## Annex

Country:\_Georgia Institute:\_National Environmental\_Agency (NEA) Name: Khatuna Kokosadze E-mail: kokosadze.k@gmail.com

# VERIFICATION OF THE SEECOF-28 WINTER 2022/2023 CLIMATE OUTLOOK FOR THE TERRITORY OF GEORGIA

### 1. SEECOF-28 Climate outlook for the 2022/2023 winter season:

**Temperature**: According to the SEECOF-28 consensus, the statement temperature was expected to be near or above normal for all over the country. Verification showed that the winter period in the country temperature was above and near the norm, so the outlook for Georgia was correct.



Figure 1. Graphical presentation of the 2022/2023 winter temperature outlook

### 2. Analysis of the 2021/2022 winter season:

## winter temperatures (reference period 1981-2010)

In winter mean seasonal temperature was near the normal and above the normal by  $1^{0}$ C in the country, Exceptions of several stations where the temperature was by  $2^{0}$ C above the norm.

In winter season December and January were warmer than February, especially in west Georgia.

In December and January air temperature was near the normal and above the normal by 1-2°C, except Ambrolauri (mountain) where temperature was above norm by 4 in December and 3 in January.

February was the coldest period in season, in the most territory of west Georgia  $\alpha$  air temperature was below the norm by 1°C and near the norm in the most territory of east Georgia.

#### WINTER 2022/2023

#### TEMPERATURE

| Name           | Obs | DECEMBER | JANUARY | FEBRUARY | DJF_Obs    | Dev | DECEMBER | JANUARY | FEBRUARY | DJF Dev |
|----------------|-----|----------|---------|----------|------------|-----|----------|---------|----------|---------|
|                |     |          |         | WES      | Г GEORGI   | A   |          |         |          | -       |
| Poti           | Obs | 10.5     | 9.2     | 6.9      | 8.8        | Dev | 1.7      | 2.3     | -1.1     | 1.0     |
| Qobuleti       | Obs | 10.1     | 7.9     | 6.3      | 8.1        | Dev | 2.1      | 1.5     | -0.7     | 1.0     |
| Zugdidi        | Obs | 9.3      | 8.6     | 6.1      | 8.0        | Dev | 1.4      | 2.8     | -1.0     | 1.1     |
| Qutaisi        | Obs | 10.1     | 8.4     | 5.4      | 7.9        | Dev | 1.8      | 2.1     | -1.9     | 0.7     |
| Zestaphoni     | Obs | 7.7      | 6.7     | 3.9      | 6.1        | Dev | 0.5      | 1.6     | -2.3     | -0.1    |
| Sachkhere      | Obs | 5.7      | 4.6     | 2.6      | 4.3        | Dev | 2.0      | 2.5     | -1.2     | 1.1     |
| Ambrolauri     | Obs | 6.5      | 4.4     | 2.1      | 4.3        | Dev | 4.1      | 3.7     | -0.9     | 2.3     |
| Mta-Sabueti    | Obs | -0.5     | -2.3    | -3.2     | -2.0       | Dev | 0.1      | 0.2     | -1.3     | -0.4    |
|                |     | I        |         | EA       | ST GEORGIA |     |          |         |          |         |
| Khashuri       | Obs | 2.7      | 1.2     | 1.8      | 1.9        | Dev | 1.4      | 1.4     | 0.5      | 1.1     |
| Gori           | Obs | 3.4      | 2.0     | 2.6      | 2.7        | Dev | 1.5      | 1.4     | 0.4      | 1.1     |
| Tbilisi        | Obs | 4.7      | 3.5     | 4.8      | 4.3        | Dev | 0.3      | 0.3     | 0.3      | 0.3     |
| Bolnisi        | Obs | 3.1      | 2.5     | 3.9      | 3.1        | Dev | -0.7     | 0.0     | 0.2      | -0.2    |
| Telavi         | Obs | 3.0      | 2.0     | 2.7      | 2.5        | Dev | -0.9     | -0.2    | -0.9     | -0.6    |
| Dedoplistskaro | Obs | 2.1      | 0.5     | 0.9      | 1.1        | Dev | -0.7     | -0.3    | -1.1     | -0.7    |
| Sagarejo       | Obs | 2.6      | 2.0     | 3.2      | 2.6        | Dev | -1.1     | -0.1    | 0.2      | -0.3    |
| Pasanauri      | Obs | 1.6      | -0.2    | -0.8     | 0.2        | Dev | 1.9      | 2.0     | -0.5     | 1.2     |
| Tianeti        | Obs | 0.6      | -1.7    | -2.8     | -1.3       | Dev | 1.1      | 0.7     | -1.9     | 0.0     |
| Borjomi        | Obs | 3.1      | 0.6     | 2.1      | 1.9        | Dev | 1.7      | 0.4     | 0.4      | 0.8     |
| Akhaltsikhe    | Obs | 2.2      | -1.1    | -0.8     | 0.1        | Dev | 2.5      | 1.1     | -0.8     | 0.9     |
| Tsalka         | Obs | -0.5     | -2.8    | -2.9     | -2.0       | Dev | 1.1      | 0.7     | -0.6     | 0.4     |
| Akhalqalaqi    | Obs | 0.2      | -3.5    | -5.3     | -2.9       | Dev | 4.1      | 3.2     | 0.1      | 2.5     |

**Precipitation**: According to the SEECOF-28 outlook for winter 2022/2023, precipitation was below normal for Black Sea coast and no clear signal for the rest territory of Georgia. Climatological monitoring showed that Precipitation was near the norm in almost the entire western part of Georgia, including the Black Sea coast and In the east part of the country it was below and near normal, so the outlook for Georgia was incorrect.

