

INTRODUCTION

- Climate change and cultural heritage (monumental heritage, manifestation, traditional activities)
- Sustainable development goals (SDG)

STUDY AREA

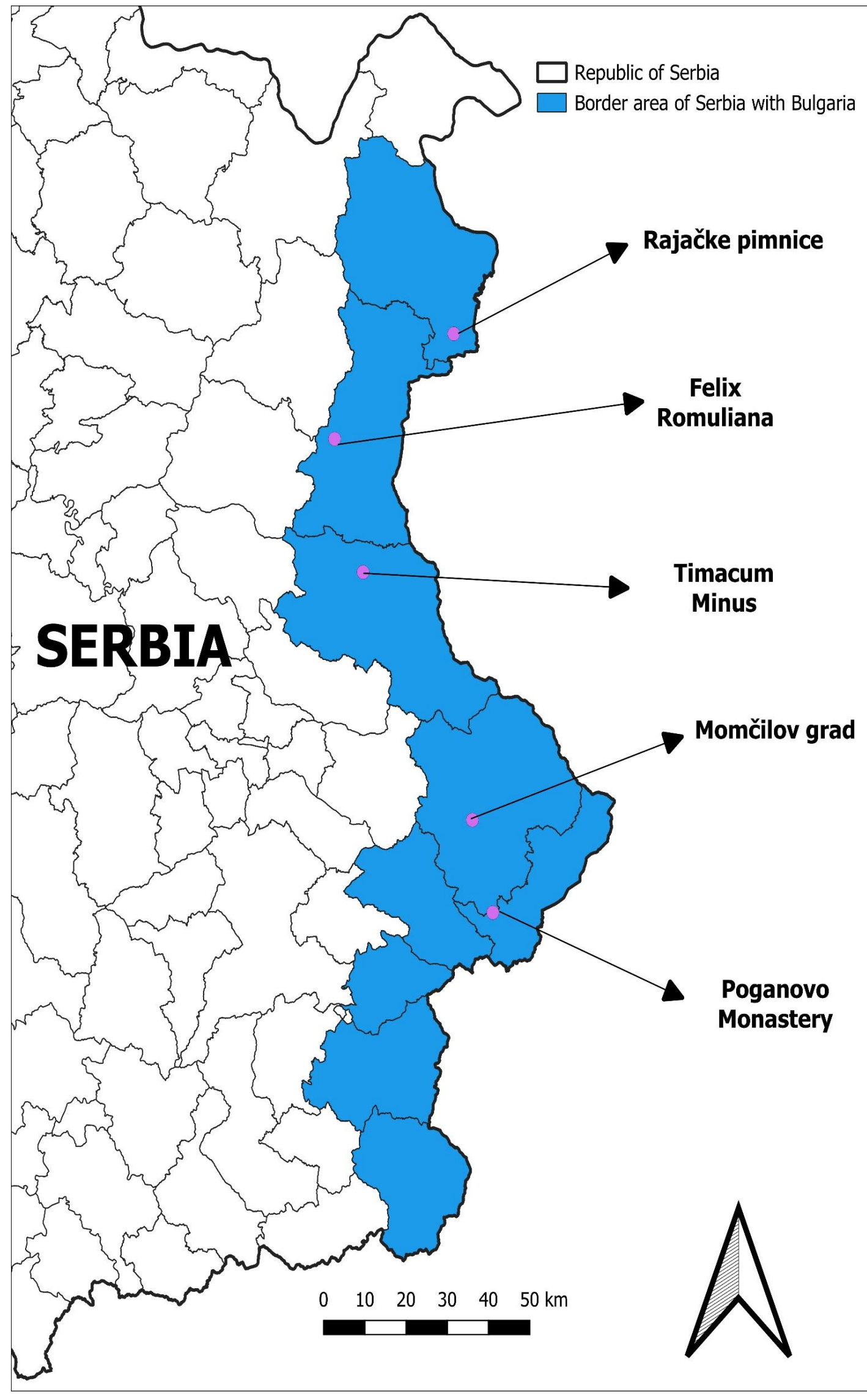
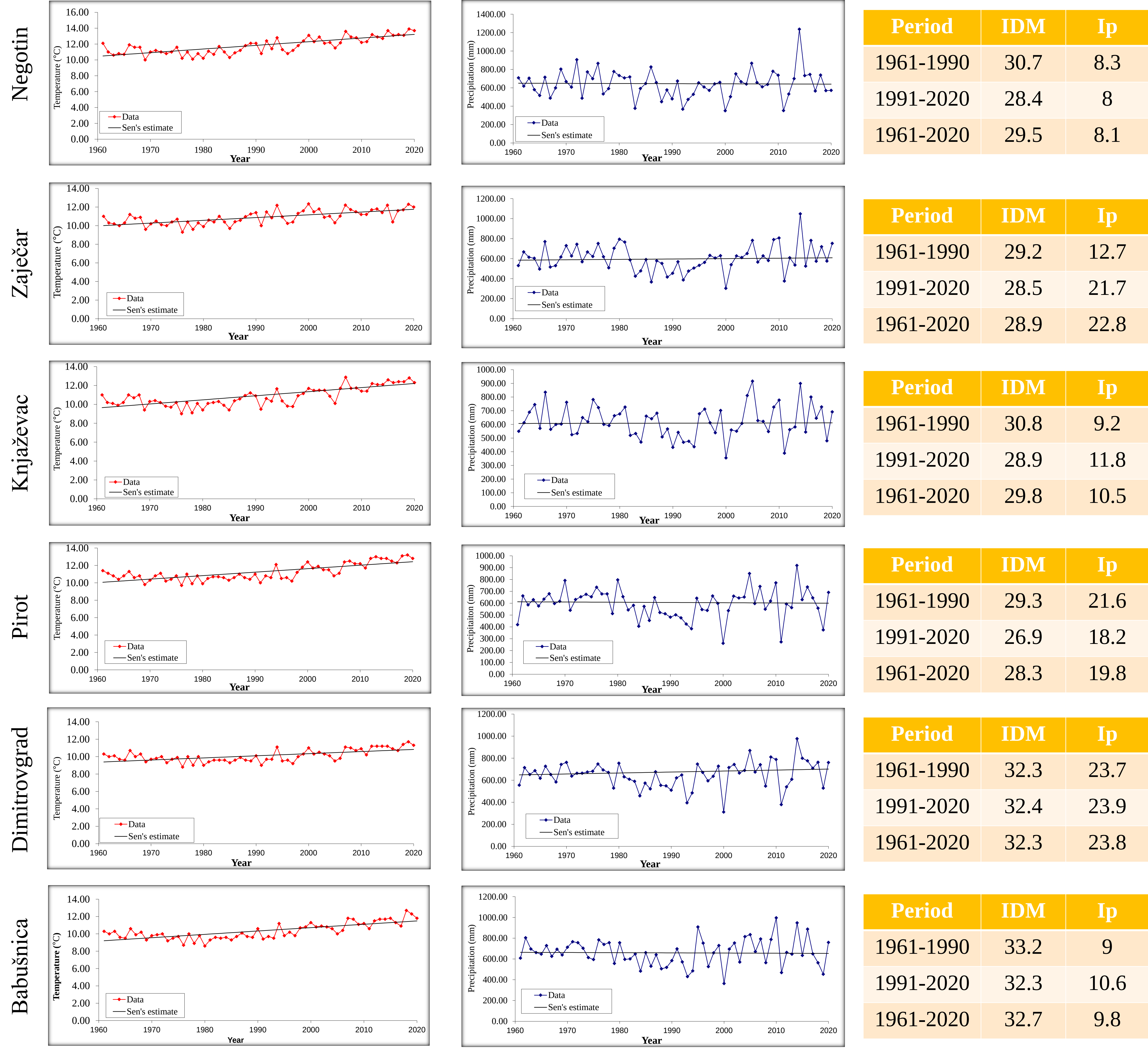
- 6 Meteorological stations: Negotin (42m, φ=44°14' λ=22°32'), Zaječar (144m, φ=43°53' λ=22°17'), Knjaževac (263m, φ=43°34' and λ= 22°15'), Pirot (370m, φ=43°09' and λ= 22°36'), Dimitrovgrad (448m, φ=43°01' and λ= 22°45'), and Babušnica (495m, φ=43°04' and λ= 22°26')
- Different climate types: Cfa (humid subtropical climate), Cfb (moderately warm climate with hot summers), Dfb (humid boreal climate with warm summers), Dfc (humid boreal climate with cool summers)
- The data source: Hydrometeorological Institute of the Republic of Serbia

