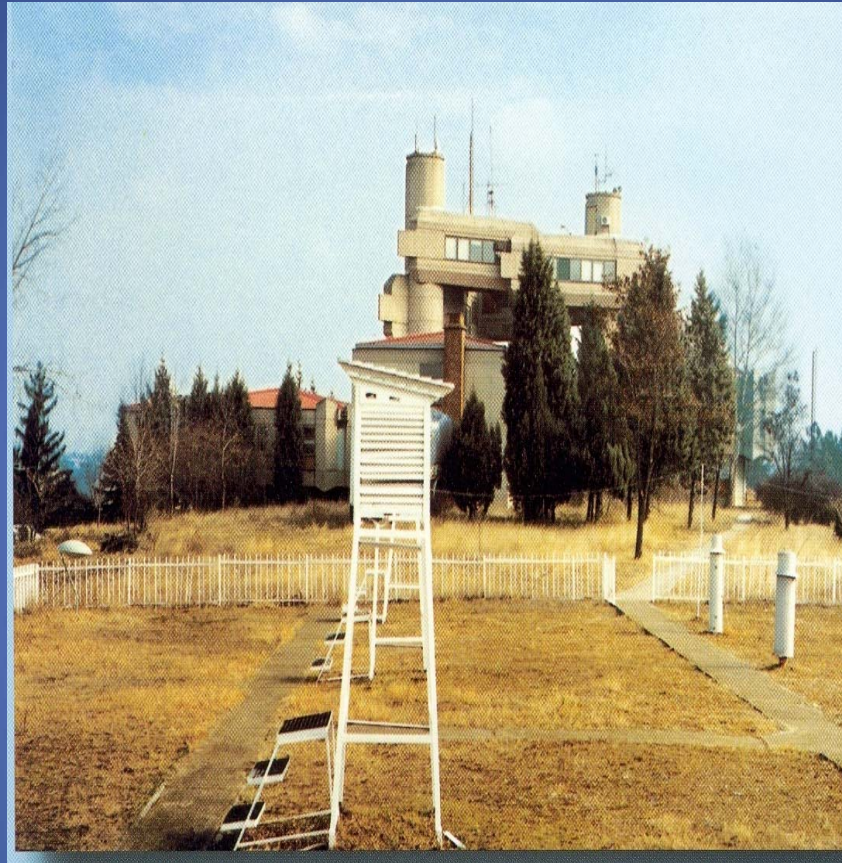


# HYDROMETEOROLOGICAL SERVICE OF REPUBLIC OF MACEDONIA



**WMO**  
**MEDARE**  
initiative





## GEOGRAPHIC PROFILE OF THE COUNTRY

The Republic of Macedonia is situated in the southern Europe, in the central part of Balkan Peninsula, at latitude of approximately 42°50' North and a longitude of 22°00' East. Total surface area of our country is 25,713 km<sup>2</sup>.

FYRMacedonia borders with Bulgaria, Serbia, Albania and Greece.