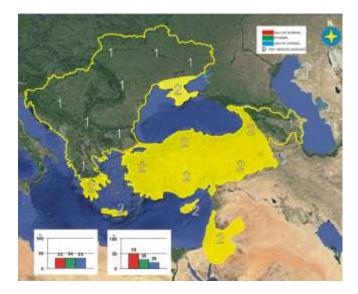


Figure 2. Graphical presentation of the 2022/2023 winter precipitation outlook

## 2. Analysis of the 2022/2023 winter season:

# Winter Precipitation (reference period 1981-2010)

The winter 2022/2023 precipitation was near the norm almost all over the west part of Georgia and In the east part of the country it was below and near normal.

In December and January precipitation was below the norm almost all over the country.

In February precipitation was above the norm for all over west Georgia, Shida Kartli and in the mountainous regions of Eastern Georgia, on the rest part of the country it was below and near the norm.

#### WINTER 2021/2022

#### PRECIPITATION

|                |     | DECEMBER | JANUAR | FEBRUAR | DJF_Obs | Dev | DECEMBER | JANUAR | FEBRUAR | DJF  |
|----------------|-----|----------|--------|---------|---------|-----|----------|--------|---------|------|
| Name           | Obs |          |        |         |         |     |          |        |         | Dev  |
| WEST GEORGIA   |     |          |        |         |         |     |          |        |         |      |
| Poti           | Obs | 168      | 26     | 251     | 148     | Dev | 108%     | 17%    | 205%    | 110% |
| Qobuleti       | Obs | 218      | 128    | 347     | 231     | Dev | 92%      | 60%    | 197%    | 116% |
| Zugdidi        | Obs | 64       | 15     | 173     | 84      | Dev | 45%      | 10%    | 129%    | 61%  |
| Qutaisi        | Obs | 58       | 44     | 251     | 118     | Dev | 38%      | 26%    | 215%    | 93%  |
| Zestaphoni     | Obs | 76       | 98     | 333     | 169     | Dev | 56%      | 62%    | 267%    | 128% |
| Sachkhere      | Obs | 25       | 34     | 141     | 67      | Dev | 29%      | 41%    | 207%    | 92%  |
| Ambrolauri     | Obs | 32       | 34     | 171     | 79      | Dev | 32%      | 35%    | 272%    | 113% |
| Mta-Sabueti    | Obs | 76       | 64     | 179     | 107     | Dev | 59%      | 42%    | 144%    | 82%  |
|                |     |          | L      | EAST (  | GEORGIA |     | •        |        |         |      |
| Khashuri       | Obs | 25       | 20     | 87      | 44      | Dev | 46%      | 32%    | 213%    | 97%  |
| Gori           | Obs | 20       | 15     | 69      | 34      | Dev | 58%      | 45%    | 243%    | 115% |
| Tbilisi        | Obs | 19       | 12     | 13      | 14      | Dev | 86%      | 76%    | 70%     | 77%  |
| Bolnisi        | Obs | 41       | 10     | 12      | 21      | Dev | 195%     | 57%    | 49%     | 101% |
| Telavi         | Obs | 18       | 12     | 28      | 19      | Dev | 60%      | 53%    | 99%     | 71%  |
| Dedoplistskaro | Obs | 35       | 29     | 41      | 35      | Dev | 154%     | 126%   | 144%    | 141% |
| Sagarejo       | Obs | 33       | 21     | 20      | 25      | Dev | 101%     | 84%    | 63%     | 83%  |
| Pasanauri      | Obs | 7        | 2      | 42      | 17      | Dev | 12%      | 5%     | 98%     | 38%  |
| Tianeti        | Obs | 13       | 17     | 60      | 30      | Dev | 39%      | 64%    | 203%    | 102% |
| Borjomi        | Obs | 16       | 11     | 57      | 28      | Dev | 40%      | 27%    | 163%    | 76%  |
| Akhaltsikhe    | Obs | 17       | 9      | 38      | 21      | Dev | 63%      | 39%    | 154%    | 86%  |
| Tsalka         | Obs | 12       | 10     | 14      | 12      | Dev | 50%      | 58%    | 59%     | 56%  |

## **3.** Verification of the SEECOF-28 climate outlook for the 2022/2023 winter season:

| Country | Seasonal tempera         | ture (DJF)                          | Seasonal precipitation (DJF) |                                     |  |
|---------|--------------------------|-------------------------------------|------------------------------|-------------------------------------|--|
|         | Observed                 | SEECOF-28<br>climate<br>outlook for | Observed                     | SEECOF-28<br>climate<br>outlook for |  |
|         |                          | temperature                         |                              | precipitation                       |  |
| Georgia | Above and Near<br>Normal | Above and Near<br>Normal            | Near Normal or<br>Below      | Below and<br>No Signal              |  |