

Clim. Past Discuss., referee comment RC2 https://doi.org/10.5194/cp-2021-52-RC2, 2021 © Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.

Comment on cp-2021-52

Anonymous Referee #2

Referee comment on "Climate variability and grain production in Scania, 1702–1911" by Martin Karl Skoglund, Clim. Past Discuss., https://doi.org/10.5194/cp-2021-52-RC2, 2021

General comments

The article studies the relationship between climate variability and gran production in Scania (southern Sweden), between 1702 and 1911. The study also claims, in the abstract, that it will shed new light on the climate history of the region by homogenizing the Lund instrumental series. The article, therefore, has several goals and is ambitious. As some of my questions, have been dealt with in the discussion already, I try to focus on some other issues that could improve the manuscript. The manuscript has potential, but the manuscript could use a thorough revision when it comes to structure. In its current form, it is difficult to follow the authors line of thought. Sentence structure is often speculative and results and approaches needs to express intent more clearly.

My initial impression was that the manuscript would be improved if it was written as two separate articles and it would make it easier for the author to focus on grains and climate. The first article could present the homogenization of the Lund series, which then could be used as a background for a more in-depth approach to write the second article, which would compare climate variability and grain production. As it reads now, the meteorological series from Lund is not actually mentioned until page 14, which is followed by an analysis, results and discussion (section 2.3). As such, the manuscript provides new perspectives and approaches, but the manuscripts structure and formulations need to be improved.

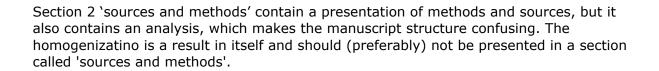
The reason for my suggestion to write two articles instead of one article is that I am

unfamiliar with the Lund series. Does it cover the 1753-2020 period (the end period is not mentioned)? What are the gaps (months, years, days?) mentioned on line 386? This section is extremely condensed, and I would prefer if the series was introduced more thoroughly. As it is, there are no references to the series. Also, it reads somewhat peculiar when it is noted that there are series from 'nearby regions' (line 392), mentioning both Uppsala (c. 500km) and Central England time series (c. 1000km), and I wonder if the distance of 500km between Lund and Uppsala, or 1000km between Lund and England could be considered 'nearby'? This is a matter of semantics, however, I think that the series and the correlation deserves a more in-depth discussion than this. Especially considering the results and the correlations in Table 2. The results are interesting. It is intriguing that the correlations during the months May-October, between Lund and Stockholm, Uppsala and Berlin-Dahlem are stronger than those with neighboring Copenhagen (c. 40km). Why is this? Is it a question on instrumental reliability, series validity or climatic factors? Answering this question is not the purpose of this article, but it seems guite central for the analysis and series in general. Moreover, in Figure 6 and 7, the series is extended to 1701 even though this is not mentioned earlier. In summary, the approach is interesting, but it needs more context. Finally, on page two, it is said that the climate in Scania resembles that of England. Why then is the correlation with the Central England time series the lowest of all? What part of the 'relatively mild' (line 33) Scania climate is comparable to England? Also, what is the correlation period analyzed in Table 2, is it the studied period 1753-1922 or 1753-2020? A general description of the climate in Scania, without comparisons to other European regions, could make it clearer.

In section 1.1. There is quite a lot of focus on climate in the 16th and 17th centuries whereas climate development during the 19th century, receives very little space. Maybe Figure 1 could be employed for a more extensive discussion on climatic development? The section could be strengthened by placing focus on the studied period.

Section 1.2. Farming in Scania. The theme is farming and harvesting, but I would like to see more information on harvest dates and threshing, especially as it is of great relevance for the analysis and the clustering (and because Scania seems to differ from other parts of the Nordic countries?). Some of this is already mentioned in the discussion with RC 1. Adding to this discussion, maybe there could be a sentence or to describing the length of the growing season (line 589)?

Section 1.4 mostly seems like a presentation of previous research and I wonder if this could be presented earlier in the manuscript as part of 'previous research', especially the presentation of the research conducted by Edvinsson et al. (2009).



I think a more classic structural approach of the manuscript (where material, method and analysis are presented in separate sections) could work better and it would improve readability.

Specific comments

The manuscript has a very speculative language. This affects the overall impact and scientific quality of the manuscript. The term 'relative' is used frequently and situations or climatic conditions are often described as 'relative'. A search indicates that the word 'relative' appears 62 times in the manuscript (four times in the abstract) in various contexts to describe a myriad av situations. For example, (line 65) is explained that 'relative peace' dominated in the 1700s compared to previous centuries. I am not familiar with Swedish history, what does this indicate in terms of wars and skirmishes? Is the frequency or magnitude of skirmishes that defines 'relative' peace? However, I do not think this historical overview of the political history of the region is necessary because the author does not return to this subject or its impact on harvests or threshing.

