Seasonal outlook for winter 2014/15 weather conditions over Greece

Hellenic National Meteorological Service (HNMS) provides seasonal outlook for the forthcoming winter 2014/15, namely December, January and February (DJF) mainly archived from the European Centre for Medium-Range Weather Forecasts (ECMWF). In addition the forecasts discussed are also from the Met Office global seasonal prediction system version 5, referred to as 'GloSea5' (source: http://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/glob-seas-prob) and the International Research Institute (IRI) experimental Climate Outlook for Europe (source: http://portal.iri.columbia.edu). The seasonal outlook for winter for precipitation and temperature based on all three systems, with reference to the 1981-2010 climatology for both ECMWF (IFS model) and IRI and 1996-2009 UK Met Office (GloSea5) are presented in this report.

ECMWF seasonal forecasts of mean 2m temperature anomalies for winter 2014/15, based on the October 2014 run, are presented in Figure 1. A slight increasing tendency of 0.5-1ºC is evident over the entire country while a lower positive mean 2m temperature anomaly of 0.5ºC is also detected. These lower anomaly values for 2m temperature are forecasted over eastern parts of Greece (mainly East Aegean islands). Contradictory in Figure 2, which illustrates the probability map for 2m temperature to exceed the upper 20th percentiles it is shown that western parts of Greece, as well as Crete island are expected to have higher (up to 1ºC) than normal 2m temperatures. The probability of these regions to be above climatologically average reaches up to 70%. This statement is also supported by the IRI multi –model probability forecast presented in Figure 3, where regions whose distribution of likely outcomes is shifted very substantially from the climatologically average, are highlighted. The probability map of 2m temperature for DJF 2014/15 prepared by IRI, shows that the expected probabilities of the seasonal temperatures are at least moderately (45-50%) enhanced for above normal. Figure 4 illustrates the UK Met Office forecasts based also on October 2014. Probability maps of above, near and below normal 2m temperature presented for winter 2014/15, indicate that temperature will be above normal over the entire country (40-60% probability) as also supported by the ECMWF forecast. This is in accordance to ECWMF and IRI outlook. Thus the winter 2014/15 forecast for 2m temperature for Greece suggests an overall warmer than climatology winter, while the higher 2m temperatures are expected over Western and Southern parts of Greece.

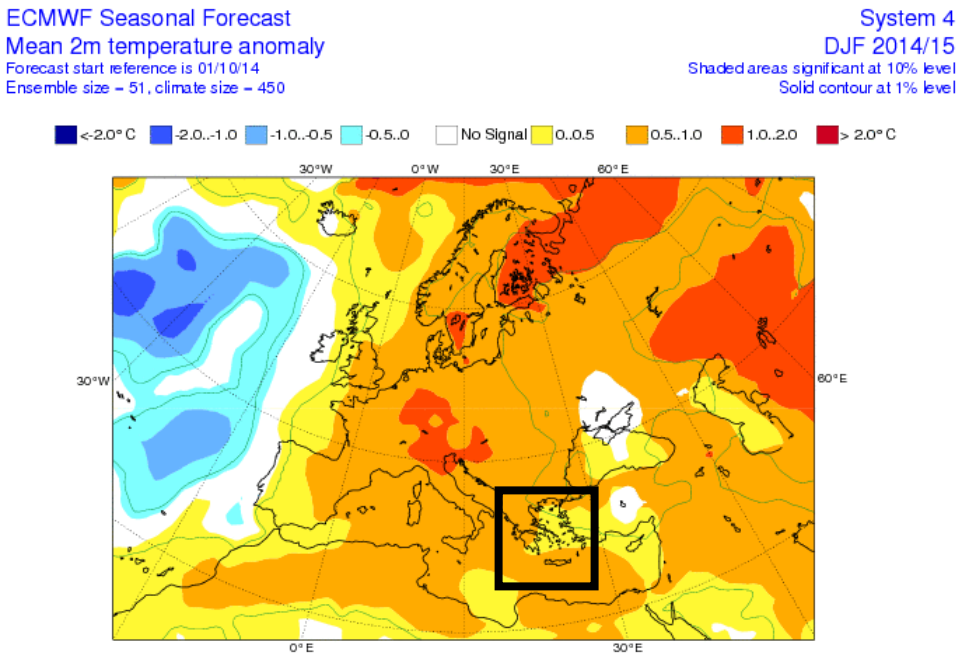

Figure 1. ECMWF seasonal forecast for winter 2014/15 for mean temperature anomalies, based on the October 2014 run.
Source:http://www.ecmwf.int/products/forecasts/d/charts/seasonal/forecast/seasonal_range_forecast/

