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VERIFICATION
of the SEECOF-14 WINTER 2015-2016
CLIMATE OUTLOOK FOR GREECE

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1. TEMPERATURE

1.1 Analysis of the 2015-2016 winter Temperature Anomalies for Greece

For the 2015-2016 winter period, the **analysis of mean Temperature** from representative Weather Stations in Greece showed that:

(a) mean Temperature Anomalies (Figure 1)

- (i) compared to the 1971-2000 normal values, the whole country experienced **positive anomalies**.
- (ii) the largest differences (> 2 °C) were detected at the northern part of the country.

(b) mean Temperature Terciles (Figure 2)

The tercile analysis showed that above-average temperature conditions prevailed during 2015-2016 winter in Greece.

The greatest contribution to this extreme was during February 2016 (more analytically at Section 3 - Significant Climate Events).

(Note: the range of the borders of the middle tercile is not wide enough, thus the tercile categories are not clearly distinguished.)



Figure 1. Mean Temperature anomalies ($^{\circ}\text{C}$) of the 2015-2016 winter in Greece (compared to the 1971-2000 climatology).



Figure 2. Mean Temperature terciles of the 2015-2016 winter in Greece (compared to the 1971-2000 climatology).

1.2 Verification of the SEECOF-14 2015-2016 winter Temperature outlook for Greece

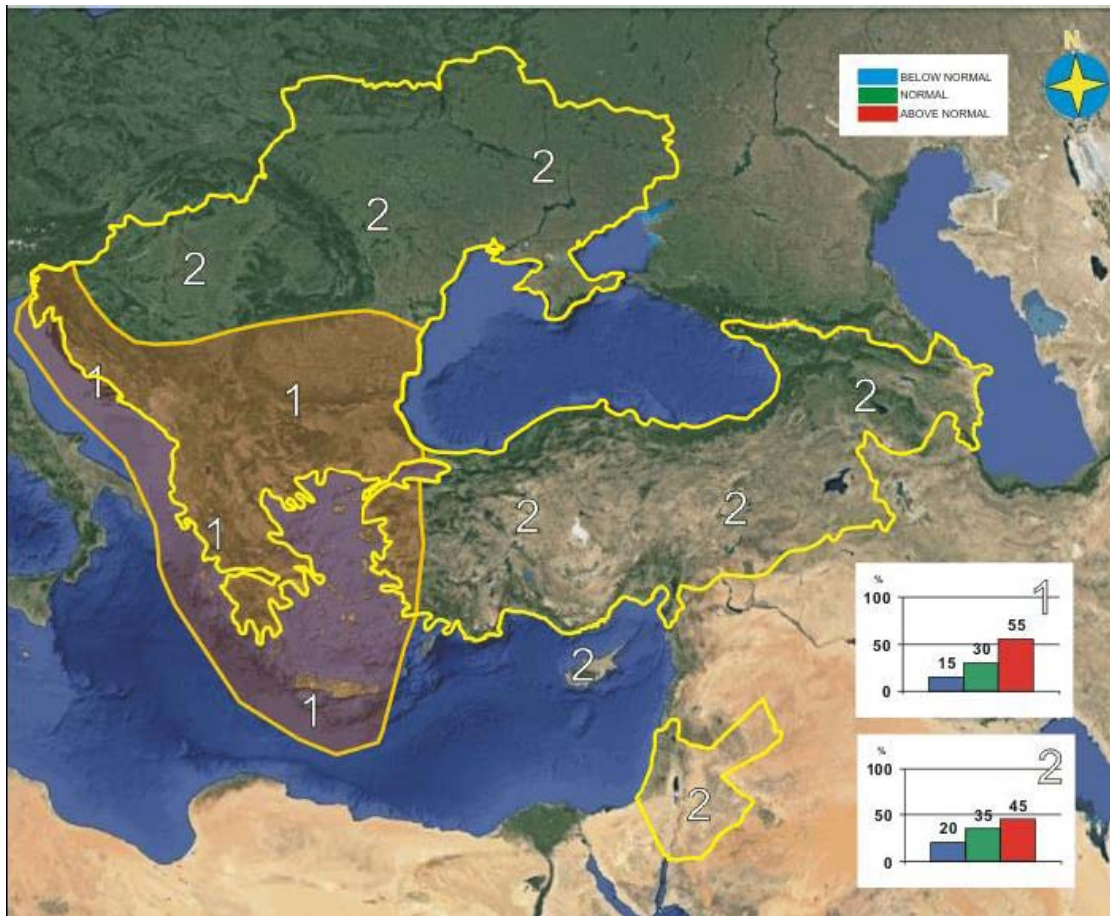


Figure 3. Graphical presentation of the 2015-2016 winter temperature outlook.