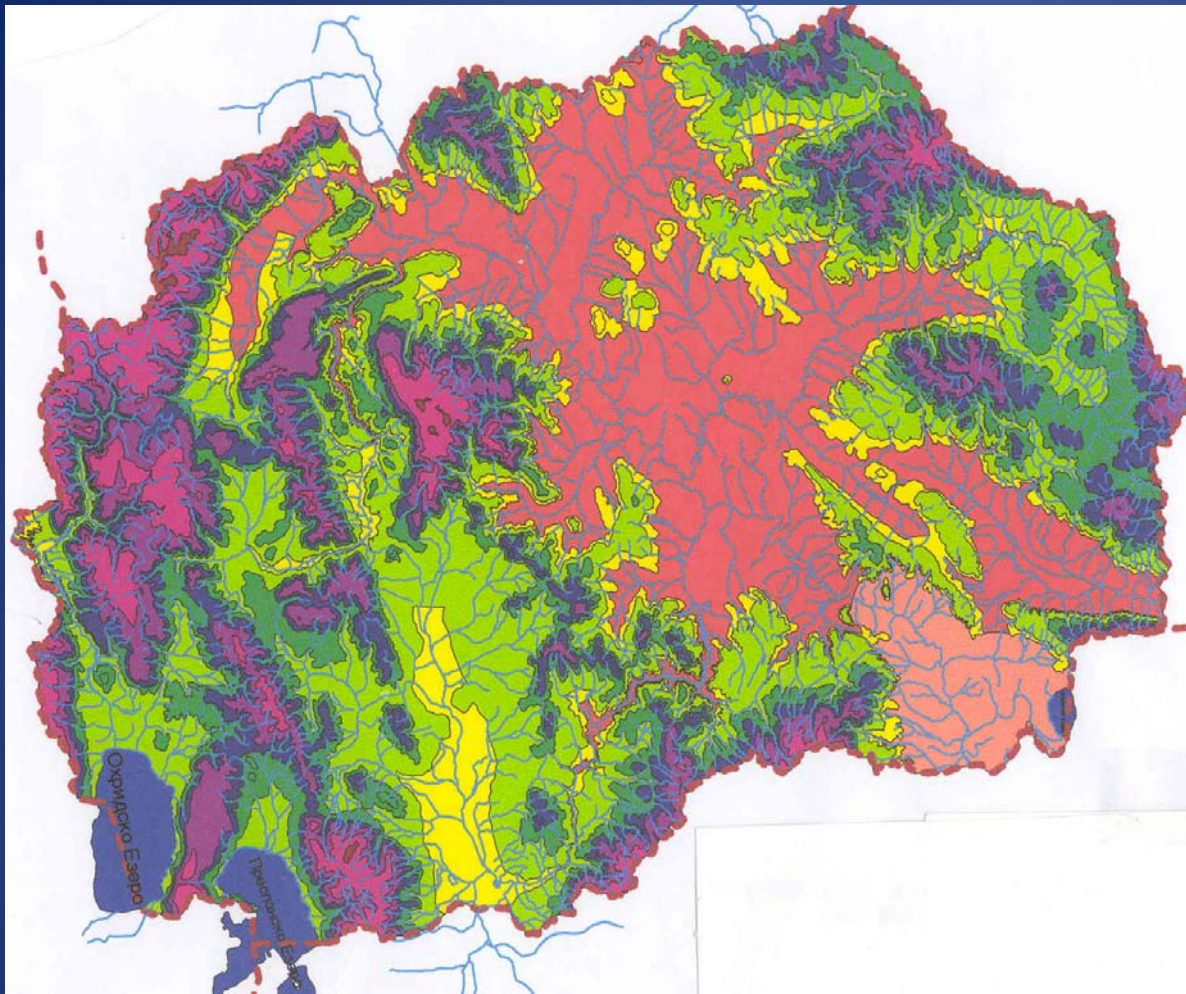




Although it is small in size, it is a very diverse country. Participation of plains in total surface area is 19.1%, the figure of reddish mountain terrains is 79%, where water surfaces are 1.9%.

From the aspect of topography, FYRMacedonia is mountainous country. Forests cover more one third of total territory of the country. Agricultural area cover 25%.





Different types of climate characterize the country: continental, changed continental, sub Mediterranean (changed maritime), mountainous climate, as well as their various subtypes.





# Hydrometeorological activities in our country have long and rich tradition

- 1891 - 1899 first meteorological measurements and observations were performed (met.station SKOPJE);
- 1896 - 1911 second meteorological measurements and observations were performed (met. station BITOLA);
- 1923 first precipitation station network;
- 1926 first climatological station network was organized;
- 1947 Hydrometeorological Service was established
- 1993 we became a permanent member of the WMO;



# METEOROLOGICAL STATION NETWORK



There are following meteorological stations :

- 14 main meteorological stations;
- 16 climatological stations;
- 160 precipitation stations;
- 4 automated weather stations (2 on the Airports)

Meteorological data have been archived in CLIDATA – data base



Addressing climate data sources and key records for the Mediterranean Basin for the investigation of relationship between large-scale climate variability and regional variability of climate, observations from seven Meteorological Stations could be used together with the large-scale analysis .

