Seasonal outlook for DJF 2019/20 conditions over Israel

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The Seasonal forecast issued by the Israeli Meteorological Service (IMS) is based on ECMWF system 5 seasonal forecast.

1. Prediction of surface air temperature in the surface (2m above ground level) for DJF 2019/20

Figure 1 presents the probabilities for the 3 surface air temperature (2m above ground) terciles over Israel for winter 2019/20 (DJF 2019/20).
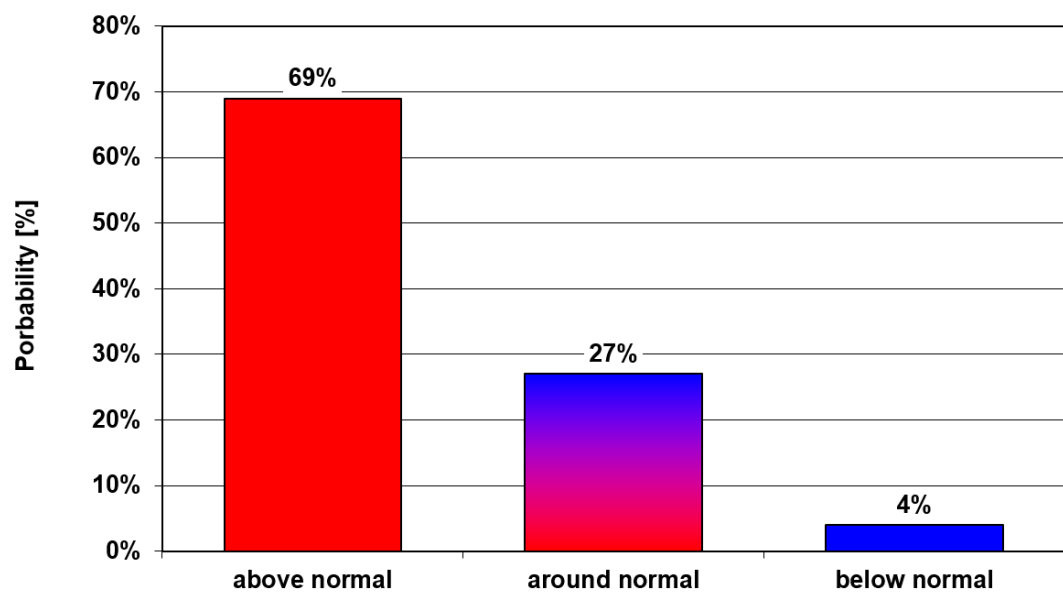

Figure 1: The probabilities for the 3 temperature terciles over Israel for winter 2019/20 (DJF 2019/20).

According to figure 2 there is a preferred category above or equal 40%. The highest probability is in the category of above normal, 69%. The probability to be around normal is 27% and the probability to be below normal is only 4%. Hence, DJF averaged surface air temperature in the surface (2m) is expected to be above the normal, in the upper tercile. The mean ensemble of 2019 relies in the percentile above 99% regarding to the distribution of the climatology period 1981-2010.

