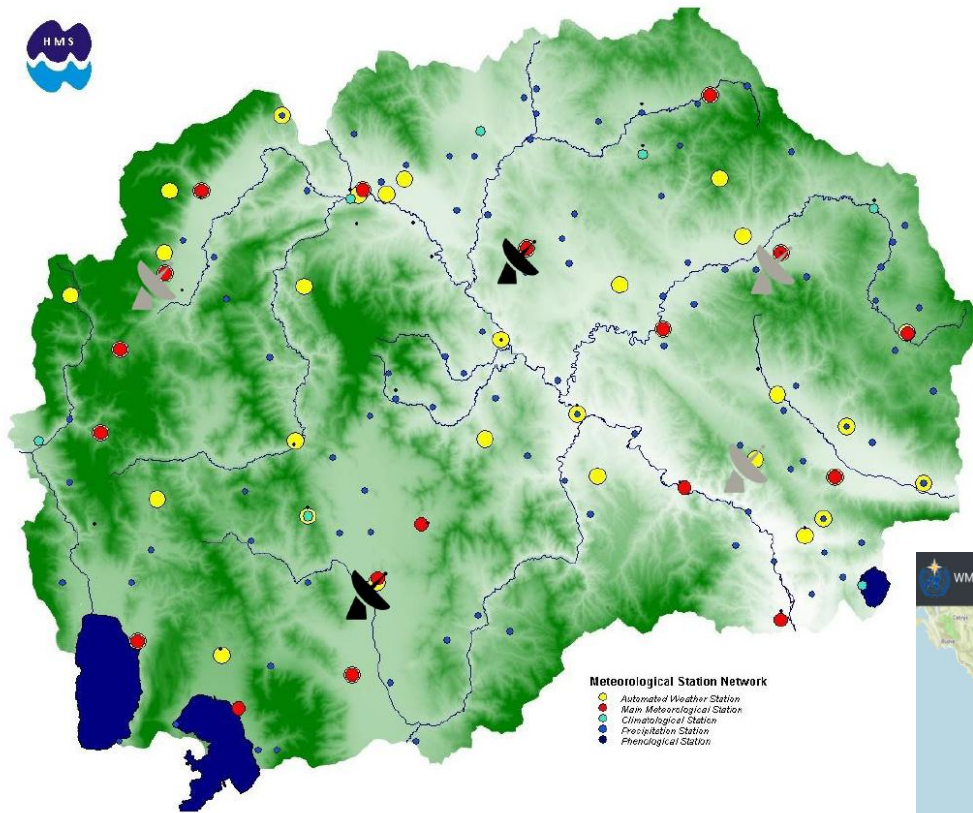


Hydrometeorological Service of Republic of North Macedonia

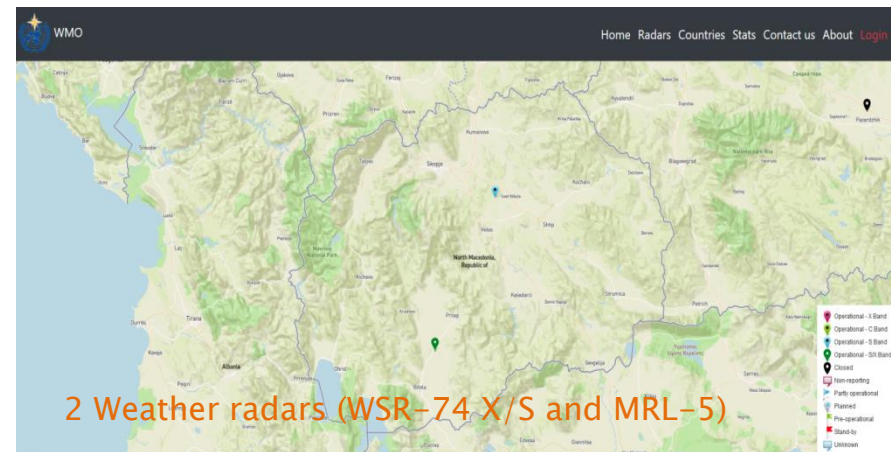
Institutional/Legal Settings

- ▶ Governmental Organization in the Frames of The Ministry For Agriculture, Forestry and Water Economy, with a capacity of an independent legal body
- ▶ Law on Hydrometeorological Activities, Official Gazette No.19 from 1992, amended in 2008,2011,2015)
- ▶ The Director is authorized for international cooperation in meteorology and hydrology (Member country of WMO, Cooperating member country of ECMWF, HMS member of EUMETNET)
- ▶ Total number of employees is 125 (47 with high education)

Meteorological Monitoring Network



- 178 sites: 9 main meteorological, 7 climatological, 24 phenological, 70 precipitation and 68 automated weather stations
- 2 Weather radars