According to the SEECOF's outlook for the 2015-2016 winter mean Temperature (Figure 3): the entire Greek territory is in the SEECOF's zones 1, where the positive temperature anomalies are favored.

Verifying the SEECOF's temperature outlook (although this is relative to the 1981-2010 normals):

since that above-average temperature conditions prevailed in Greece, the SEECOF's prediction can be considered as successful.

2. PRECIPITATION

2.1 Analysis of the 2015-2016 winter precipitation anomalies for Greece

For the 2015-2016 winter period, the **analysis of Precipitation** from representative Weather Stations in Greece showed that:

(a) Precipitation Anomalies (Figure 4)

- (i) for almost the whole Greek country the recorded rainfall height was **below the normal values** compared to the 1971-2000 climatology.
- (ii) only at the northeast region of the country some places received precipitation amount equal to or slightly above normals.

(b) Precipitation Terciles (Figure 5)

The tercile analysis showed that below-average rainfall conditions ($\approx 85\%$) prevailed in Greece during the 2015-2016 winter.

It should be mentioned that the greatest contribution to this extreme was during December 2015 (details in the Section 3 - Significant Climate Events).

(Note: the range of the borders of the middle tercile is not wide enough, thus the tercile categories are not clearly distinguished.)

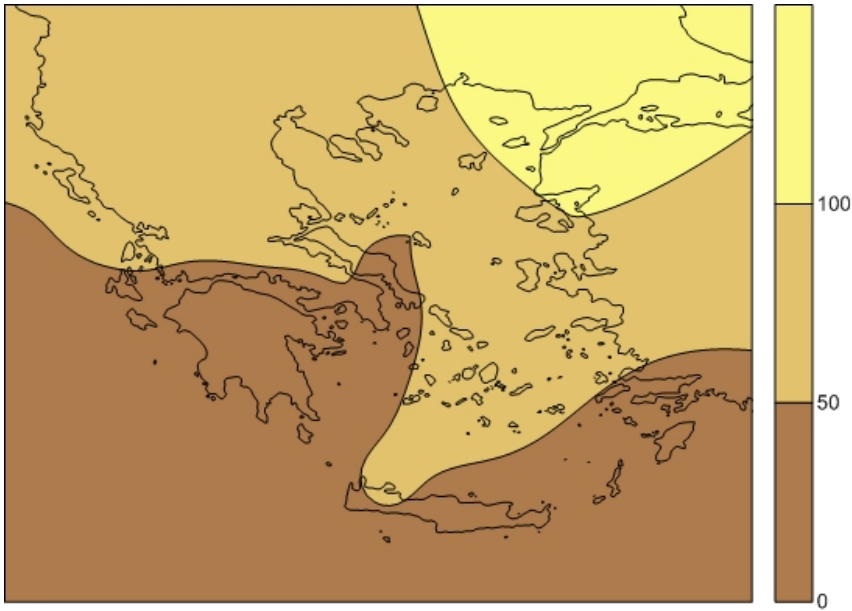


Figure 4. Precipitation anomalies (%) for 2015-2016 winter in Greece (compared to the 1971-2000 climatology).