The predication of surface air temperature for winter in Israel is based on ECMWF seasonal forecast system 5 Ensemble which contains 51 members for the operative prediction. The prediction is relative to the model climatological 1 period 1981/82-2010/11 which is based on Ensemble of 750 members. The prediction is based on the area of 38 grid points, which include the whole area of Israel which can be seen in figure 2.
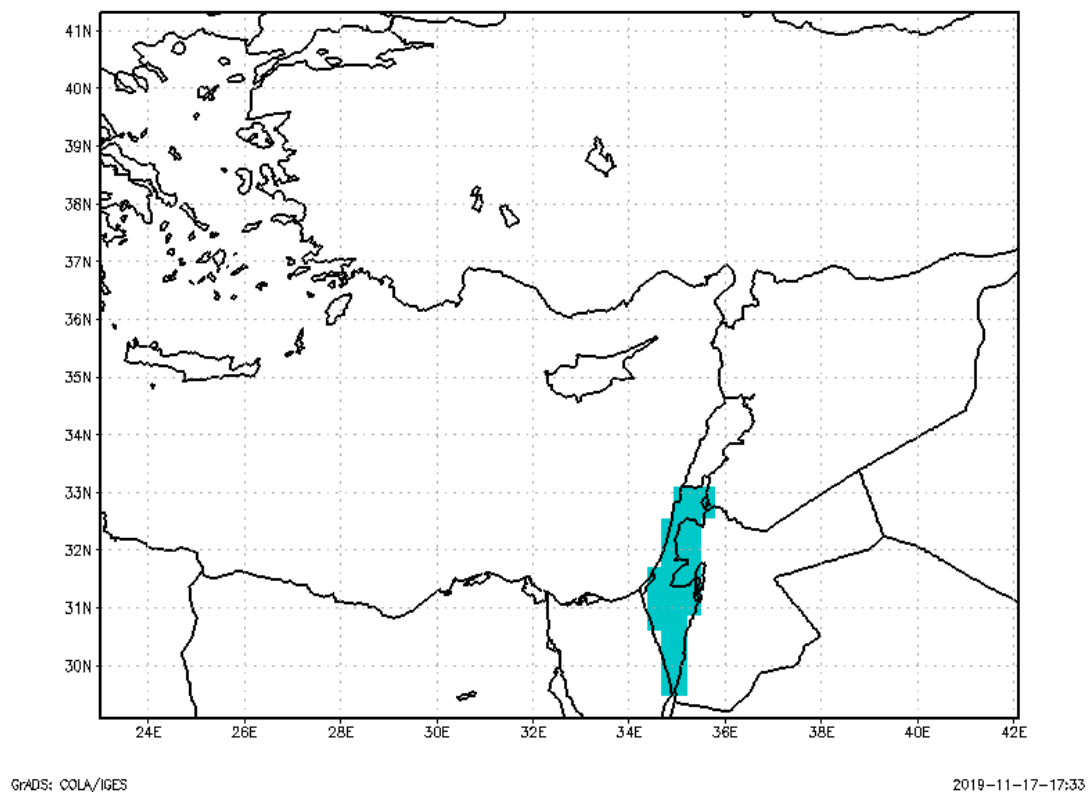

Figure 2: The area of 38 grid points which are used in order to make surface air temperature seasonal forecast for DJF season in Israel.

2. Prediction of precipitation for DJF 2019/20

Figure 3 presents the probabilities for the 3 precipitation terciles over Israel for winter 2019/20.
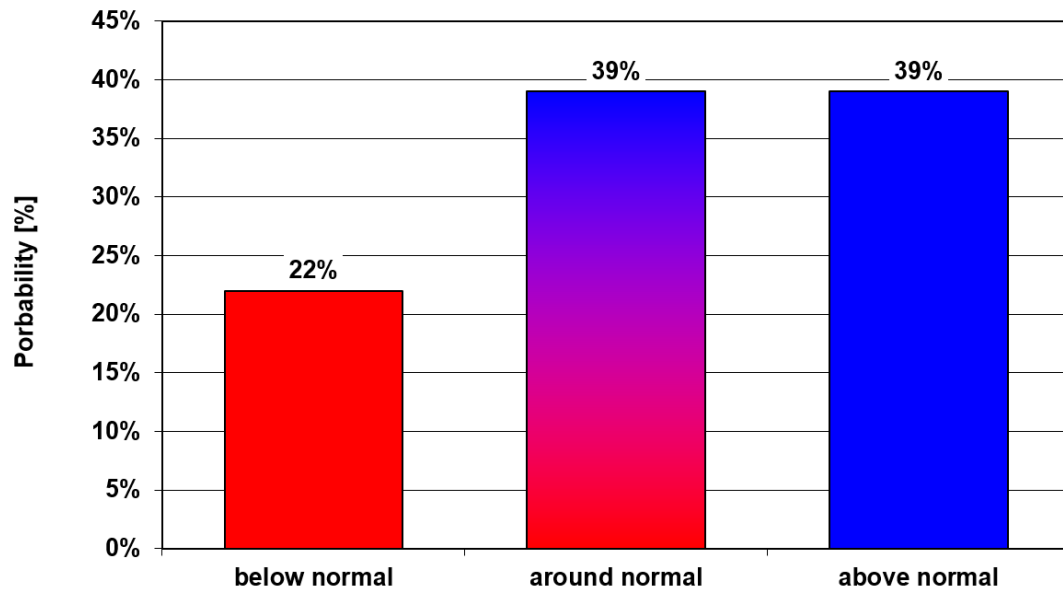

Figure 3: The probabilities for the 3 precipitation terciles over Israel for winter 2019/20.