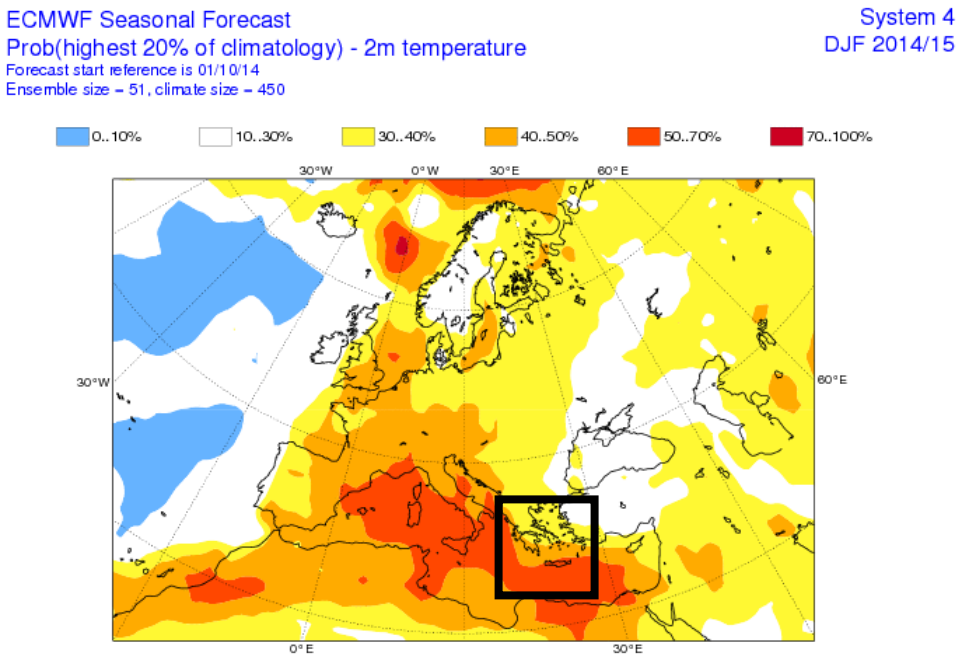

Figure 2. ECMWF seasonal forecast for winter 2014/15 for probability of 2m temperature at the 20% highest climatology value, based on the October 2014 run
Source:http://www.ecmwf.int/products/forecasts/d/charts/seasonal/forecast/seasonal_range_forecast/