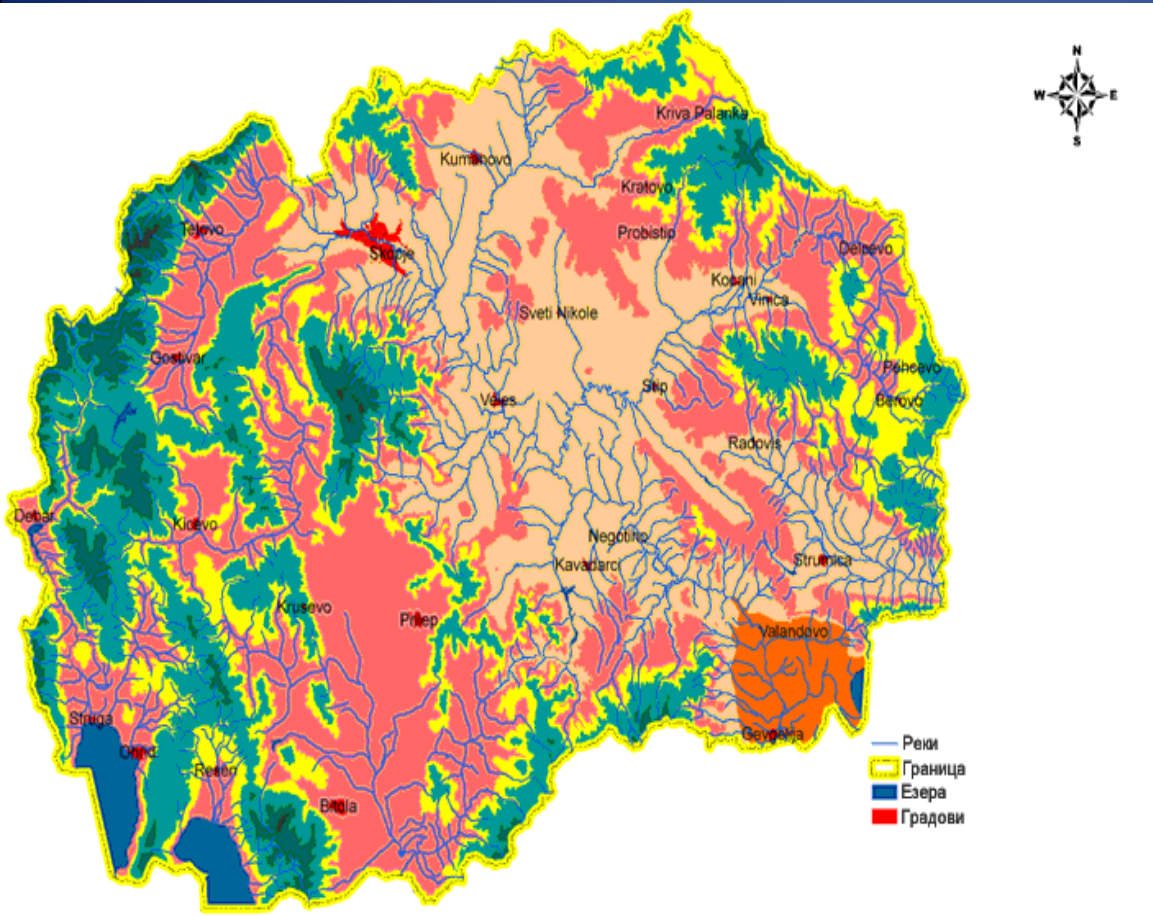
Selected locations represent different climatic types and subtypes affecting the climate of our territory, which are a combination of three major climate drivers that meet over the our Region :

Mediterranean,  
Continental  
and Mountain.

According to the climate types proposed by Ristevski (Filipovski et al. 1996; Ristevski, 2006), defined mainly with regards to altitude, and according to the typical annual cycle of mean monthly air temperature and precipitation amount **six** geographical regions of FYR Macedonia were treated separately in analysis:



