STATE HYDROMETEOROLOGICAL SERVICE

## March 23 - World Meteorological Day

World Meteorological Day is celebrated every year to commemorate the entry into force on March 23, 1950 of the Convention of the World Meteorological Organization (WMO) and the significant contribution that national hydrometeorological services make to the safety and well-being of society.

This year's World Meteorological Day theme proposed by WMO is "Early Warning and Early Action", which highlights the vital importance of hydrometeorological and climate information for disaster risk reduction.

As a result of climate change, extreme weather and hydrological events are becoming more frequent and intense in many parts of the world. More people are becoming vulnerable to multiple hazards that arise from population growth, urbanization and environmental degradation.

Extreme weather events can be detected and predicted in advance, and measures can be taken to save the most valuable thing - human lives. For this purpose it is necessary to use early warning and response systems.

Between 1970 and 2021, half of all disasters in the world were disasters caused by weather, climate and water events. The frequency of disasters is growing from year to year, and if nothing is done in connection with climate change, this trend will continue.

With climate change, humanity has to be prepared for everything. Droughts come in wet regions, floods – in arid ones. Tornadoes and hurricanes appear where they have never been. An adequate response to such threats is the creation of early warning systems for many dangerous phenomena.

One of the most important factors for predicting natural disasters in advance is timely and publicly available meteorological and climate information. You can make an accurate forecast and be able to react in time only if you have all the necessary information

### Climate change and extreme weather events

According to climate change experts, the number of extreme events is unprecedented on record and will increase as global warming intensifies. With warming, every fraction of a degree matters.

Rising temperatures are causing devastating droughts and causing more frequent and violent hurricanes and floods. Devastating forest fires around the world are also a consequence of climate change.

Since the 1950s, extreme heat events have become more frequent and more intense in most land areas. Temperatures above 40ºC, and even 50ºC, are becoming more frequent in many parts of the world, posing a serious threat to human health and well-being.

Climate change is also showing up in the water cycle - a warmer atmosphere holds more moisture. For this reason, the frequency and intensity of heavy rainfall has increased since the

1950s, and this trend is expected to continue. Every 1°C of global warming is projected to increase extreme daily precipitation.

In the Republic of Moldova, as well as throughout the world, there is a tendency to increase the number of natural hazards, which lead to an increase in material losses, and in many cases to human casualties.

Extreme heat (maximum air temperature ≥40°C) on the territory of Moldova was observed only in the last 20 years - 2000, 2002, 2007 and 2012. The absolute maximum air temperature was 42.4°C (August 7, 2012, Falesti MS).

Due to the high thermal regime and the lack of precipitation, drought during the growing season over the past 30 years has been observed 2-3 times more often than during the entire observation period.

During this period, droughts become more intense and cover almost the entire territory of the country. The lowest yields of winter wheat were obtained in 1994, 1996, 1999, 2000, 2003, 2007, 2012 and 2020. According to international experts, the damage from the 2007 summer drought in Moldova amounted to about one billion US dollars.

At the same time, the territory of Moldova also belongs to a rain-prone area. The most indicative in terms of increasing the risk of local floods is the trend of changes in the daily maximum of precipitation, as well as the number of heavy and dangerous showers. Compared to the middle of the 20th century, the values of the daily maximum for the territory increased by 25 mm.


**Chisinau, August 2005**

Heavy showers (≥30 mm for ≤1 hours) and heavy rainfall (≥50 mm for ≤12 hours) are possible annually in some places. Heavy rainfall (≥120 mm for ≤3 days) is possible on average once every 2 years. The maximum values of dangerous rain showers are:

- *heavy rain showers – 149 mm in 1 hour (23.08.2004, Soroca)*
- *heavy rainfall – 212 mm in 12 hours (July 8, 1948, Chisinau)*
- *heavy rains for a long time – 282 mm for 2 days (18-19.06.1985, Valea-Rusului village, Falesti district).*

Torrential rains cause considerable material damage to the national economy, railways and highways, energy, while also causing floods over large areas. The abundant character of the fallen precipitations conditions the development of the soil erosion. As a result of heavy rainfall, the productive surface of the soil is washed away.