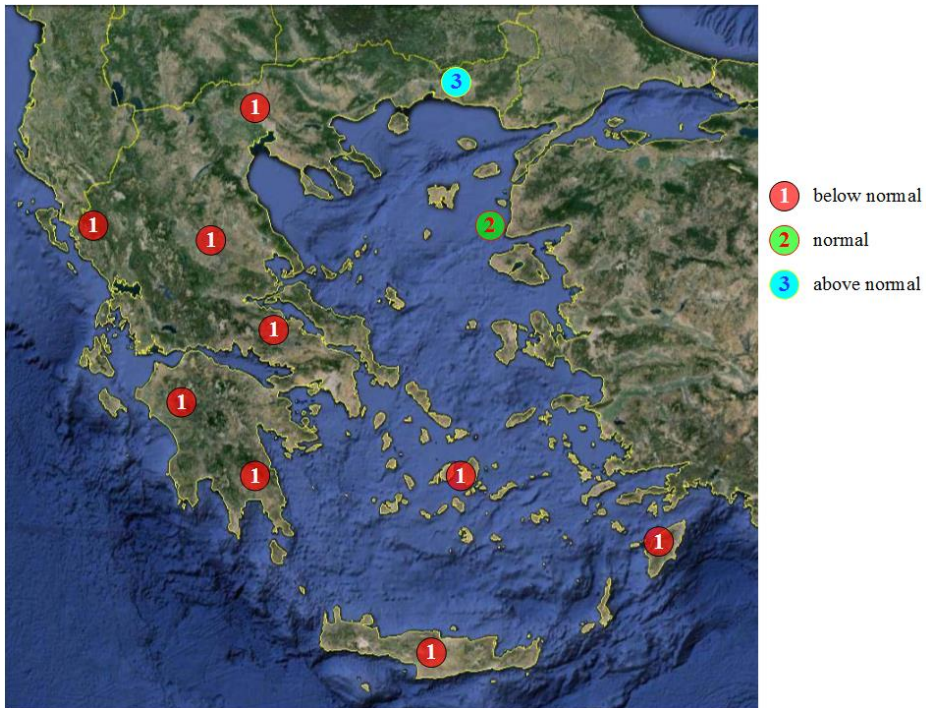


Figure 5. Precipitation terciles for 2015-2016 winter in Greece (compared to the 1971-2000 climatology).