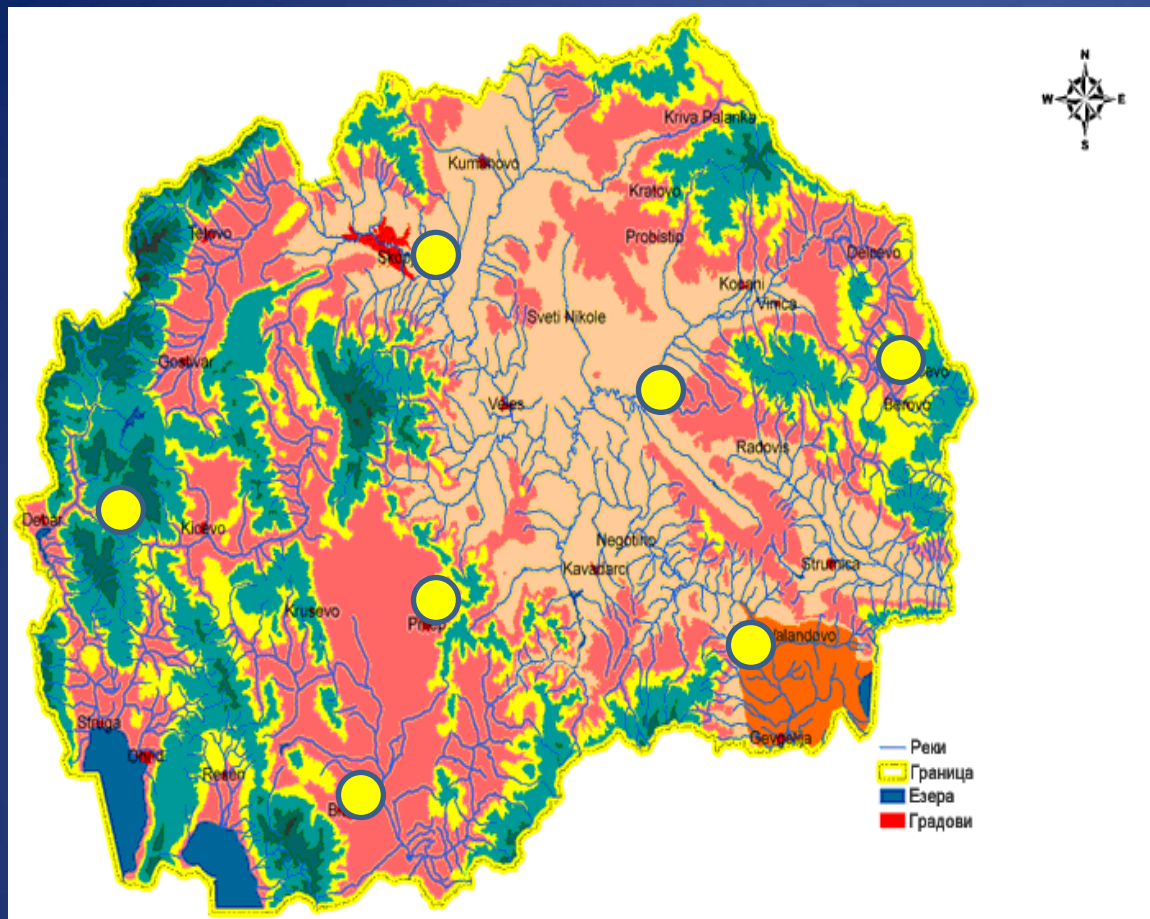




- 1. *south-eastern part with sub-Mediterranean climate;*
- 2. *central part with combined sub-Mediterranean / continental climate;*
- 3. *southern part with continental climate;*
- 4. *south-western part with continental climate;*
- 5. *eastern part with continental climate;*
- 6. *north-western part with prevailing mountain / Alpine climate.*







## SELECTED METEOROLOGICAL STATIONS

- DEMIR KAPIJA (1932)
- STIP (1926)
- BEROVO (1925)
- SKOPJE –  
PETROVEC(1924)
- PRILEP ( 1923)
- BITOLA (1927)
- LAZAROPOLE (1948)



Hourly measurements and observations of all meteorological elements and phenomena are performed and recorded in observation reports at all main meteorological stations except at those stations which work 12 hours. Continuous measurements have been performed since 1947 at all these stations.

