SEECOF-9 verification for JJA 2013 over Israel

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2m Temperature

1) The SEECOF-9 temperature outlook assigned 60% probability for the above normal tercile, 30% for the normal tercile and 10% for the below normal terciles (Fig. 1). Such a distribution indicates relatively high confidence for above normal conditions.

2) The 12 GPC's average forecast indicated a small warm anomaly (Figures 2 and 3).

3) JJA 2012 average temperature, as indicated by 4 representative stations across Israel, resides in the normal tercile (Figures 3 and 4).

4) Figure 4 shows verification of 30 years (1981-2010) one month lead (from May) of ECMWF seasonal re-forecasting for JJA T2m temperature over Northern and Central Israel (5 grid points). The correlation coefficient between observed and predicted is 0.75. The hit score (positive if the forecast median and observed reside in the same tercile) for the most probable tercile was 57%. This value reaches 70% when forecast is for above normal conditions, as forecasted for 2013 (table 1).

5) The 51 operational ECMWF ensemble for 2013, assigned probability of 6% for the below normal tercile, 29% for the normal tercile and 65% for the above normal tercile.

To conclude – The SEECOF-9 forecast was based primarily on ECMWF and it was not a success. For JJA 2013, using poor man ensemble turned up to be better than ECMWF. Also Eurosip with a given resolution of 2.5 degrees was good. Perhaps removing from the poor man model ensemble extreme unrealistic forecasts, such as CPTEC with an anomaly of 2.5°C (3.5 times the maximum anomaly observed) would be recommended. The main problem is the absence of 30 year hindcast, for verification and reference climate parameters, for the Eurosip and other models.
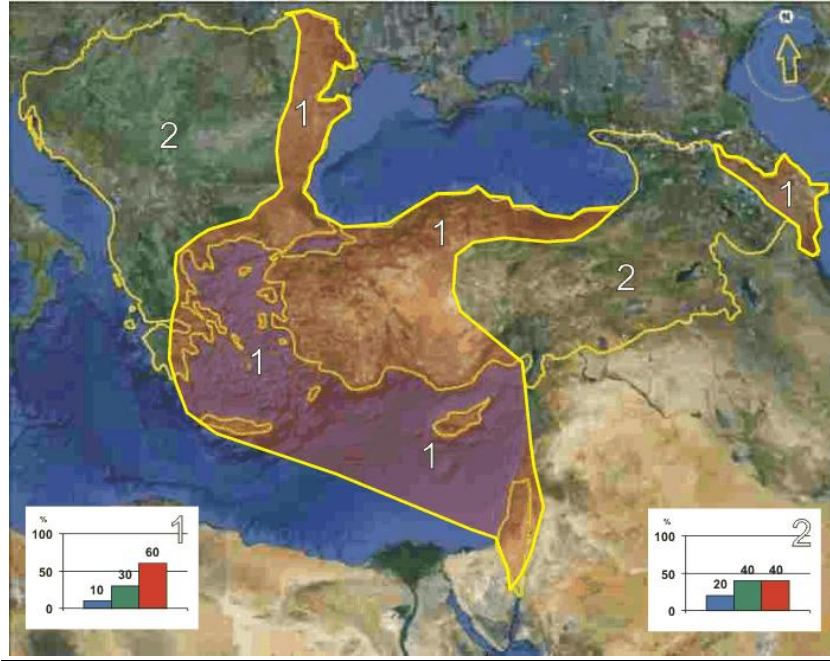
Fig. 1: The SECOFF-9 2013 JJA temperature forecast.

GPC_Seoul/GPC_Washington/GPC_Toulouse/GPC_Tokyo/GPC_Montreal/GPC_Melbourne/GPC_Exeter/GPC_ECMWF
GPC_Beijing/GPC_Moscow/GPC_Pretoria/GPC_CPTEC

