

## WORLD METEOROLOGICAL DAY – 23 MARCH 2018

As every year since 1960, the World Meteorological Organization (WMO) celebrates the World Meteorological Day (WMD) on March 23rd. Once again, in 2018 the WMD is focused on a very interesting and topical theme: ***Weather-ready, climate-smart***. As Petteri Taalas, Secretary-General of the WMO said in his message dedicated to WMD 2018, „if we add to this title the slogan ***water-wise***, we complete the circle of fundamental elements that power sustainable development”.

As always, also for the analysis of 2017 climate’s evolution WMO used datasets derived from more prestigious institutions: US National Oceanic and Atmospheric Administration (NOAA), US National Aeronautics and Space Administration’s Goddard Institute for Space Studies (GISS), UK Met Office’s Hadley Centre and Climatic Research Unit, European Centre for Medium Weather Forecast (ECMWF), Japan Meteorological Agency. According to the WMO’s Press Release published in 18.01.2018, the year 2017 remains on track to be among 3 hottest years on record (in descending order 2016, 2017, 2015). It is important to notice that 2017 was the warmest year *without* a warming El Niño influence, while the temperatures in 2016 and, to an extent, 2015, were boosted by an exceptionally strong El Niño.

The year 2017 continued the chain of the warm years that followed the 1970’s, especially after 2000. From the data published by WMO, resulted that the global average air temperature over land and sea surface in 2017 was about 0.78°C above the average of 14.00°C for the 1961-1990 reference period. As a novelty, it should be noted that, starting with the year 2017, WMO uses the ***1981-2010 period*** instead of the previous 1961-1990 baseline, because the new reference period is more representative for the current climatic conditions. Also, this new reference period allows more consistent reporting of information from satellite and reanalysis systems (some of which do not extend back to 1960) alongside more traditional data sets based on surface-observations. This new 30-year baseline is used by national meteorological and hydrological services to assess the averages and variability of key climate parameters, such as temperature, precipitation and wind, which are important for climate sensitive sectors such as water management, energy, agriculture and health. In this new way of approach, the Global mean temperature for the year 2017 was with  $0.46\pm 0.08^{\circ}\text{C}$  warmer than the 1981-2010 period average (estimated at  $14.31^{\circ}\text{C}$ ). This represents an approximately 1.1°C increase in temperature since the pre-industrial period.

For example, parts of southern Europe, including Italy, North Africa, parts of east and southern Africa and the Asian part of the Russian Federation were record warm and China was the equal warmest. At the same time, the north-western USA and western Canada were cooler than the 1981-2010 average (WMO’s Press Release, 6 November 2017). In Romania, during the year of 2017, positive deviations of the monthly mean temperatures against the multiannual monthly means of 1981-2010 reference period were registered in several months

(especially in December), while the coldest month was January (National Meteorological Administration, [www.meteoromania.ro/clima](http://www.meteoromania.ro/clima)).

On the background of this long-term trend of global warming, the year 2017 has been marked around the world by the increasing of the intensity and frequency of climatic and hydrological risk phenomena. Thus, the North Atlantic Ocean had a very active season for the *tropical cyclones*. For example, can be mentioned the hurricane Harvey (category 4) in August, followed in September by Irma (also category 4) and Maria. Exceptionally *heavy rain*, followed by *flooding* and *landslides* were registered in northern India subcontinent (August), Sierra Leone (August), Peru (March), southern China (late June-early July), western USA (January-February). The *drought* has been present in eastern and southern Africa, in the Mediterranean region (Portugal, Spain, Italy), Korea Peninsula etc. Major *heatwaves* affected South America (in January), eastern Australia (in January and February), southwest Asia (in late May), Spain (in July), southern France, Italy, and Balkan Peninsula (in August). Many times, the heatwaves were followed by significant *wildfires*: Chile, eastern Australia, New Zealand, RSA, Portugal, Spain, France, Italy, Croatia, western USA and Canada. Romania was also affected in 2017 by more severe weather events: *late snowfall and blizzard* in 19-21 of April; *heatwave* in 3-5 of August (red code); *strong storms and wind gusts* in 3 and 17 of September (red code), respectively in 24 and 29-30 of October (red code).

In these conditions, an early warning is a major element of disaster risk reduction. To be effective, the early warning systems need to actively involve the people and communities at risk. As Petteri Taalas, Secretary-General of the WMO, said in his message dedicated to WMD 2018, „WMO has launched an initiative to establish a global and standardized multi-hazard alert system in collaboration with National Meteorological and Hydrological Services worldwide”. Impact-based, multi-hazard early warning systems incorporate communities, political leadership, weather forecasters, disseminators of warnings, media, emergency response authorities, health facilities and recovery plans. By ensuring strong coordination among all relevant stakeholders, they are more effective and cost-efficient than stand-alone, single-hazard systems. All these can be recognized in the slogan *weather-ready*, the first part of the 2018 WMD’s theme.

The actual Global Warming affects almost all socio-economic sectors. It also affects the vital resources such as water, food and energy. It slows or compromises sustainable development in all countries, not just in developing ones. For these reasons, developing climate services and increasing the number of professionals and students trained in meteorology and climatology is an important step in creating climate-smart societies. WMO projects are restructuring science curricula to align with current and future needs of the human society, and developing more effective communication channels so that decision-makers – farmers, health, water and other professionals, politicians – receive the climate services they need (WMO, statement on World Meteorological Day 2018). Thus, the expression *climate-smart* represents the second component of the 2018 WMD’s theme.

To the above, the WMO's statement added the slogan *water-wise*, which refers to more aspects which are in connection with water: the flash floods, the sea level rise, the coastline inundation and erosion, the taint of freshwater with salt, the drinking water resources, the vulnerabilities of urban infrastructures etc.

All the documents dedicated to the WMD 2018 shows the WMO's decision to fully implement of the *United Nations 2030 Agenda for Sustainable Development* and the *Sendai Framework for Disaster Risk Reduction*.

In the end, we would like to greet all the people involved in the activity of meteorology and climatology, and wish them that year 2018 bring many satisfactions in their professional activity, so that they may contribute to achieving the objectives mentioned by WMO in the works dedicated to the World Meteorological Day 2018.

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