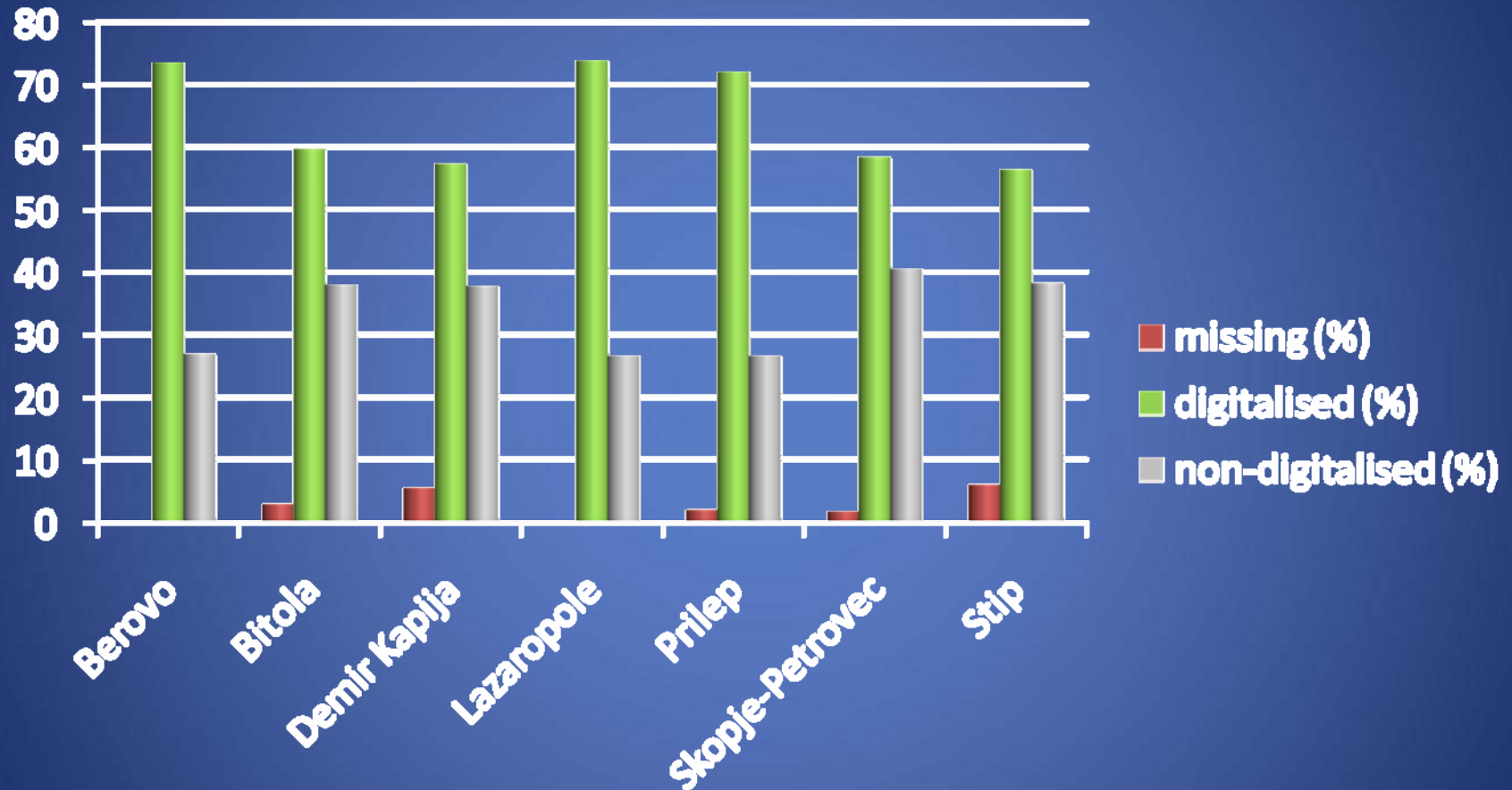
Standard elements and phenomena are measured by basic classic instruments and their appropriate recording instruments at main meteorological stations

- Temperature
- Relative humidity
- Atmospheric pressure
- Wind direction and speed
- Precipitation quantity and intensity
- Insolation
- Evaporation
- Soil temperature

