

Clim. Past Discuss., referee comment RC1
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Comment on cp-2021-165

Anonymous Referee #1

Referee comment on "A global inventory of quantitative documentary evidence related to climate since the 15th century" by Angela-Maria Burgdorf, Clim. Past Discuss., <https://doi.org/10.5194/cp-2021-165-RC1>, 2021

Summary

Angela-Maria Burgdorf compiled an inventory of documentary evidence relating to climate history spanning the globe dating back to the fifteenth century of materials. In addition to her paper, she has also compiled a very impressive excel sheet, which can be found in the supplementary materials, with 686 data sets that she has analyzed for this paper.

General remarks

Burgdorf's research presented here is impressive and provides an important and much needed first step of integrating the archives of society, i.e. documentary evidence in its many shapes and forms (diaries, ship log books, newspaper articles, clerical documents, chronicles, etc.) with the archives of nature, proxy data from tree rings, ice cores, etc. For the international community, this integration of data from the archives of society is very important as it is currently underrepresented and as historical records often include very precise information that can help the dating of extreme weather events or volcanic eruptions for instance. Furthermore what is also important is the global focus of this inventory, as very often the focus is on Europe, for which very good data exists, but it is crucial to also learn about the resources in other parts of the world and to use these. Her paper provides an inventory of those records that derive from mostly English-language sources that cover a period of at least two decades prior to 1880.

On page 5, line 21, the author mentions that "the period of 1400-1880 is defined as the period of interest." Here I would ask the author to elaborate on why she is specifically

interested in this period. What makes this period so special? Why is it important to study and highlight this period? Why did the author pick 1400 as a start point and 1880 as the endpoint? As a historian, I have an idea why this time frame was chosen, but for the interdisciplinary audience that the journal aims at, I would like these to be spelled out further.

I want to compliment the author on the structure of her article, it made a lot of sense to introduce the inventory and relevant data before "testing" the inventory's use with three case studies, the first two case studies analyze volcanic eruptions, the 1693 Mount Serua (Indonesia) and unknown 1695 volcanic eruptions and the 1783 Laki eruption in Iceland. Here the author is able to contrast tropical (first case study) and high latitude eruptions (second case study). In this instance, I would have preferred more background information on the 1693 and 1695 eruptions, whether we know if the latter is tropical or not. (Perhaps the 2019 paper by Roseanne D'Arrigo et al. on "Complexity in Crisis: The volcanic cold pulse of the 1690s and the consequences of Scotland's failure to cope." In the Journal of Volcanology and Geothermal Research might be useful here). Considering at least the 1693 eruption was tropical, I wonder why the author chose to only look at the northern hemisphere in the maps of figure 3 and why not utilize the inventory to its full scale and draw a global picture, as far it is possible with the data available. The findings regarding the 1783 Laki eruption are in good agreement with current scholarship in the field of history. The third case study looked at precipitation anomalies during the global drought of 1877-1878, which was interesting and helpful to illustrate that the inventory is not only able to demonstrate temperature changes but also dryness/wetness. Considering that there are two examples of volcanic eruptions, I wonder if it might be useful to also show two droughts, perhaps a drought phenomenon in the early modern period, either global or regional.

The author shows a good knowledge of the field and relevant publications are cited throughout her paper. The number and quality of the references is appropriate. The author also clearly states her own original contribution in the paper.

The title clearly reflects the content of the paper and the abstract gives a good and complete summary of the paper.

The language and grammar of the paper are very good, fluent, concise, and easy to read.

I believe this paper would be a valuable contribution to *Climate of the Past*.

Specific remarks

I found very few typos in the text, one such instance can be found on page 5, line 21, there is a random "... a." at the end of the sentence.

I found the expression on page 10, line 1-2, "the focus here is on more recent evidence" too vague, I would ask the author to specify the time period she is interested in here, as there are scholars with vastly different research foci in Climate of the Past's audience (Holocene vs. the early modern / modern period).

Page 10: I did not understand why the numbers of these records appear to drop so sharply around 1880. This trend does seem very important, could the author elaborate on this change in data availability during this time? (Is it perhaps because of the author's focus on data that covers at least two decades before 1880?) It did not become clear to me what role the publications of Rykachev play in this context. I believe this needs a little bit more context for readers not familiar with this author.

On page 15, line 30, I found the expression "nice agreement" too colloquial.