

## CZECH REPUBLIC



Source: esri

### General

The Czech Republic is a landlocked country in Central Europe bordered by Germany in the West, Austria in the South, Slovakia in the East and Poland in the Northeast. The country has an area of 7.89 Mha (million hectares) with in 2020 a population of 10.5 million, or 1.33 persons per ha (Wikipedia and United Nations, 2019).

### Climate and geography

The Czech Republic mostly has a temperate oceanic climate, with warm summers and cold, cloudy and snowy winters. Due to the landlocked geographical position the temperature difference between summer and winter is relatively high. Within the Czech Republic, temperatures vary greatly, depending on the elevation. The wettest area is found around Bílý Potok in Jizera Mountains and the driest region is the Louny District to the northwest of Prague. Another important factor is the distribution of the mountains; therefore, the climate is quite varied. In the lowlands of the South Moravian Region, the average temperature is as high as 10 °C. The country's capital, Prague, has a similar average temperature, although this is influenced by urban factors. The warmest month is July, followed by August and June. On average, summer temperatures are about 20 – 30 °C higher than during winter. During October, temperatures usually fall below 15 or 10 °C. By the end of November, temperatures usually range around the freezing point. The coldest month is usually January, followed by February and December. During these months, there is usually snow in the mountains and sometimes in the major cities and lowlands. During March, April and May, the temperature usually increases rapidly, especially during April, when the temperature and weather tends to vary widely during the day. Sporadic rainfall is relatively constant throughout the year, but concentrated heavy rainfall are more frequent in the months of May to August. Severe thunderstorms, producing damaging straight-line winds, hail, and even occasional tornadoes occur, especially during the summer period (source: Wikipedia).

The Czech landscape is exceedingly varied. Bohemia, in the West, consists of a basin drained by the Elbe and Vltava rivers, surrounded by mostly low mountains. Moravia, the eastern part of the country, is also quite hilly. It is drained mainly by the Morava River, but it also contains the source of the Oder River. Water from the landlocked Czech Republic flows to three different seas: the North Sea, Baltic Sea and Black Sea. Spring is characterized by high water levels in the rivers, due to melting snow with occasional flooding. Summer is characterized by rain and storms. Autumn generally begins in September, which is still relatively warm and dry. (source: Wikipedia).

### Existing polders

Konecny *et al.* (2013) describe restoration activities in the Polder Soutok that is located in the Czech Republic and to a certain extent also in Austria (Figure 1).

Characteristic data of the existing polders in the Czech Republic are shown in Table I.

### Proposed polders

Dumbrovsky and Korsun (2012) propose a method to make use of polders for flood protection and show a possible application near the village of Starovice.

### References

Dumbrovsky, M. and S. Korsun, 2012. *Optimization of soil erosion and flood control systems in the process of land consolidation*. In: D. Godone and S. Stanchi (eds.). *Research on Soil Erosion*. <https://www.intechopen.com/chapters/37815>.

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Konecny, Robert, Pavel Tollner, Vlastimil Kreči, David Vesely, Stephen Nemetz, Florian Wolf-Ott, Andreas Chovanec, Achim Naderer, Barbara Becker, Franz Steiner, Bernd Winkler and Franz Water Froschauer, 2013. *Polder Soutok – Integrative flood protection and river restoration at the confluence of Morave and Dyje.* Powerpoint presentation. European River Restoration Conference. 5<sup>th</sup> Edition, 11-13 September, Vienna, Austria.

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Figure 1. Location of the Polder Soutok, located in the Czech Republic and to a certain extent also in Austria (Konecny et al., 2013)

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Table I. General characteristics of existing polders in Czech Republic

Name	Reclamation	Area in ha	Type *)	Latitudes	Longitudes	Elevation in m+MSL	Land use
Soutok Polder			RLL	48° 40' N	16° 57' E	152	Agriculture and forest
Total							

\*) RLL = reclaimed low-lying land; LGS = land gained on the sea; DL = drained lake