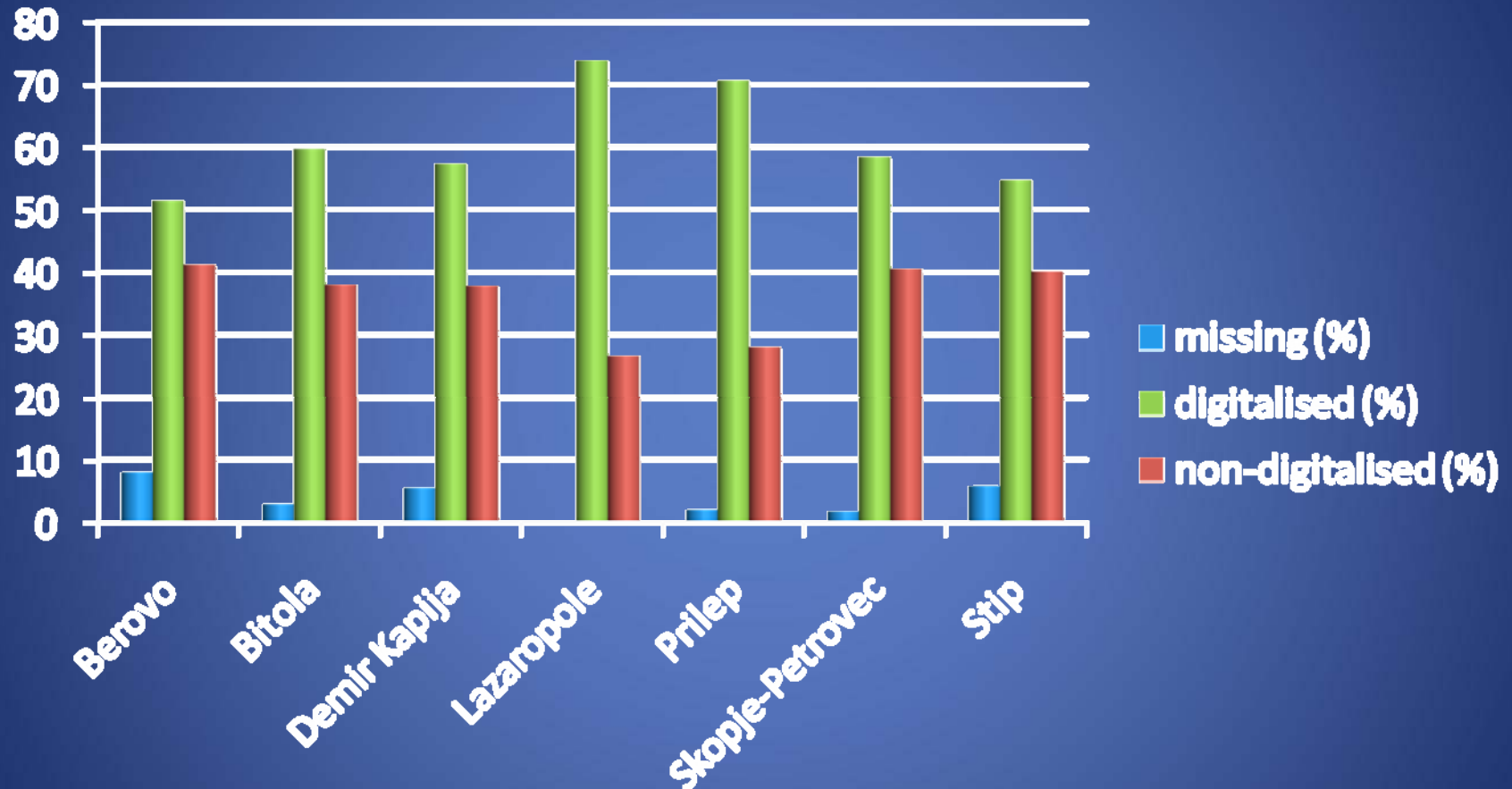




# Temperature (max, min, mean)

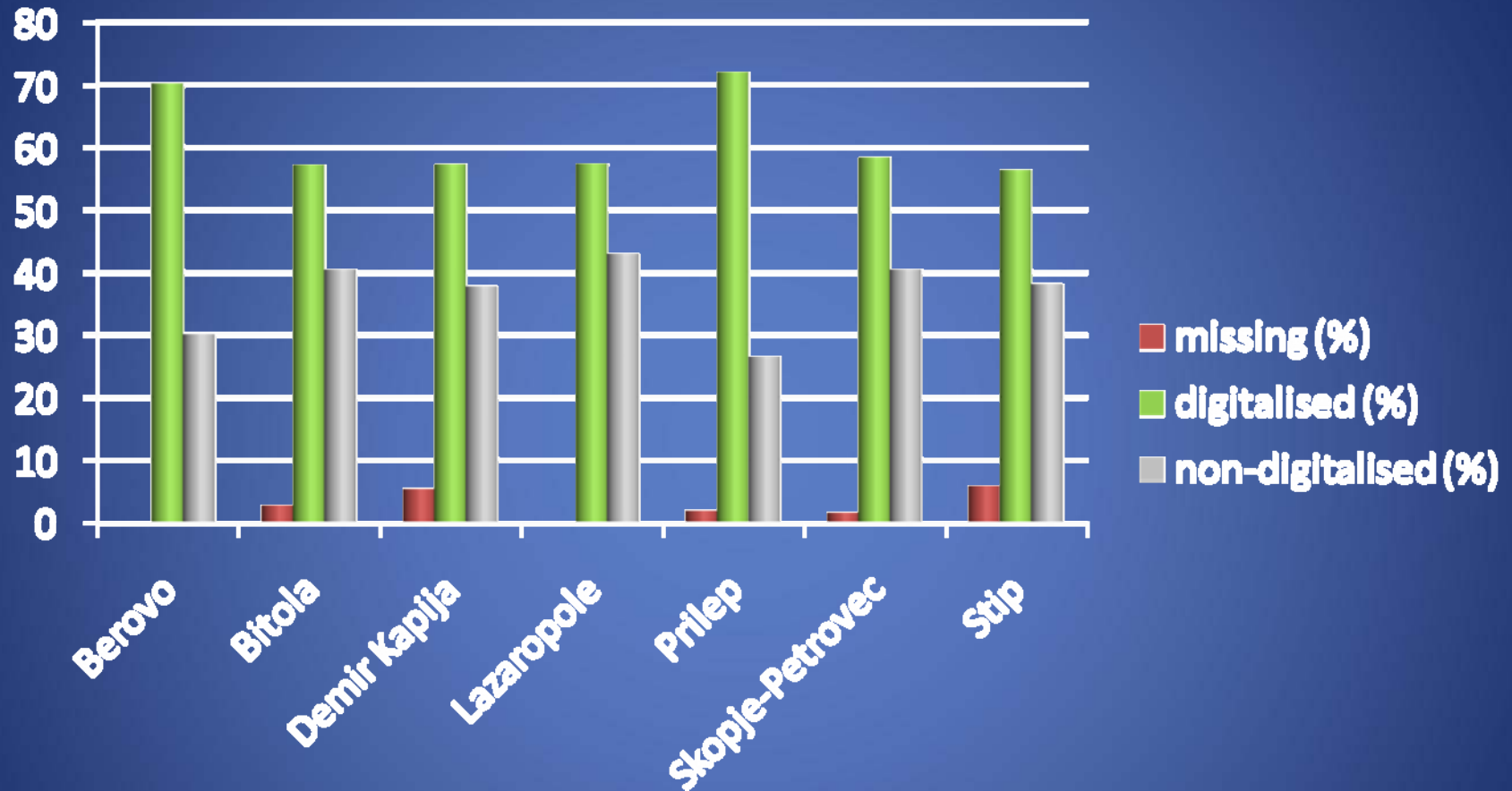


# Precipitation



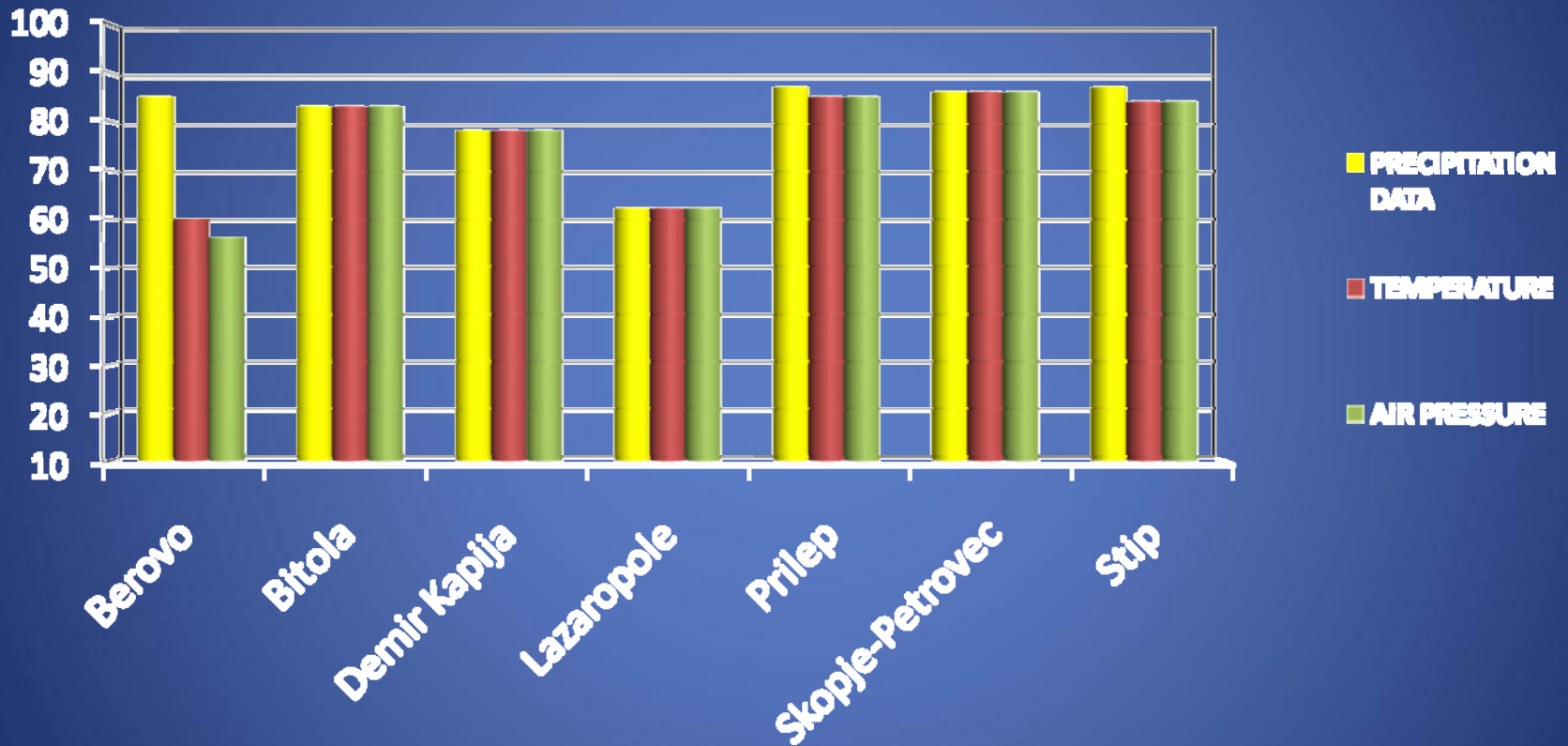


# Air Pressure



# HISTORY RECORDS

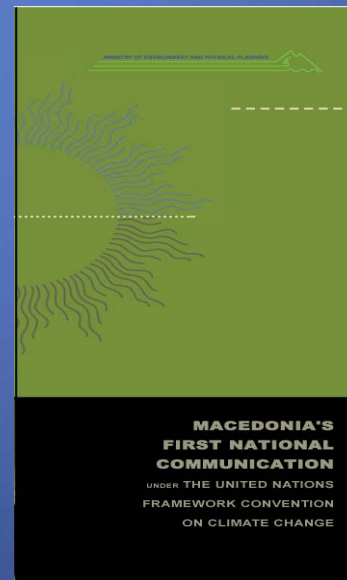
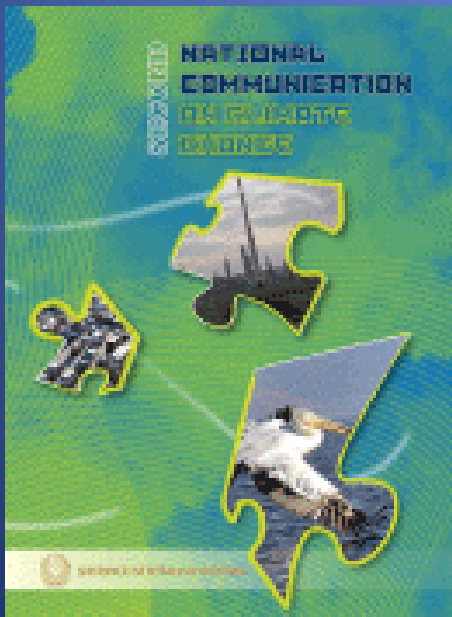
## OBSERVATION PERIOD





# Concerning the climate change and climate variability our Meteorological sector have taken part in preparation:

- FIRST NATIONAL COMMUNICATION UNDER THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE, 2003
- MACEDONIA'S SECOND NATIONAL COMMUNICATION UNDER THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE, 2006
- PARTICIPATION IN PLAN PREPARATION OF THE HEALTH SECTORE WHO PROJECT ON HEALTH PROTECTION FROM CLIMATE CHANGE
- MITIGATING CLIMATE CHANGE THROUGH IMPROVEMENT OF ENERGY EFFICIENCY IN BUILDING SECTORE