2m Temperature : JJA2013
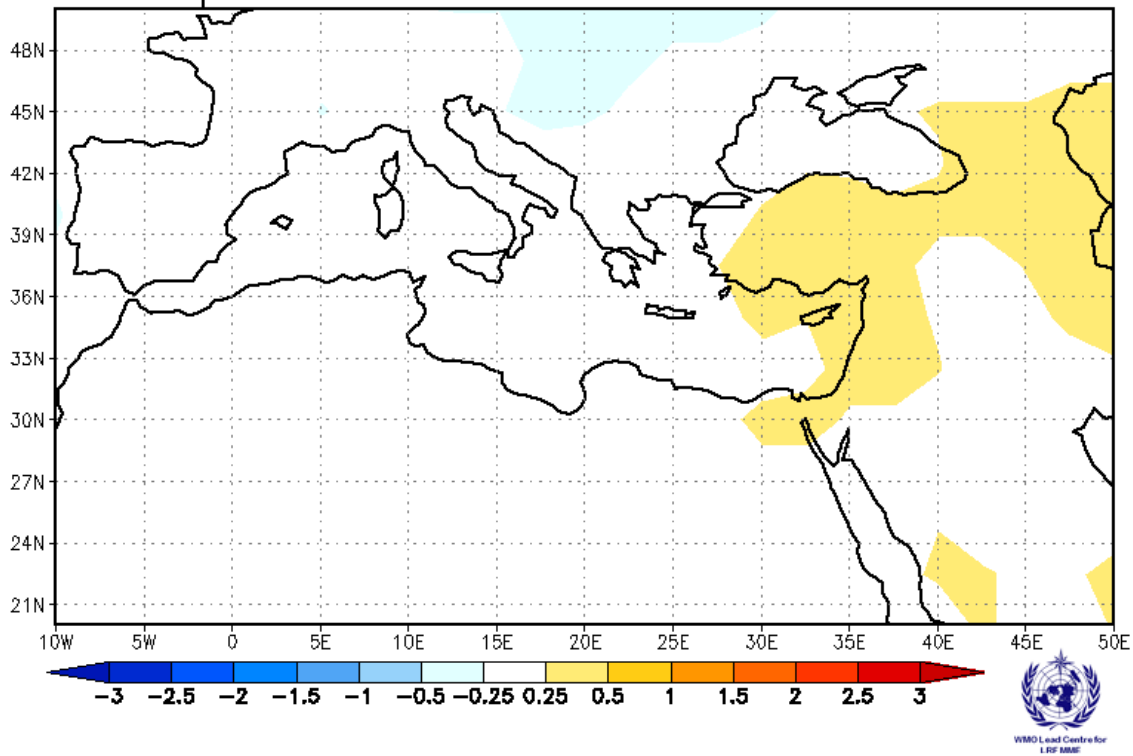
(issued on May2013)

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Fig 2: The average JJA 2013 temperature anomaly from the 12 GPCs.
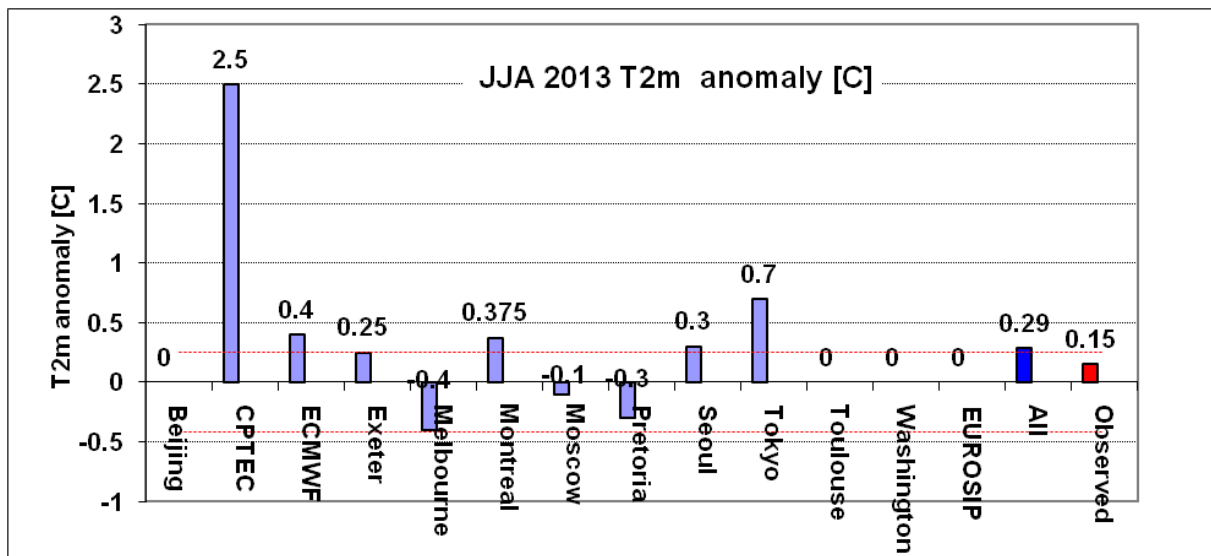