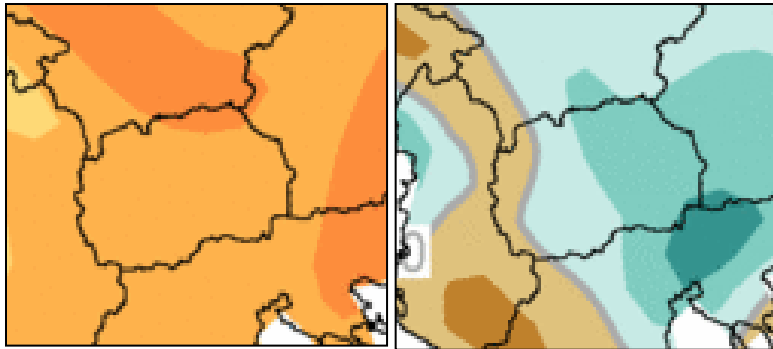


➤ Meteorological Database – CLIDATA

➤ Climate Services –

- Various sectors upon requests, (energy, agriculture, insurance, water economy, tourism, building construction industry, health, trade, legal disputes etc.)

➤ Seasonal Climate Outlooks



Seasonal anomaly of temperature and precipitation for spring 2024

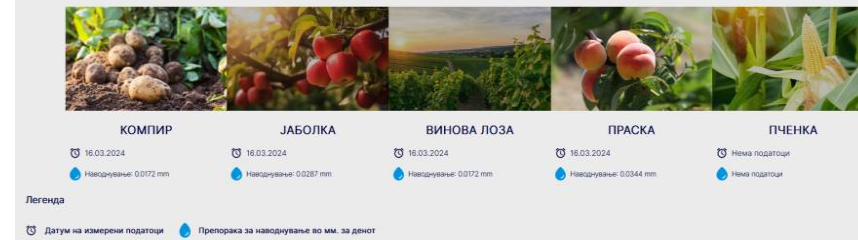
➤ Agrometeorology

Web and mobile application Agrometeo.mk

- 14 agrometeorological stations
- Phenological observations on 24 locations with a mobile phone through the application
- Alarms for: diseases for agricultural crops, frost, drought and irrigation, weather conditions for agro-technical works (spraying)
- Forecast and visualization from the WRF-NMM v3.9.1_e1km model



Евапотранспирација (ЕТс) и препораки за наводнување

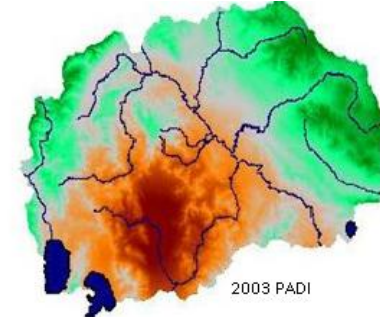
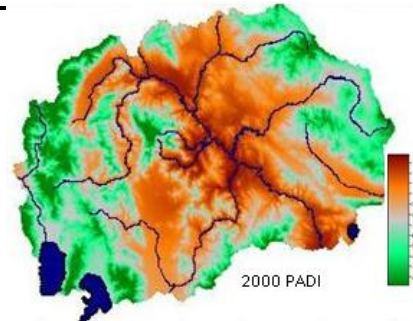


Аларм за болести

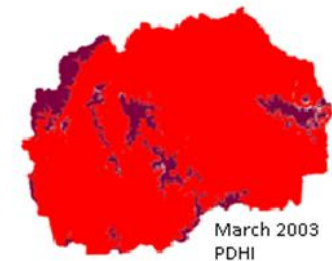


Precipitation normals for period 1981-2010y for some meteorological stations in Republic of Macedonia (mm)

Meteorological station	Skopje	Bitola	Stip	Prilep	Demir Kapija	Strumica	Ohrid	Gevgelija	Kriva Palanka	Lazaro-pole	Berovo	Mavrovo
prec. normal 1981-2010	478.6	619.9	455.1	510.1	554.8	564.4	689.9	678.6	624.7	1060.4	611.1	993.5



Deciles classification	Demir Kapija	Bitola	Lazaro-pole	Mavrovo	Ohrid	Prilep	Skopje*
Much below normal (1 -2 Deciles)	391.8	416.9	784.6	683.5	509.0	361.3	306.9
	449.9	521.8	880.0	769.2			
Below normal (3 -4 Deciles)	499.1	549.3	924.7	817.0			
	540.1	584.9	988.4	905.6			
Near normal (5 -6 Deciles)	559.8	608.4	1034.9	997.3			
	594.7	633.3	1095.5	1077.5			
Above normal (7 -8 Deciles)	636.8	671.7	1153.7	1127.6			
	663.3	708.2	1252.1	1224.4			
Much above normal (9 -10 Deciles)	693.2	788.6	1317.3	1269.6			
	824.4	884.7	1566.5	1695.9			