According to figure 2 there is no preferred category above or equal 40%. The highest probabilities are in the categories of around normal (39%) and above normal (39%). The probability for the lower tercile (below normal) is only 22%. The prediction indicates no signal for DJF 2019/2020, because there is no preferred category above or equal 40% of probability. The mean ensemble of 2019 relies in the percentile of 85% regarding to the distribution of the climatology period 1981-2010.

The predication of precipitation for winter in Israel is based on ECMWF seasonal forecast system 5 Ensemble which contains 51 members for the operative prediction. The prediction is relative to the model climatological l period 1981/82-2010/11 which is based on Ensemble of 750 members. The prediction is based on the area of 20 grid points where the averaged observed precipitation is above the of 200 mm isohyet (for

all the rainy season not only DJF). Therefore, we include only the region which is north from beer Sheva city (north from latitude 31.3°N). By GIS maps most of the area which is north to beer Sheva have in average more than 200 mm per rainy season.

In summary: the predication of precipitation in Israel include only the area which is north from Beer Sheva city (north from latitude 31.3°N).

The next figure (figure 4) presents the 20 grids point which we are using in order to make prediction for Israel precipitation in DJF season.
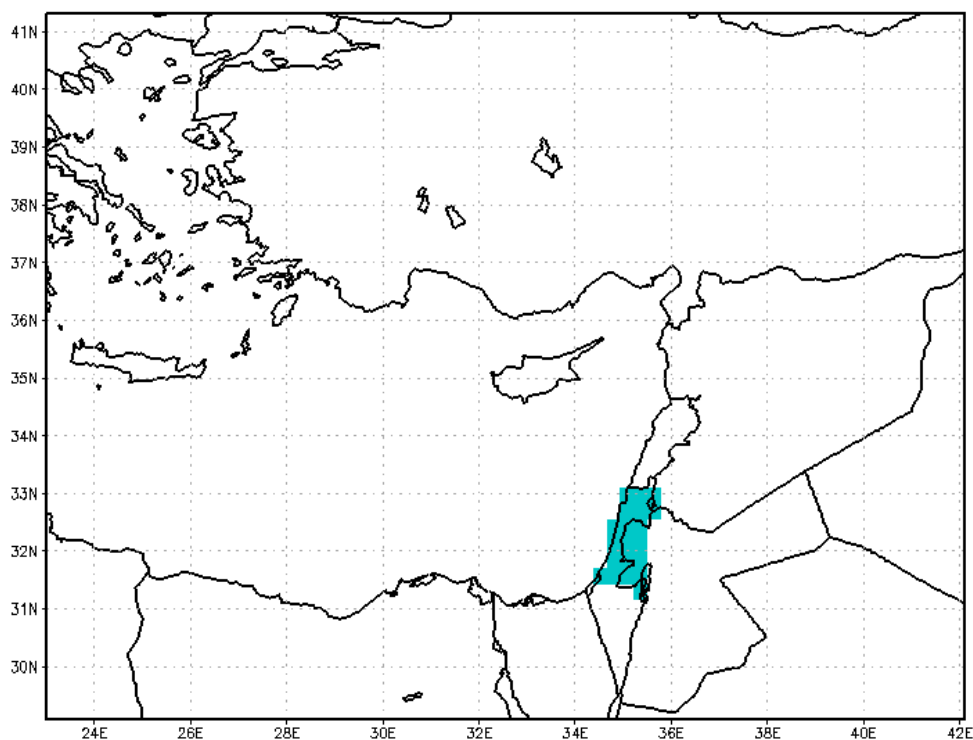
Figure 4: The area of 20 grid points which are used in order to make precipitation seasonal forecast for DJF season in Israel.

Please notice the fact that before season DJF 2017/18, (DJF 2016/17 and before) we used to work on ECWMF seasonal forecast system 4, which was approximately two time less in resolution than system 5, therefore we used only 5 grid points in order to predict the winter seasonal forecast precipitation, instead of 20 grid points which are being used today.