Studies have shown that over the past 60 years of observations, there has been an increase in the number of days with heavy precipitation. Compared to the mid-70s of the last century, their number increased by 2-3 days.

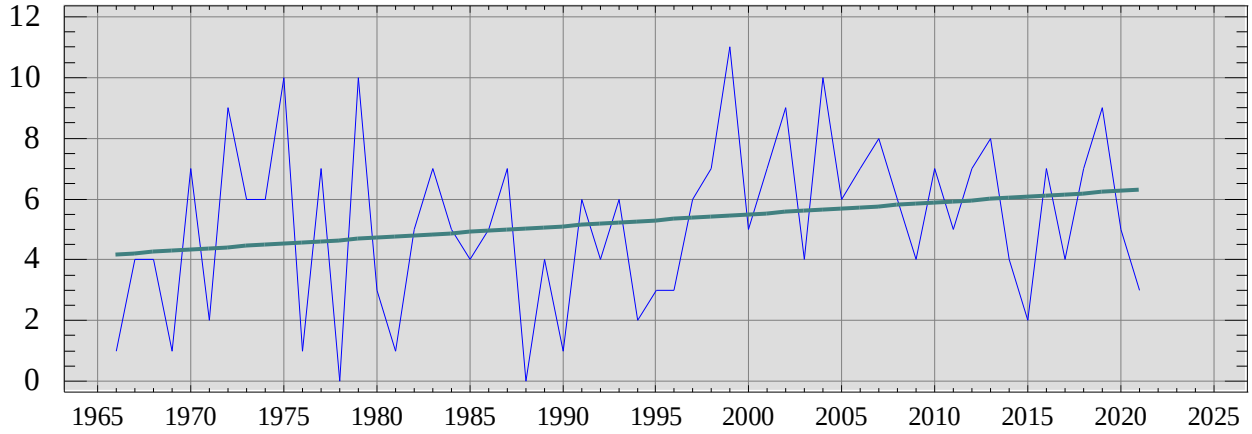



**Fig. 1 Change in the annual number of days with heavy rainfall (≥30 mm/≤1 hour) throughout the territory, 1966-2021**

Heavy rains are often accompanied by hail and squally strengthening of the wind, which further aggravates the damage caused. Strong hail in Moldova is also observed annually and during the warm period there is an average of about 5 days with strong hail. The maximum diameter of hail (70 mm) reached at the Briceni weather station on August 29, 1969.

Huge damage to the national economy is also caused by squalls, tornadoes, and hurricane winds. Strong winds increase the load on wires and high-rise structures. In Moldova, strong winds (more than 25 m/s) are possible almost every year, and tornadoes can occur on average once every 5 years. The last time a tornado was registered on August 28, 2010 on the northwestern outskirts of Leova. The wind uprooted huge trees, ripped off roofs from houses, windows and doors, blowing everything away for a long distance.

## Early Warnings

Improved multi-hazard early warning systems contribute significantly to disaster risk reduction.

One of the main tasks of the State Hydrometeorological Service of Moldova is to ensure the country's hydrometeorological security, protect society from dangerous meteorological phenomena, as well as the consequences of global climate change. Timely provision of reliable information helps to prevent possible damage from the elements.