Fig. 3: Temperature anomaly for JJA 2013 over Israel subjectively retrieved from the 12 GPC's presented in http://www.wmolc.org/. The red dashed lines present the **observations** 33.3% and 66.7% percentiles thresholds anomaly.
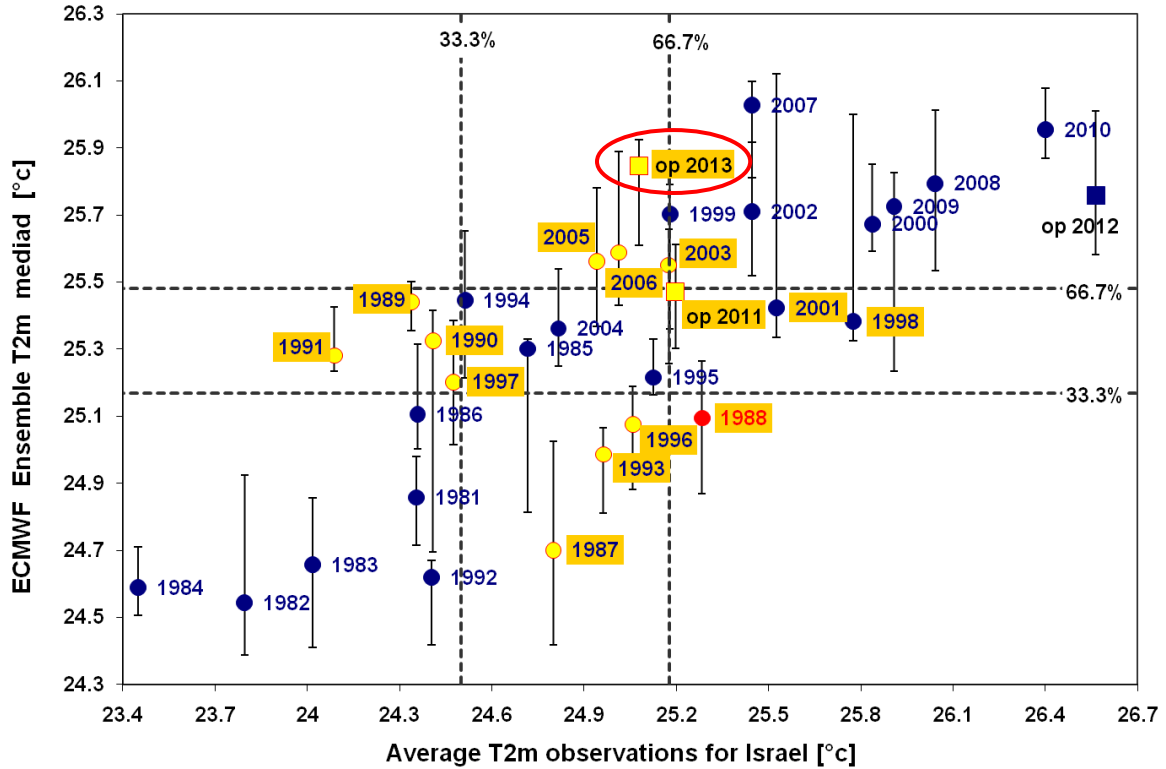
Fig. 4: The 2m temperature ensemble median vs. average of 4 representing stations across Israel. The vertical error lines show the middle 33% probability range of the ECMWF reforecast ensemble (5 members in the middle of 15 ensemble members in the hindcast period and 17 members in the operational period). The dashed lines show the middle tercile thresholds of both the ECMWF hindcast and observed temperatures. The blue dots are hits (observed and forecast in the same tercile), the yellow false and the red bust (2 categories between observed and forecast). The 2011 - 2013 operational forecasts with 51 members are indicated in squares.

Table 1: T2m ECMWF hit scores for JJA in Israel forecasted from May (one month ahead). Based on from 15 Ensembles members reforecast for 1981-2010.

Observed / Forecasted	below	Normal	above	Hit Score
True	60%	40%	70%	56.67%
False	30%	60%	30%	40.00%
Bust	10%	------------	0%	3.33%
Number of years	10	10	10	30