	Skopje Airport	Lazaropole	Ohrid	Bitola	Prilep	D.Kapija	Gevgelija	Strumica	Stip	K.Palanka	Berovo
	Skopje region	Southwest region		Pelagonija region		Vardar region	Southwest region		Eastern region	Northeast region	Eastern region
1961	EW	SW	SD	ED	MoD	MoD	MID	N	MoD	SW	SD
1962	MW	VW	EW	MW	MW	EW	VW	VW	MW	N	EW
1963	N	EW	CW	SW	VW	SW	N	MW	N	N	VW
1964	MoD	N	SW	N	MW	MID	SW	SW	N	N	N
1965	MID	N	N	ED	N	SD	ED	MoD	N	VW	MID
1966	N	N	MW	N	N	MW	VW	MW	N	MoD	N
1967	N	MID	MID	N	MID	N	N	N	N	MID	MID
1968	N	MID	N	MID	N	N	N	N	N	N	N
1969	MoD	N	N	N	N	N	SW	MID	MoD	SW	MoD
1970	N	VW	N	N	N	MID	MID	MID	N	MoD	MID
1971	N	MID	N	N	N	N	N	N	N	N	N
1972	EW	N	N	MW	SW	N	SW	SW	SW	MW	SW
1973	N	N	N	N	MW	MW	N	N	MW	N	SW
1974	N	N	N	N	N	SW	N	N	EW	N	SW
1975	EW	ED	MoD	MID	N	MID	MID	N	N	EW	N
1976	ED	N	MID	SW	SW	N	VW	MW	SW	N	MW
1977	MID	SD	MID	ED	MoD	ED	MoD	ED	ED	MW	ED
1978	SW	MW	N	N	N	N	N	SW	MoD	SW	SW
1979	N	VW	VW	EW	MW	SW	N	SW	SW	N	SW
1980	VW	N	N	N	MW	MW	MW	EW	SW	SW	VW
1981	MID	VW	MW	EW	EW	VW	N	N	SW	MoD	SW
1982	SW	MID	MID	SW	N	N	EW	N	MID	N	N
1983	N	N	N	MW	SW	EW	SW	VW	VW	ED	MW
1984	N	N	N	MID	MID	MoD	MoD	ED	MoD	N	SD
1985	N	N	N	N	N	MoD	MID	N	N	MoD	N
1986	N	SW	N	N	N	N	N	MoD	N	N	MID
1987	SD	MID	MID	N	MoD	N	SW	N	N	MoD	N
1988	SW	MoD	ED	MoD	CD	N	CD	ED	ED	MID	MoD
1989	SD	MoD	MoD	N	MID	MID	MoD	MoD	N	ED	N
1990	CD	SD	SD	MID	ED	SD	MID	N	ED	N	ED
1991	SW	N	N	SW	MID	N	MID	MID	N	MID	N
1992	MoD	MoD	ED	N	MoD	MoD	MoD	CD	CD	CD	ED
1993	MoD	SD	ED	ED	ED	ED	ED	CD	ED	ED	CD
1994	VW	ED	MoD	N	ED	MID	SW	N	ED	EW	SD
1995	N	SW	N	N	MW	SW	SW	EW	MW	N	MW
1996	MoD	SW	VW	SW	N	N	MW	MW	N	N	SW
1997	N	MoD	MoD	N	MID	N	MID	N	N	N	SD
1998	N	VW	MW	N	N	N	N	SW	N	SW	N
1999	CD	MW	MW	MW	N	N	N	N	N	CD	N
2000	SD	ED	MoD	ED	CD	ED	CD	CD	ED	N	CD
2001	VW	ED	SD	ED	SD	N	SD	MID	MoD	EW	N
2002	MoD	MW	SW	EW	MW	EW	EW	CW	VW	MID	CW
2003	N	N	N	N	N	SW	MW	MW	N	VW	SW
2004	SW	MW	MW	SW	N	N	EW	N	N	SW	N
2005	MID	VW	SW	N	N	N	MoD	N	N	N	SW
2006	N	N	N	SW	MID	SW	VW	N	N	SW	MW
2007	SD	N	N	N	N	SW	MID	N	N	N	N
2008	MW	MoD	MoD	MID	MoD	MID	N	MoD	MID	VW	N
2009	VW	SW	MW	VW	SW	SW	EW	EW	SW	CW	MW
2010		CW	CW	VW	VW	SW	EW	EW	VW	CD	EW
2011	ED	ED	ED	ED	SD	SD	ED	CD	ED	N	SD
2012	N	N	EW	MW	N	N	SW	VW	N	N	EW
2013	EW	SW	N	N	N	MW	SW	EW	N	CW	SW
2014	N	MID	N	EW	EW	EW	CW	CW	CW	VW	CW
2015	N	N	SW	SW	MW	MW	EW	N	VW	MW	EW
2016	MoD	MW	N	SW	N	N	N	N	N	N	SW
2017		MID	N	MID	MID	SW	VW	SW	N		SW