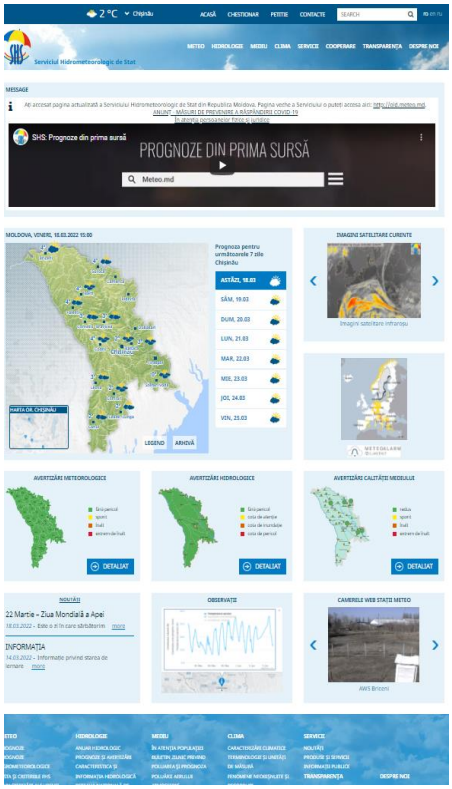
To this end, the Service issues meteorological and hydrological forecasts, as well as warnings of expected adverse hydrometeorological phenomena.

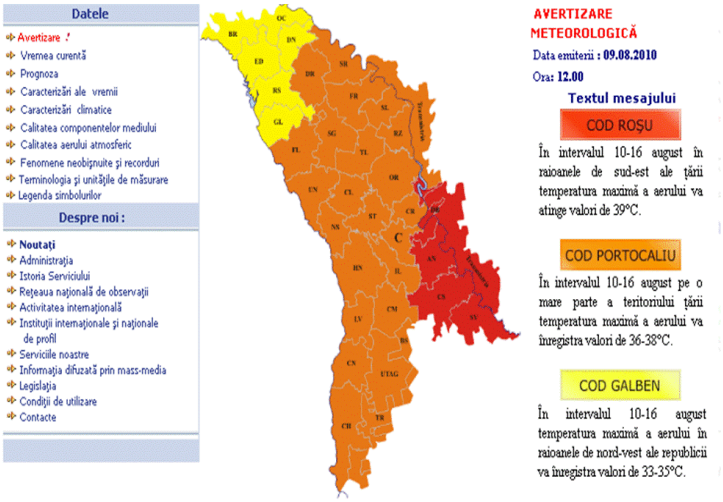
Since 2010, the State Hydrometeorological Service of the Republic of Moldova has begun to use color codes when issuing warnings, which represent gradations of risks of predicted hazardous phenomena.

Information about forecasts and warnings is transmitted to government agencies, economic agents, and also to the population.

For prompt service of meteorological and climate information, in addition to conventional means of communication, the State Hydrometeorological Service of Moldova widely uses the website (www.meteo.md), as well as social networks (Facebook, Instagram and Telegram).