# STATUS OF DATA AND FUTURE EXPECTATION

- Not used the longest climate data series, only monthly climate data series 1926 – 2005;
  - Not homogenized data and completely statistical quality controlled
- With MEDARE initiative we can do the first step :**
- Try to find historical records since 1891/99 Skopje  
**Jahrbucher der k.k. Zentral- Amstalt fur Meteorologie und Erdmagnetismus, Wien** and Bitola 1896/1911  
**Annales du Bureau Centrale Meteorologique de France, Paris**



- Scan and copy first-ever publication of data



Year	Month	Day	Particulars	Debit	Credit	Balance
1850	Jan	1	By Balance		1000	1000
1850	Jan	15	To Cash	500		500
1850	Jan	31	By Cash		500	1000
1850	Feb	1	To Cash	200		200
1850	Feb	15	By Cash		200	400
1850	Feb	28	To Cash	100		100
1850	Feb	28	By Cash		100	200
1850	Mar	1	To Cash	300		300
1850	Mar	31	By Cash		300	600
1850	Apr	1	To Cash	400		400
1850	Apr	30	By Cash		400	800
1850	May	1	To Cash	500		500
1850	May	31	By Cash		500	1300
1850	Jun	1	To Cash	600		600
1850	Jun	30	By Cash		600	1900
1850	Jul	1	To Cash	700		700
1850	Jul	31	By Cash		700	2600
1850	Aug	1	To Cash	800		800
1850	Aug	31	By Cash		800	3400
1850	Sep	1	To Cash	900		900
1850	Sep	30	By Cash		900	4300
1850	Oct	1	To Cash	1000		1000
1850	Oct	31	By Cash		1000	5300
1850	Nov	1	To Cash	1100		1100
1850	Nov	30	By Cash		1100	6400
1850	Dec	1	To Cash	1200		1200
1850	Dec	31	By Cash		1200	7600
1850	Total			10000	10000	7600

- Digitized data which is non-digitized
- Homogenization

All this goals can be achieved with the project proposal  
 – define the partners platform and exchange policy



**Thank you for your attention!**

