

Clim. Past Discuss., referee comment RC1  
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## **Comment on cp-2021-41**

Olga Solomina (Referee)

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Referee comment on "The 1921 European drought: impacts, reconstruction and drivers"  
by Gerard van der Schrier et al., Clim. Past Discuss.,  
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The paper is an important contribution to the modern and paleo- climatology. Combining the data from historical archives, early meteorological records, and modern approaches of climatological studies the authors provided a holistic view of an unusual event that occurred in 1921 in Europe – an extreme drought. They analyzed its spatial distribution with high temporal resolution in 1920-1921, considered potential drivers including the contribution of the climatic conditions of preceding autumn and winter, and the soil desiccation. Screening the European newspapers from five countries, they identified various types of impacts in agriculture, livestock farming, forest management, water quality etc. that affected different regions in 1921.

The most substantial conclusion that the authors achieved is the assessment of the scale of the 1921 drought in the frames of the past century. With high confidence, they demonstrated that this event was the most extreme over the century. Two events with similar atmospheric conditions in 1976 and 2018 were of smaller amplitude.

To support their conclusions the authors used very extensive set of meteorological data. They also introduced new meteorological records that they rescued from the local sources. These new datasets allowed constructing the network dense enough to reconstruct substantial details of the meteorological situations in 1921 over the Europe.

Another original block of a new data – the evidences of different types of consequences of the 1921 drought published in the newspapers. I appreciate the photos included in the supplementary – they show how the meteorological extremes affect the everyday life of people.

The Old World Drought Atlas (Cook et al., 2015) reproduces the drought of 1921 as a very severe one. Moreover, the European Russia Drought Atlas (Cook et al., 2020) shows that

this drought was spreading up to the Volga River region area and the southern Urals.

My conclusion is that the subject of this paper is within the scope of the "Climate of the Past" and the work represents an interesting and non-trivial approach highlighting a single (but compound) event considering it from different aspects. The methods and approaches used are appropriate. The presentation quality is high. The text is comprehensive, concise, with good illustrations. I do not see any substantial gaps in the literature cited. The language is clear. I found very few places that require editorial changes (e.g. "...the length of the dry spell is varies from country to country". "...the water level in the Rhine has been record low from spring ..."), but I am not a native speaker and cannot assess the manuscript from this side.

I believe that the paper is suitable and ready for the publication in the Climate in the Past.