

WORLD METEOROLOGICAL DAY - 2021

THE OCEAN, OUR CLIMATE AND WEATHER



The theme of this year's World Meteorological Day: *The ocean, our climate and weather* fits perfectly with the theme of our conference. As mentioned on the WMO website, we cannot have an overview of the functioning of weather and climate systems if we only look at the atmosphere without considering the ocean. The importance of the Ocean lies both in its role as a major driver of weather and climate, its extension on 70% of the Earth's surface, and in the supporting role of the existence of over 40% of the world's population.

The theme proposed by WMO comes to celebrate the role of National Meteorological and Hydrological Services in operational monitoring of the oceans, identifying changes of the ocean's chemical and physical properties, modeling the impact on the Earth-Atmosphere system while also offering a wide variety of marine services including supporting coastal management and Safety of Life at Sea.

The big announcement made by WMO on the occasion of World Meteorological Day is the launch of the United Nations Decade of Ocean Science for Sustainable Development (2021-2030). In this decade, WMO aims to focus on finding innovative and transformative ideas to help understand the strong links between the ocean, climate and weather. The stated goal of this approach is not only a better understanding of the world we live in, including the impact of climate change but also a strengthening of the ability to ensure the safety of human lives, goods and ensure economic viability.

As usual, on this occasion are presented the most important facts related to the topic associated with World Meteorological Day. This year, the main facts associated with the pillars of WMO's activity in this field are, according to the WMO site:

a) How the ocean shapes weather and climate - *Around 90% of the excess energy that accumulates in the earth system due to increasing concentrations of greenhouse gases, goes into the ocean (WMO Provisional State of the Global Climate 2020 Report)*

b) Observing the ocean - *The Copernicus Sentinel-6 Michael Freilich ocean-monitoring satellite was launched at 18:17 (CET) on 21 November 2020 from Vandenberg air force base, California. Its primary mission is high-precision ocean altimetry, providing information about sea surface topography including sea level and significant wave height (Eumetsat, ESA, NASA)*

c) Forecasting climate variability - *There are many other naturally occurring ocean-atmosphere oscillations in the Pacific, Atlantic, and Indian Oceans, that cause climate variability.*

d) The ocean and climate change - *CO₂ reacts with seawater and increases its acidity. It endangers organisms and ecosystem services, including food security, by endangering fisheries and aquaculture. It also affects coastal protection by weakening coral reefs, which shield the coastline, and tourism (WMO Provisional State of the Global Climate 2020 Report)*

e) Ensuring safety at sea and on land - *The Arctic is warming more than twice as rapidly as the global average. Sea ice loss is expected to lead to an increase in maritime traffic. Less ice does not mean less danger because there is a constant and often hidden threat. The consequences of a major accident in Arctic waters would be devastating for the environment. It is important to improve forecasts and warnings of both weather and ice conditions in Polar and marginal regions.*

f) SDGs and other initiatives - *The UN Decade of Ocean Science for Sustainable Development aims to provide the Science We Need for the Ocean We Want. Ocean science can help us to address impacts from weather and climate, climate change, marine environmental emergencies including pollution, ocean acidification, the loss of marine species and degradation of marine and coastal environments (UN Ocean Decade).*

Our hope is that the WMO goals stated with this occasion will be met until the end of the decade. It is our wish to also raise public awareness on the impact of the ocean on our lives.

2021 is about the big picture!

Iulian-Horia HOLOBĂCĂ, PhD Associate Professor