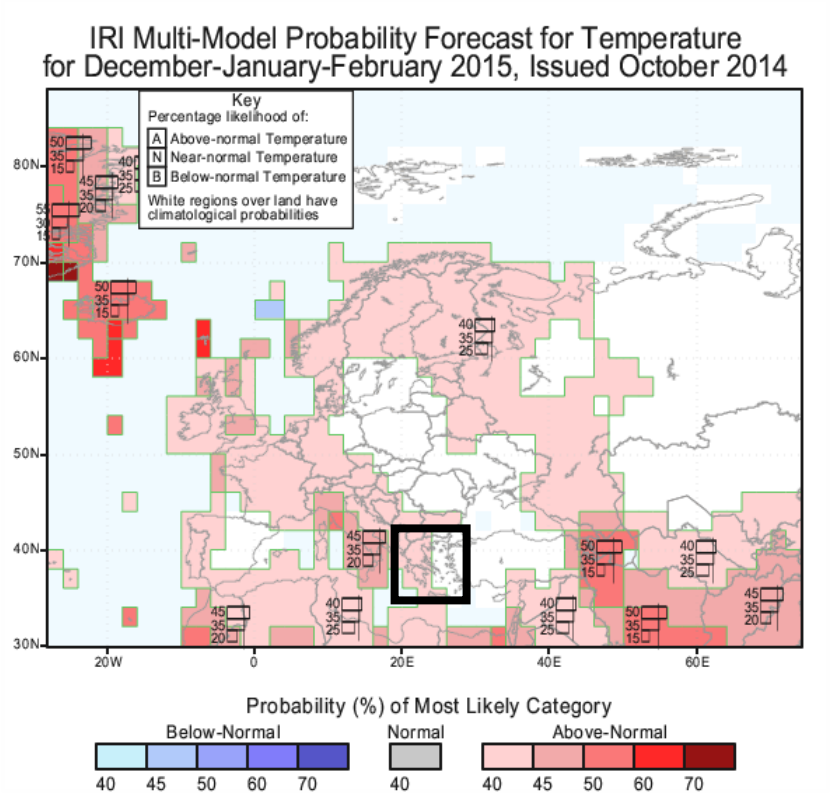

Figure 3. IRI seasonal forecast for winter 2014/15 based on the October 2014 run for the 2m temperature probabilities.
Source:http://iri.columbia.edu/our-expertise/climate/forecasts/seasonal-climate-forecasts

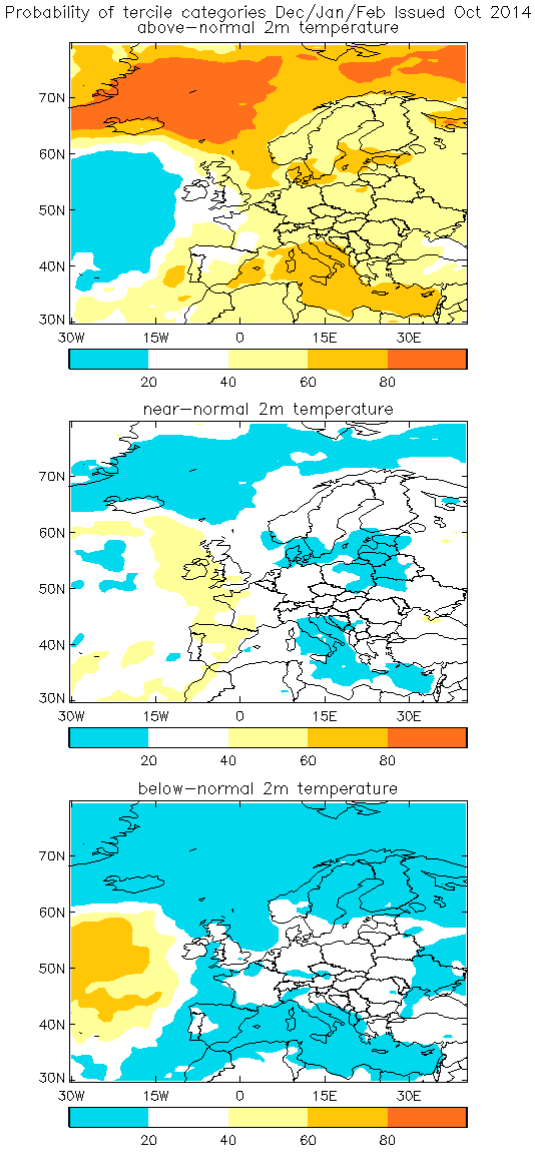

Figure 4. UK Met office seasonal forecast of probability for winter 2014/5 for 2m temperature, based on the October 2014 run
Source:http://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/glob-seas-prob

Regarding mean precipitation, the ECMWF seasonal forecast illustrated in Figures 5 and 6, the IRI probability maps in Figure 7 as well as the UK Met Office forecasts in Figure 8, indicate a weak signal. According to all seasonal forecasts presented, based on October 2014, it is evident that a specific seasonal outlook for precipitation can not be determined. A small above upper tercile probability (40-50%) in Figures 5, 6 and 8 over Crete and south-eastern parts respectively compared to model climatology is detected. Thus according to model outputs it can be assumed that during winter the precipitation is not likely to be shifted substantially from climatologically normal values for Greece.

