Climate Change in Serbia: Key Challenges

Presentation

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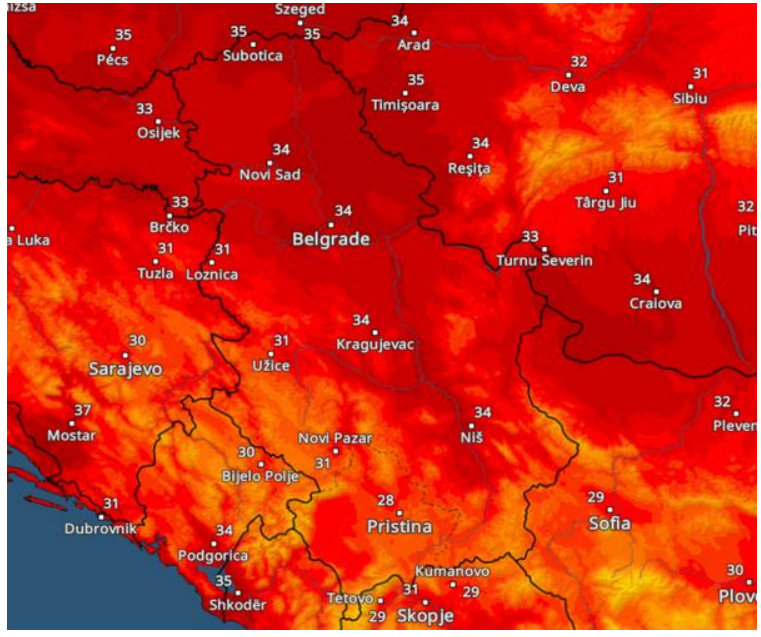
Temperature & Rainfall Changes

- 1961–2017: average temps +0.36°C per decade
- 1981–2017: faster increase, +0.6°C per decade
- 9 of 10 hottest years since 1950 occurred after 2000
- Heatwaves last 4 days longer per decade
- Future projections: +0.9°C by 2040, +2.2°C by 2070, +4°C by 2100
- Summers: up to 30% drier by 2100



Temperatures in Serbia have risen faster than the global average — about 0.6 degrees per decade since the 1980s. Heatwaves are getting longer, while frost days are fewer. By the end of the century, summers may be four degrees hotter and up to thirty percent drier.

Water Resources

- Danube & Sava: –1% water level per decade since 1950
- Smaller rivers: –3% per decade
- Future: –10% to –40% reduction in flow
- Rural water supply most at risk
- Low levels increase pollution concentration
- Floods: 2014 caused $1.4 billion in damages

The water level of the Danube in Novi Sad was within historical minimums in March

Our rivers are shrinking. Levels on the Danube and the Sava are falling, and in some smaller rivers the drop could reach forty percent in the future. This threatens rural water supply and water quality.
At the same time, extreme rainfall events bring floods — the 2014 floods caused more than one billion dollars in damage

Local Note: Arsenic in Drinking Water

- In Novi Bečej, arsenic levels in groundwater have been recorded as high as 273 µg/L — over 27 times the legal limit.
- Because of this, tap water in Novi Bečej was labeled “technical water,” meaning it’s not considered safe for drinking without treatment.
- Across Vojvodina, approximately 600,000 people get drinking water containing elevated arsenic concentrations.
- Other cities in Vojvodina also face serious problems:
  - Zrenjanin has seen arsenic levels reach 194 µg/L in some areas.
  - Subotica has reported levels up to 99 µg/L in certain zones before water treatment upgrades.
- These concentrations far exceed the Serbian and WHO safe limit of 10 µg/L.

Forests

- Forests cover 29% of Serbia
- 2003–2012: 36,095 hectares burned
- 2000–2009: losses of 36 billion dinars
- Wood quality losses: up to 95% of revenue
- Example: Vojvodinašume lost 50 million dinars
- By 2100: forests drier, mass die-offs expected

The areas around Letenka, Brankovac, Stražilovo, Kraljeva Stolica, the Valley of Chestnuts, the Valley of Crveni Čot, Rohalj Base, and other places with hiking trails and picnic spots have literally been devastated.

Forests cover nearly a third of Serbia, but they are under stress from drought, fires, and pests. In one decade, more than thirty-six thousand hectares were destroyed by fire. Poorer wood quality and dying forests already bring heavy losses, and models predict that many forests will not survive in their current zones by the end of the century.

Forests

Here in Vojvodina, we depend on Vojvodinašume, which manages much of our woodland. But higher temperatures, pests, and wildfires have already damaged large areas. For example, oak and poplar forests in Banat have been drying and dying back, showing how even our local landscape is under stress.

Agriculture

- Agriculture = 10% of GDP
- 2012 drought: $2 billion in damages
- 1994–2014 yield losses:
- • Corn: –60% ($2.2 billion losses)
- • Beans: –55% to –70%
- • Soy: –54%, Wheat: –40%
- Future: corn yields may drop 22–55% by 2100

The summer of 2022 was the third hottest on record and extremely hot across Vojvodina. In Novi Sad, the average temperature was 2.6°C above normal.

Even more serious was the lack of water. Much of Europe faced a historic drought—the worst in 500 years—severely affecting Vojvodina's cornfields and the Pannonian Plain.

Agriculture is vital to Serbia's economy, but very vulnerable to climate extremes. In 2012, drought caused two billion dollars of damage. Between 1994 and 2014, yields of corn, beans, and other crops fell by up to seventy percent. Projections show corn yields could fall another twenty to fifty percent by 2100.

In our part of Banat, fields of corn, sunflowers, and beans stretch for kilometers. But these are exactly the crops most affected by drought. In very dry years, farmers around Novi Bečej lose much of their harvest, and prices rise sharply — something we have already experienced in our markets.

Biodiversity

- Ecosystems (forests, grasslands, rivers) at risk
- Species in fragile habitats struggle to adapt
- Lack of migration corridors increases extinction risk
- Endemic species loss → lower genetic diversity
- Threatens ecosystems and natural heritage

Climate change also threatens Serbia’s unique species. Habitats like mountains and riverbanks are fragile, and many animals and plants cannot adapt or migrate. Without natural corridors, extinction risk grows. Losing endemic species would mean losing part of our natural heritage forever.

Slano Kopovo – Oasis of Untouched Nature

One of the most unique natural areas in Serbia and Europe

A very distinctive plant and animal world develops and survives here

Formed from the old riverbed of the Tisa

Salty soil and water created by underground minerals

One of the last preserved saline lakes in Vojvodina, now on the verge of disappearing

Important Special Nature Reserve and key bird habitat

Home to cranes, wild ducks, geese, sandpipers, and avocets

203 bird species recorded – 63% of all in Vojvodina

Most impressive in autumn during crane migration

The Tisa river, which flows through our town, is a symbol of biodiversity — from fish to the famous flight of mayflies in June. But pollution, drought, and climate change put these species at risk. Even storks, which are common in our region, face difficulties as wetlands shrink.

Conclusion

- Climate change in Serbia is already visible
- Rising heat, clean drinking water, stressed forests
- Agricultural damage and biodiversity loss
- Protecting nature = protecting our future