HMS provide historical data and time series for further drought research

SPI 12

Standardization precipitation index-drought category

CD	Catastrophic (Exceptional) Drought
ED	Extreme Drought
SD	Severe Drought
MoD	Moderate Drought
MID	Minor Drought
N	Near Normal
SW	Slightly Wet
MW	Moderately Wet
VW	Very Wet
EW	Extremely Wet
CW	Exceptionally (Catastrophically) Wet

Ongoing Projects

New Weather Forecasting and Early Warning Center

Preparatory phase for a new weather forecasting centre – finished; Construction phase started in October 2024; Future plans for technological updates

UNDP Projects regarding the National Communications and Reports on Climate Change under the UNFCCC

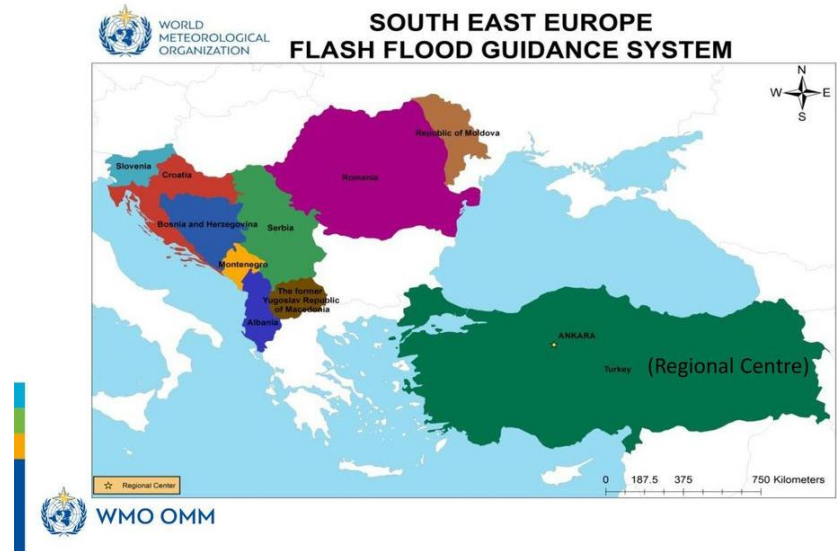
SEE-MHEWS-A

South-East European Multi-Hazard Early Warning Advisory System Phase II (WMO)

Project UNDP - Integrated climate-resilient transboundary flood risk management in the Drin River basin in the Western Balkans

Groundwater Management, Use and Protection Programme in North Macedonia (GWP) Funded by the Government of Switzerland (Swiss Agency for development and cooperation SDC)

South-East Europe Flash Flood Guidance System SEE FFG Project - (WMO)



DROUGHT RELATED PROJECTS

- ▶ **2009-2012 Participation in DMCSEE Establishment Project**
- ▶ **2014 IPA Project “Building Resilience to Disasters in Western Balkan and Turkey”**
- ▶ **2019 UNCCD/Ministry of Environment - National Drought Plan**
- ▶ **2020 Conference “Integrated Drought Management for the Drin Trans-boundary Basin”, (DRINCORDA and GEF-Drin Project), in Tirana**
- ▶ **2020 UNEP - “Achieving Biodiversity Conservation through Creation and Effective Management of Protected Areas and Mainstreaming Biodiversity into Land Use Planning” (Preparation of national erosion and drought sensitivity map, and identification of high-risk zones and their impact to biodiversity)**
- ▶ **March 2022 we expressed interest to WMO for development of a drought project for the riverine countries of the Drin Basin**
- ▶ **January to August 2022: IDMP Drin Basin Project (NOAA funded Activity 3. Decision support for drought, managed by GWP CEE)**
- ▶ **2023 Ministry for agriculture, forestry and water economy– new upgraded web and mobile application agrometeo.mk**
- ▶ **The Republic of North Macedonia, as a candidate country for joining the European Union, has an obligation to assess natural and technical-technological (man-made) risks according to Article 6 Decision No. 1313/2013/EU of the European Parliament and the Council of December 17, 2013, and submitting risk data to the European Commission in accordance with the European Commission's Guidelines for Risk Assessment and Mapping for Disaster Management.**

Thank you!

Aleksandra Stevkov
aleksandra@meteo.gov.mk

Silvana Stevkova
stevkova@meteo.gov.mk

Suzana Alcinova Monevska
smonevska@meteo.gov.mk

HMS North Macedonia