2.2 Verification of the SEECOF-14 2015-2016 winter precipitation outlook for Greece

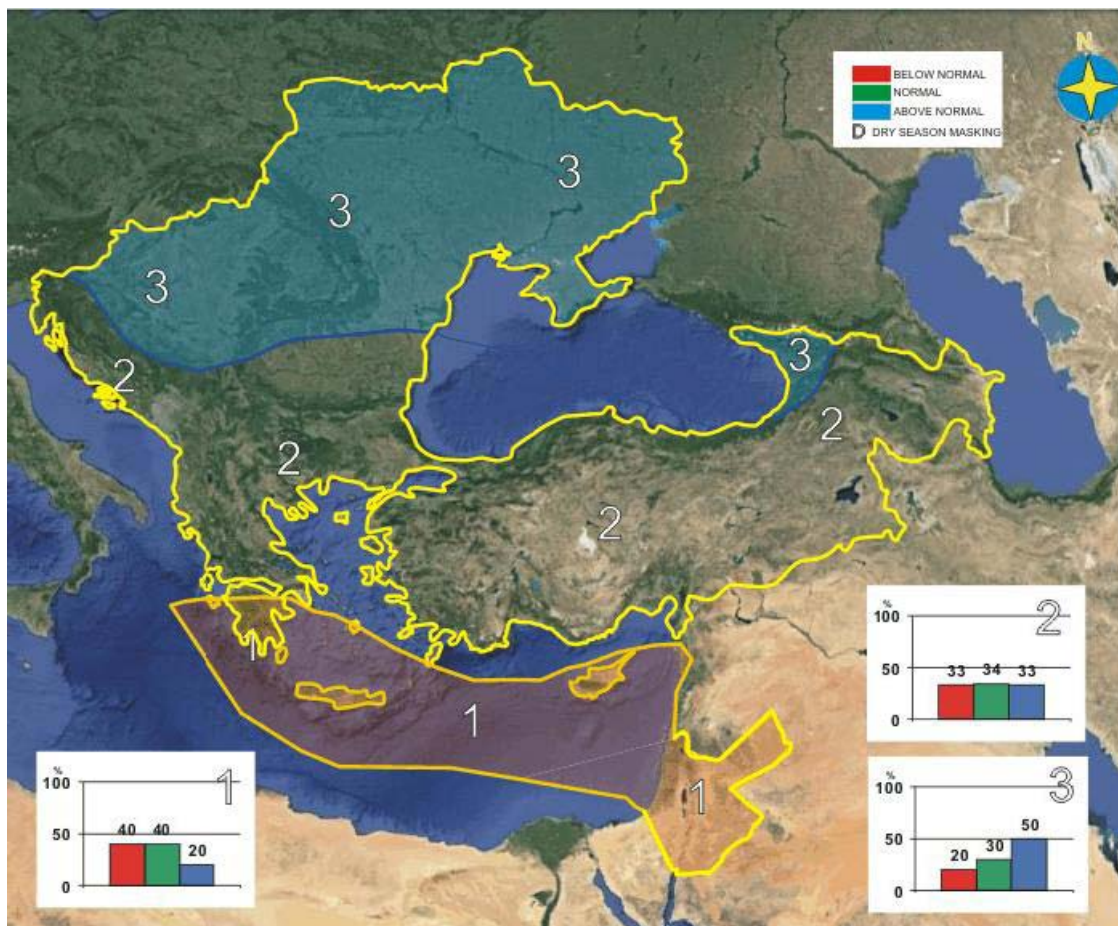


Figure 6. Graphical presentation of the 2015-2016 winter precipitation outlook.

According to the SEECOF-14 outlook for the 2015-2016 winter precipitation (Figure 6):

- (i) the southern part of Greece (Peloponnese and the majority of the islands of the South Aegean Sea) is in the SEECOF-14's zone 1, where below normal precipitation is favored.
- (ii) in the rest area of Greece, the signal is not clear and the probabilities for below-, near-, or above- average conditions are approximately equal.

Verifying the SEECOF-14 precipitation outlook (although this is relative to the 1981-2010 normals):

it cannot be clearly expressed if the prediction is accurate or not, since a large part of the country is in the outlook's region where the uncertainties are high.

3. SIGNIFICANT CLIMATE EVENTS

During the winter 2015-2016 the country experienced some significant climate anomalies.

3.1 CLIMATOLOGY of the month DECEMBER 2015

The month **DECEMBER 2015** presents some interesting statistics. In particular:

- (a) the monthly **precipitation height** was much **below** climatology, while some locations recorded zero precipitation.

Specifically, the monthly rainfall (averaged value of selected Weather Stations) was approximately 10-times below the 1971-2000 normal value (12.51%).

- (b) the **sunshine duration** was **above** the long-term statistics.

Some examples, compared to the 1977-2000 long-term statistics:

WS of Alexandroupolis (WMO-ID: 16627):	209.65 %
WS of Thessaloniki (WMO-ID: 16622):	197.94 %
WS of Kerkira (WMO-ID: 16641):	158.66 %
WS of Larissa (WMO-ID: 16648):	148.45 %

- (c) at the northwest part of Greece, some Weather Stations recorded negative Tmin almost the whole month.

- (d) the country experienced anticyclonic weather conditions during the whole month.

3.2 The “HOT” FEBRUARY 2016

The **February 2016** was **extremely warm** and the mean monthly temperature deviation from the 1971-2000 normals (averaged values of selected Weather Stations) was approximately 3.9° C, while locally this difference exceeded the 5° C.

Some examples, compared to the 1971-2000 normals:

	deviation Tmean (°C)	deviation Tmax (°C)
WS of Alexandroupolis (WMO-ID: 16627)	5.22	4.91
WS of Thessaloniki (WMO-ID: 16622)	4.78	4.66
WS of Larissa (WMO-ID: 16648)	4.58	5.59
WS of Tripolis (WMO-ID: 16710)	4.29	5.99
WS of Kerkira (WMO-ID: 16641)	3.78	3.05
WS of Heraklion (WMO-ID: 16754)	3.61	3.97
WS of Elefsina (WMO-ID: 16718)	3.57	5.12
WS of Rhodes (WMO-ID: 16749)	3.08	3.13

It is interesting to note that the temperature values of the February 2016 climatologically correspond to these of the last 10-day-period of March, while in some islands this extreme was like the first days of April.