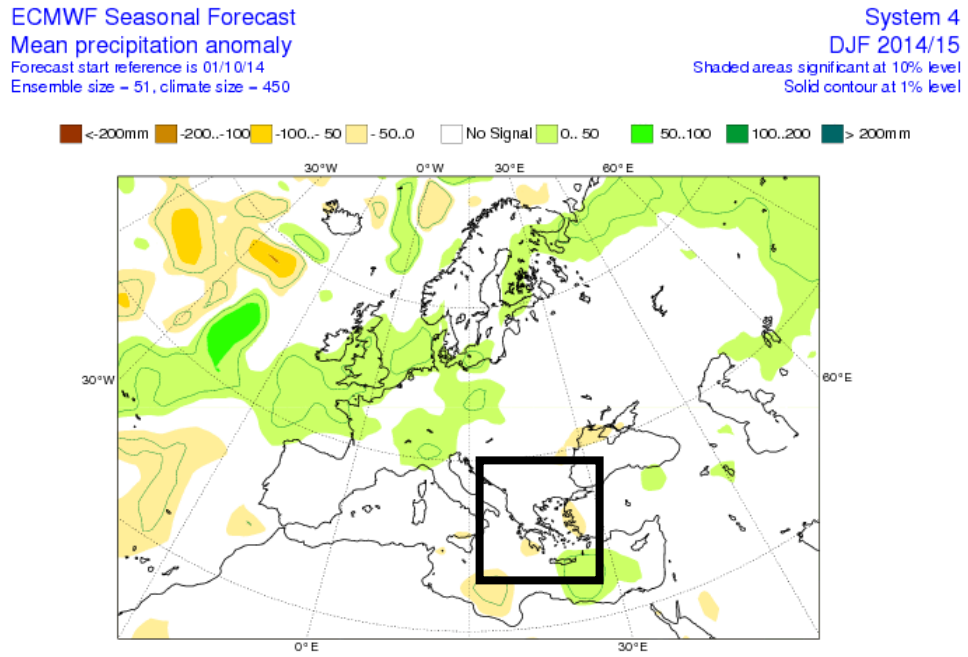

Figure 5. ECMWF seasonal forecast for winter 2014/15 for mean precipitation anomalies, based on the October 2014 run

Source:http://www.ecmwf.int/products/forecasts/d/charts/seasonal/forecast/seasonal_range_forecast/

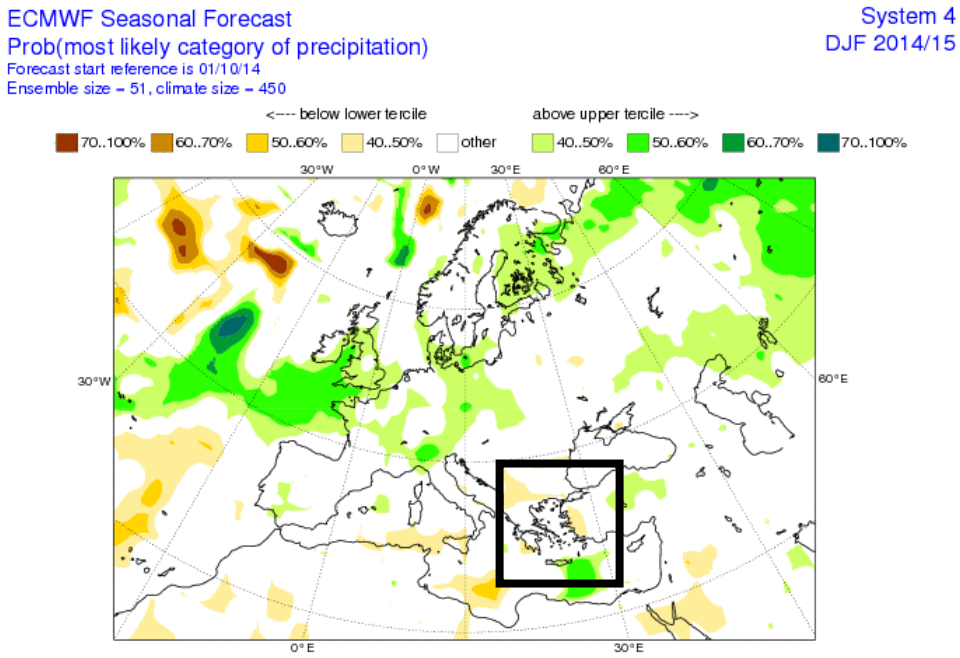

Figure 6. ECMWF seasonal forecast for winter 2014/15 for the probability of most likely category of precipitation (below-above upper tercile), based on the October 2014 run