METHODOLOGY

- Man-Kendall trend test (temperature and precipitation)
- De Martonne aridity index (IDM)
- Pinna kombinative index (Ip)
- Mapping cultural heritage

IDM < 5 areic areas (deserts areas)
IDM 5 –10 endorheic areas (border desert areas)
IDM 10 – 20 exorheic or endorheic areas (steppes)
IDM 20 – 30 exorheic areas (forests steppes)
IDM 30 – 40 peripheral drainage (forests)
IDM > 40 abundantly drainage (forest)

Ip < 10 dry
Ip 10 – 20 semi-dry Mediterranean
Ip 20 – 30 modified Mediterranean
Ip 30 – 44 humid continental
Ip 44 – 80 per-humid continental B
Ip > 80 per-humid continental A



- Statistically significant rising temperature trend, while the precipitation rising is not statistically significant annually
- Increasing the drought is the consequence of the strongest increase of the air temperature trend in the summer season ($\alpha=0.001$)
- Manifestations in the summer season (guitar party in Zaječar, Panajur assembly in Knjaževac)
- Indirect influence of climate on the traditional activities (viticulture in Negotin – Rajačke pimnice)
- Solution can be implementation sustainable development goals: SDG 13 (Climate action), SDG 11 (Sustainable cities and communities), SDG 7 (Affordable and clean energy)

CONCLUSION

- Necessary human influence at microlevel to alleviate extreme climate conditions (afforestation, preventing the vegetation of forest fires, reduction of harmful gases from industry), especially in the summer months
- Importance of preservation of cultural monuments of extreme climate events (high temperatures, large amounts of precipitation in a short period of time)
- Cultural heritage could be important for local development and sustainable communities
- Traditional activities could be connected with rural and agritourism, which depends of climate conditions (agricultural yields depend largely on climate)