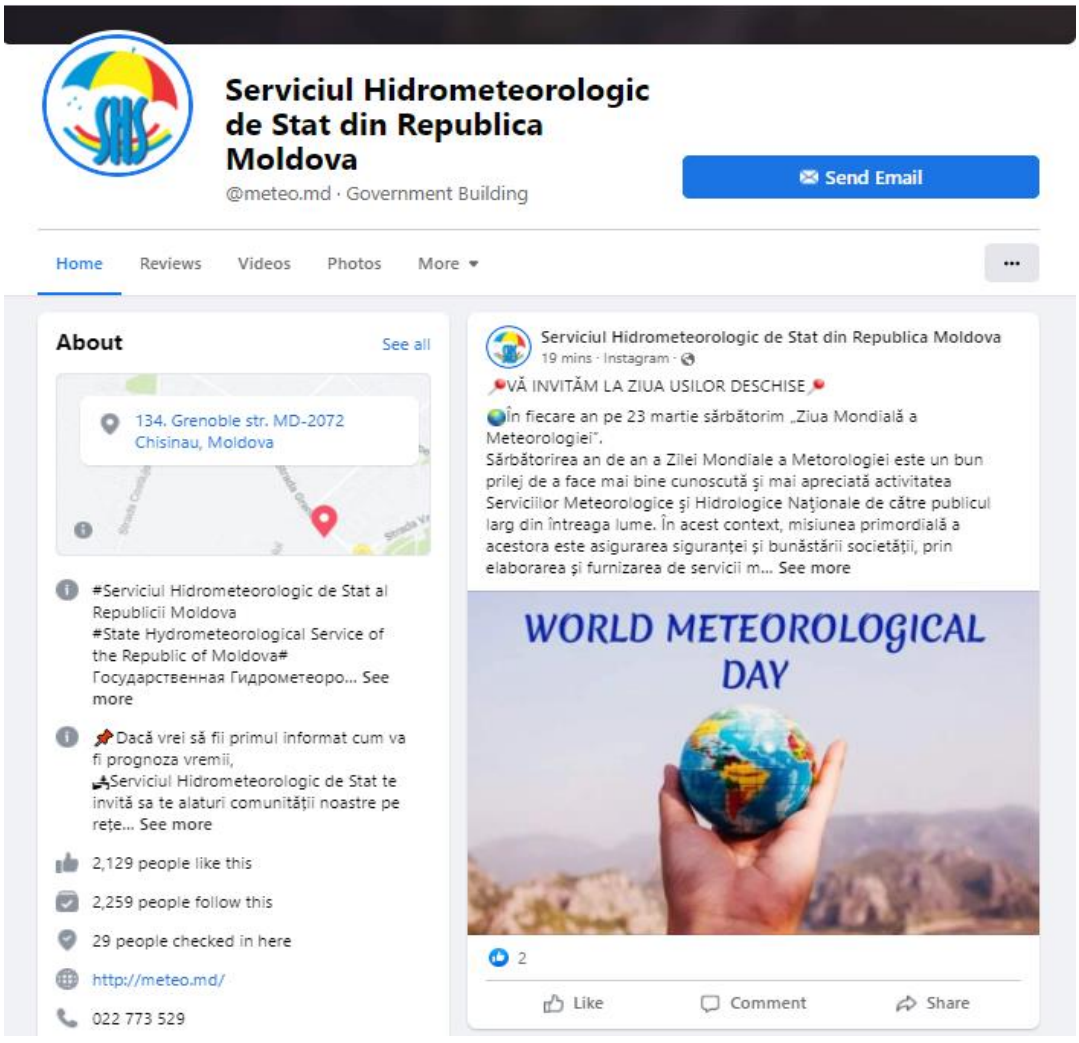
***Official website*: www.meteo.md**




| DESCRIEREA CODURILOR | | | |
|---|---|---|---|
| **VERDE** | **GALBEN** | **PORTOCALIU** | **ROSU** |
| Nu sunt prognozate fenomene meteorologice periculoase. | Condiţiile vremii sunt potenţial periculoase, fenomenele meteorologice prognozate (averse, descărcări electrice, intensificări ale vîntului, temperaturi ridicate sau scăzute, risc de creşteri de debite şi niveluri în râuri şi râuleţe etc.) sunt obişnuite pentru teritoriul ţării, dar temporar pot deveni periculoase pentru anumite activităţi socio-economice. | Condiţiile meteorologice prezintă pericol real, sunt prognozate fenomene periculoase de intensitate mare (vijelie, averse, descărcări electrice, grindină, caniculă, ger, risc de inundaţii etc.), care pot influenţa negativ activităţile socio-economice şi pot cauza daune materiale substanţiale şi victime omeneşti. | Condiţiile vremii sunt foarte periculoase, sunt prognozate fenomene meteorologice de o intensitate extremă (furtună, ploi abundente, grindină, caniculă, ger, risc de inundaţii majore etc.), sunt posibile daune materiale de proporţie şi numeroase victime omeneşti. Există probabilitatea instituirii situaţiei excepţionale pentru regiuni extinse. |

***Official Facebook page:***



Also, warnings about adverse weather conditions are transmitted for publication on the website of the community of European meteorological services Meteoalarm (www.meteoalarm.eu), of which the Service has been a member since 2016.

The problem of climate change and extreme weather is too big for any country to deal with on its own. WMO Member partnerships are key.

The WMO Vision states that “By 2030, we see a world where all nations, especially the most vulnerable, are more resilient to the socioeconomic consequences of extreme weather, climate, water and other environmental events; and underpin their sustainable development through the best possible services, whether over land, at sea or in the air.”