Source:http://www.ecmwf.int/products/forecasts/d/charts/seasonal/forecast/seasonal_rang

e_forecast/

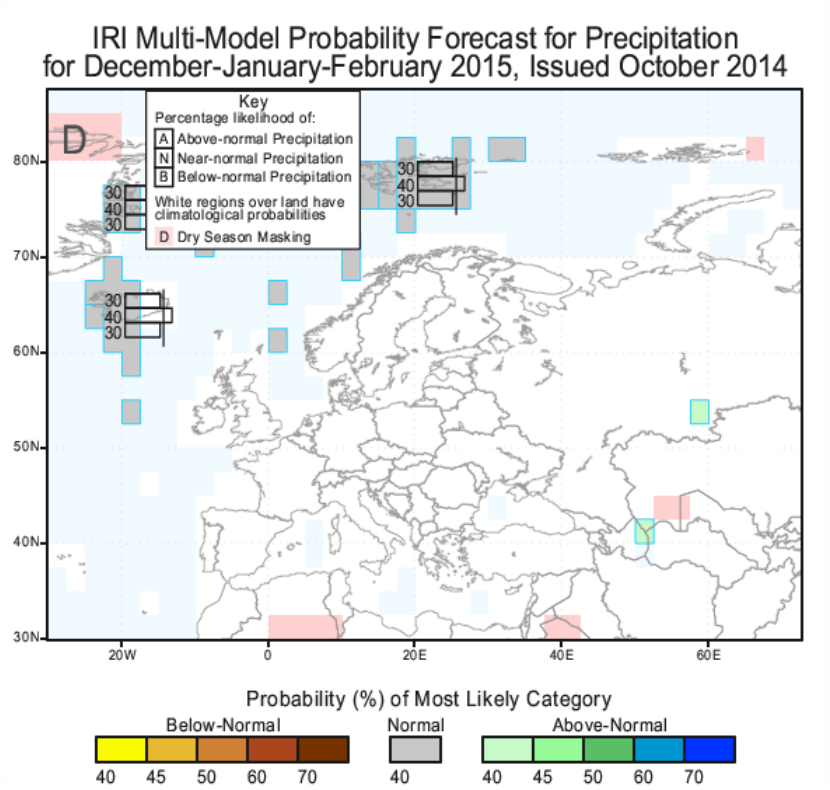

Figure 7. IRI seasonal forecast for winter 2014/15 based on the October 2014 run for precipitation probability.
Source:http://iri.columbia.edu/our-expertise/climate/forecasts/seasonal-climate-forecasts

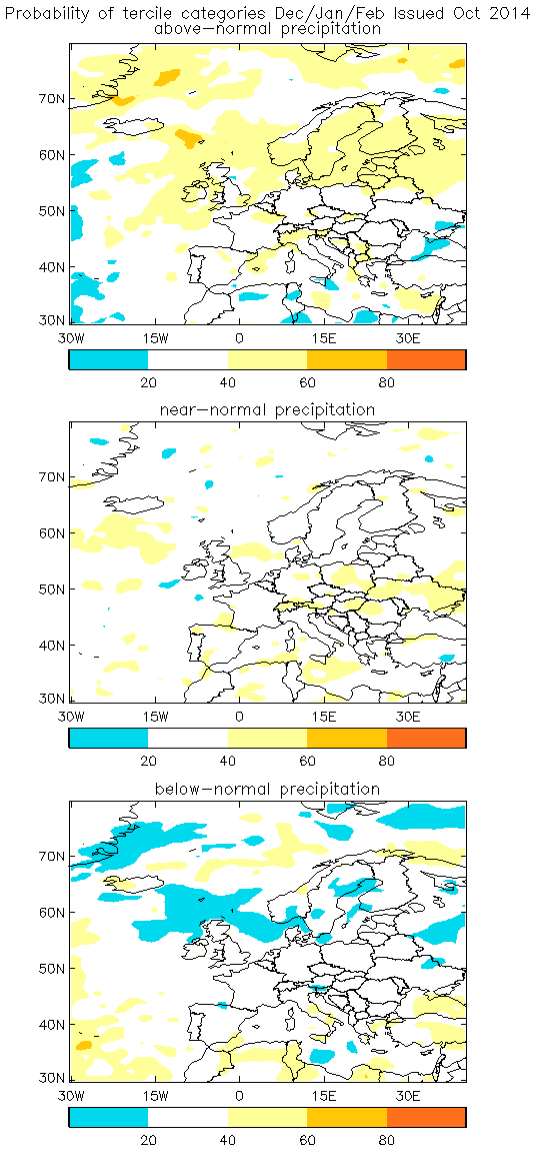

Figure 8. UK Met Office seasonal forecast for winter 2014/5 of probability for mean precipitation, based on the October 2014 run.
Source: http://www.metoffice.gov.uk/research/climate/seasonal-to-decadal/gpc-outlooks/glob-seas-prob