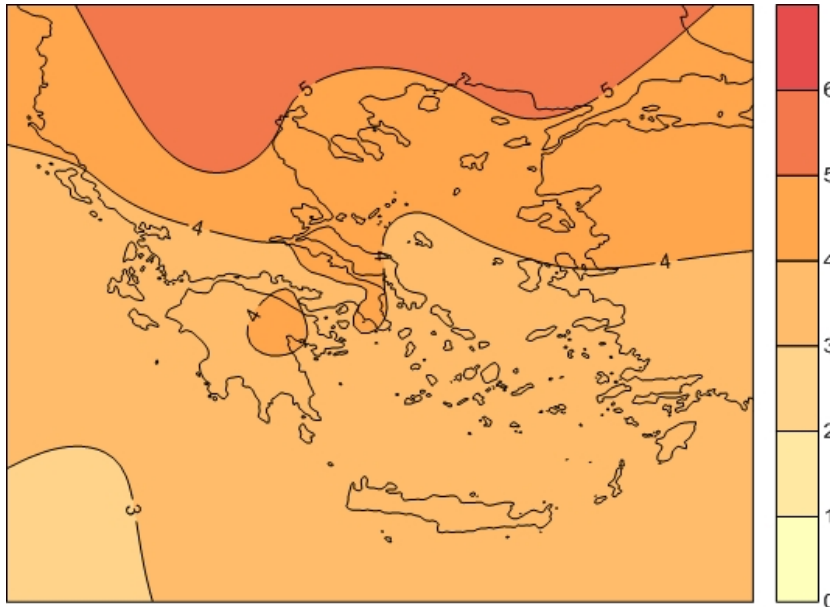


Figure 8. Mean Temperature anomalies (°C) for the 2016 February in Greece (compared to the 1971-2000 climatology).

Also, the two warm spell periods during February 2016 (15-18, and 23 February 2016) **set some new daily maximum Temperature records**. It is worth mentioning that during February 2016 in several Weather Stations the daily Tmax exceeded more than once the previous record.

Some selected examples, where the difference from the previous Tmax record is greater than 1° C:

WS of Kastoria (WMO-ID: 16614) on 23 FEB 2016: Tmax=24.7 °C
 (2nd in rank 23.3 °C, on 18 FEB 2014, reference period: 1981-2015).
 (FEB monthly average Tmax: 8.04 °C, reference period 1981-2000)

WS of Mytilini (WMO-ID: 16667) on 16 FEB 2016: Tmax=26.2 °C
 (3rd in rank 22.0 °C, on 27 FEB 1958, reference period: 1955-2015).
 (FEB monthly average Tmax: 12.34 °C, reference period 1971-2000)

WS of Chios (WMO-ID: 16706) on 18 FEB 2016: Tmax=23.2 °C
 (3rd in rank 22.0 °C, on 24 FEB 1977, reference period: 1975-2015).
 (FEB monthly average Tmax: 12.78 °C, reference period 1975-2000)

WS of Zakynthos (WMO-ID: 16719) on 16 FEB 2016: Tmax=22.8 °C
 (3rd in rank 20.6 °C, on 14 FEB 1998, reference period: 1983-2015).
 (FEB monthly average Tmax: 14.34 °C, reference period 1983-2000)

- WS of Kalamata (WMO-ID: 16726) on 17 FEB 2016: Tmax=26.0 °C
(2nd in rank 23.8 °C, on 19 FEB 1960, reference period: 1956-2015).
(FEB monthly average Tmax: 14.93 °C, reference period 1971-2000)
- WS of Kos (WMO-ID: 16742) on 16 FEB 2016: Tmax=24.6 °C
(4th in rank 20.8 °C, on 19 FEB 2010, reference period: 1982-2015).
(FEB monthly average Tmax: 13.39 °C, reference period 1982-2000)
- WS of Tymbaki (WMO-ID: 16759) on 23 FEB 2016: Tmax=27.0 °C
(2nd in rank 26.0 °C, on 19 FEB 1960, reference period: 1959-2015).
(FEB monthly average Tmax: 15.71 °C, reference period 1971-2000)