3	58.83 s		
1994	42.8	40	8	30.27 e	102	0.2	0.03	34.01 w	0	0	3.3	1.1 e	225.9	51.3	22.2	99.8 w		
1995	83.3	12.6	25.9	40.6 s	24.1	0.03	1.4	8.51 s	0	2	142.1	48.03 w	74	57.5	90.7	74.07 mi		
1996	42.1	105	67.4	71.5 w	23.3	2.5	4.2	10 mi	0	14.7	29.3	14.67 mo	56.6	9.8	35.3	33.9 e		
1997	37.3	37.4	30.6	35.1 e	7.8	1.5	2.2	3.83 e	0	55.1	123.8	59.63 w	100.5	98.2	57.4	85.37 w		
1998	26.3	4	22.5	17.6 e	17.9	0.7	0.03	6.21 e	0	0.03	82	27.34 w	2.3	56.9	20.5	26.57 e		
1999	46.6	43.2	26.1	38.63 e	2	0.2	0	0.73 e	0.03	12.5	9.6	7.38 e	13.6	292.9	146	150.67 w		
2000	120.9	118.5	6.4	81.93 w	22.5	5.3	0.02	9.27 mo	0.02	0	23.1	7.71 e	75	14.6	65.4	51.67 e		
2001	74	38.1	36.3	49.47 mo	12.6	30.9	0.02	14.51 w	0.02	13.5	14	9.17 e	11	38.5	72.4	40.63 e		
2002	22	60.6	9	30.53 e	5.7	9.2	0.02	4.97 e	0.02	17.2	21.4	12.87 s	22.4	180	107	103 w		
2003	151.8	150	55.4	119.07 w	21.4	27.2	16.2	21.6 w	0.02	0.8	260.1	86.97 w	37.4	85.4	102	74.93 mi		
2004	48.8	14.8	21.6	28.4 e	30.2	3.2	3	12.13 w	0	0.02	79.8	26.61 w	19.8	148.6	91.6	86.67 w		
2005	36.2	82.6	7.8	42.2 w	15.2	1.2	0.4	5.6 e	0.02	20.8	39	19.94 w	94	61.2	147	100.8 w		
2006	232.4	63	30	108.47 w	0.6	0.8	2.5	1.3 e	0	8.6	37.8	15.47 mo	82.5	57.2	108	82.53 w		
MEAN	85.324	54.165	24.34	54.6082	19.7	8.325	1.8753	9.955882	0.098	8.6047	52.9094	20.53706	57.41	78.24	84.4	73.3594		

LEGEND	Precipitation:
Extreme (e)	<70% of normal precipitation
Severe (s)	between 70% and 80% of normal precipitation
Moderate (mo)	between 80% and 90% of normal precipitation
Mild (mi)	between 90% and 100% of normal precipitation
Wet (w)	100% and above of normal precipitation

Usefulness of Indicators

Indicator	Usefulness
Number of extreme hydrologic events /year	5 potential of usefulness if considered together with other indicators
Annual average of surface water temperature	n/a inland surface waters 5 Applicable for sea waters

Additional Comments

- Additional indicators for measuring extreme hydrologic events do not exist at the moment. However, this situation will change with the Flood Water Directive, which will soon come into force

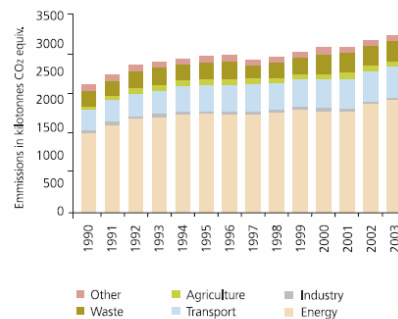
- Climate change as a national indicator is assessed more in terms of greenhouse gas emissions

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STATE OF THE ENVIRONMENT 2005

CC1 GREENHOUSE GAS EMISSIONS BY SECTOR

- Key policy question: Are Malta's greenhouse gas emissions rising?



Source: MEPA 2005b

Malta's greenhouse gas (GHG) emissions rose by more than 44% between 1990 and 2003, with CO₂ (carbon dioxide) being by far the most significant contributor, in comparison with the other greenhouse gases (methane, nitrous oxide, nitrogen dioxide, carbon monoxide, sulphur dioxide and non-methane volatile organic compounds).¹⁴ Despite its rising emissions, Malta had one of the lowest GHG emission rates per capita in the EU, 7 tonnes compared to the EU average of 11 tonnes in 2000. The energy sector contributes approximately 63% of Malta's GHG emissions. GHG emissions from transport increased steadily between 1990 and 2000, in step with rising vehicle numbers. They grew by 45% over 10 years and now account for 20% of total emissions.¹⁵ Malta has a relatively high rate of GHG emissions per unit GDP, standing at 910 tonnes of CO₂ equivalent per million Euro as against the EU average of 605 tonnes¹⁶ in 2000, which is likely to be related to low levels of efficiency in energy generation and consumption. In 2003, Malta accounted for just 0.055% of total EU greenhouse gas emissions. EU-15 GHG emissions were 3.3% below 1990 levels in 2000, however, in 2003 emissions rose to 1.4% below 1990 levels. EU-25 emissions were 5.5% below the 1990 level in 2003.¹⁷

¹⁴ MEPA 2005b. ¹⁶ MRAE 2004b.
¹⁵ MEPA 2005b. ¹⁷ EEA 2005.

The background of the slide is a photograph of a sky during a sunset or sunrise. The sky is filled with soft, wispy clouds in shades of blue, purple, and pink. A bright yellow and orange glow is visible near the horizon, suggesting the sun is either setting or rising. A solid blue horizontal line runs across the top of the image, just below the top edge of the slide.

Thank you