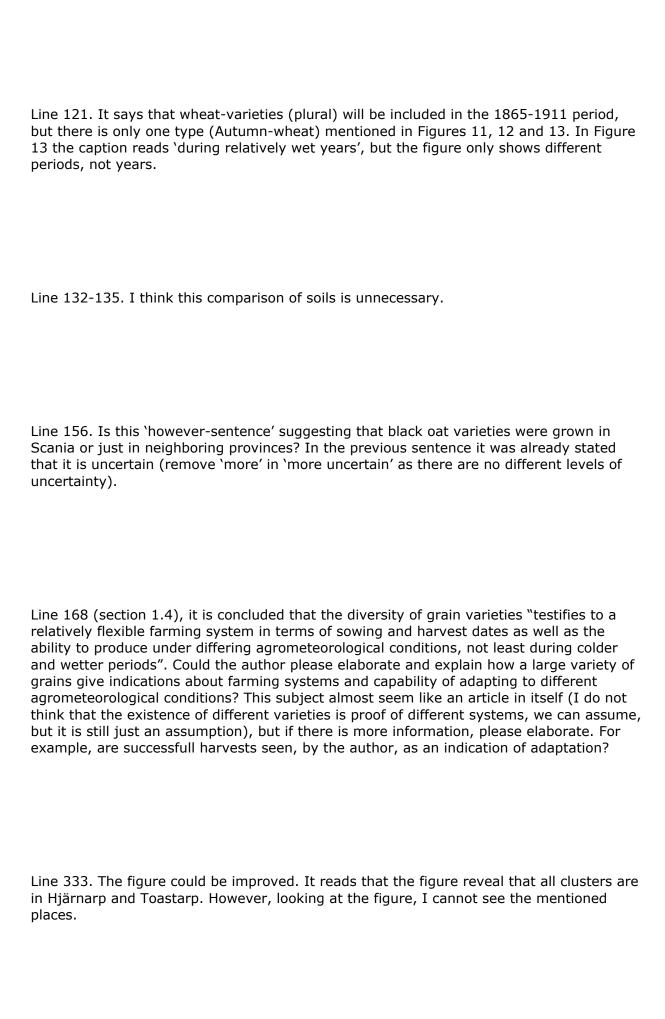
This use of relative continues throughout the manuscript. On page four, the term 'relative' occurs five times. On line 94, 'relative lack of wood' and on line 105 'in their relative specializations', and then on line 115, 'with relatively much...' and later in the same sentence 'saw a relatively large increase'. Finally, in the footnote on page 4 'relatively

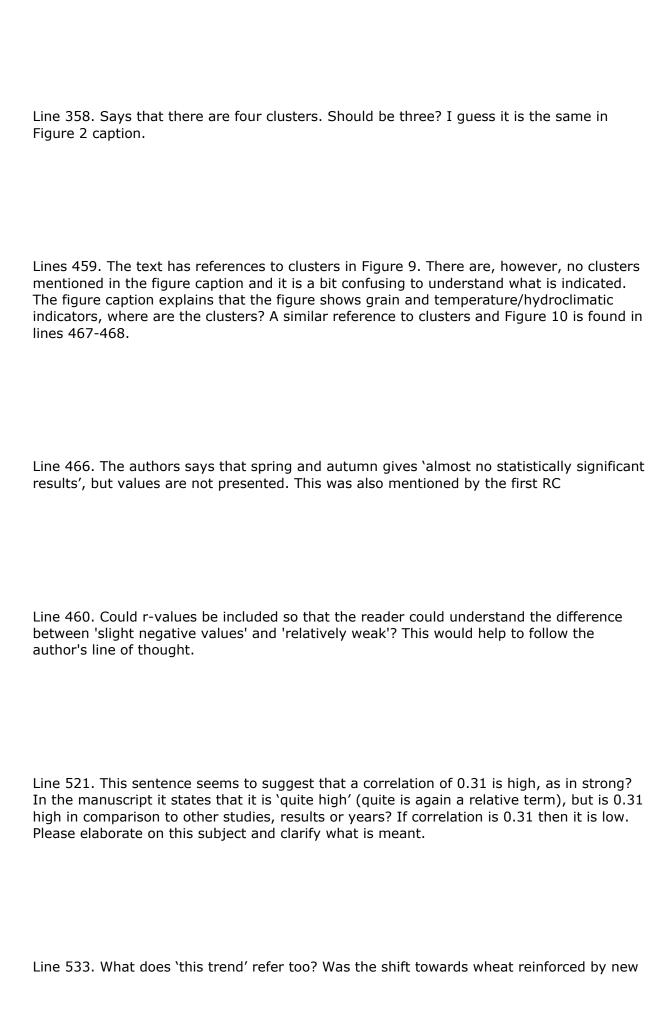
Relative is a subjective term and should be avoided as it in a scientific investigation provides no actual perspective of change, magnitude or proportions. For instance, what does a 'relative lack of wood', indicate or describe? Is it an indication of amount of wood, distance to wood (as in a forest), lacked access to firewood? And on line 85 (page 3) it is explained that the 1810s and 1840s were 'relatively cold', relative to what place and period? Relative to the 1600s? Was it colder all year round, was only the summers colder or was the 1810s colder than previous/later periods (decades) or what is just cold in comparison to warmer periods (decades)? Even in the results (line 464) it is said that the analysis shows 'relatively large negative associations' and Figure 13 includes an analysis of 'relatively wet years'. How wet is a 'relatively' wet year, is it possible to quantify and explain this in the text? Is a 'relatively wet year' wetter than 'normal' years, and if so, how much?

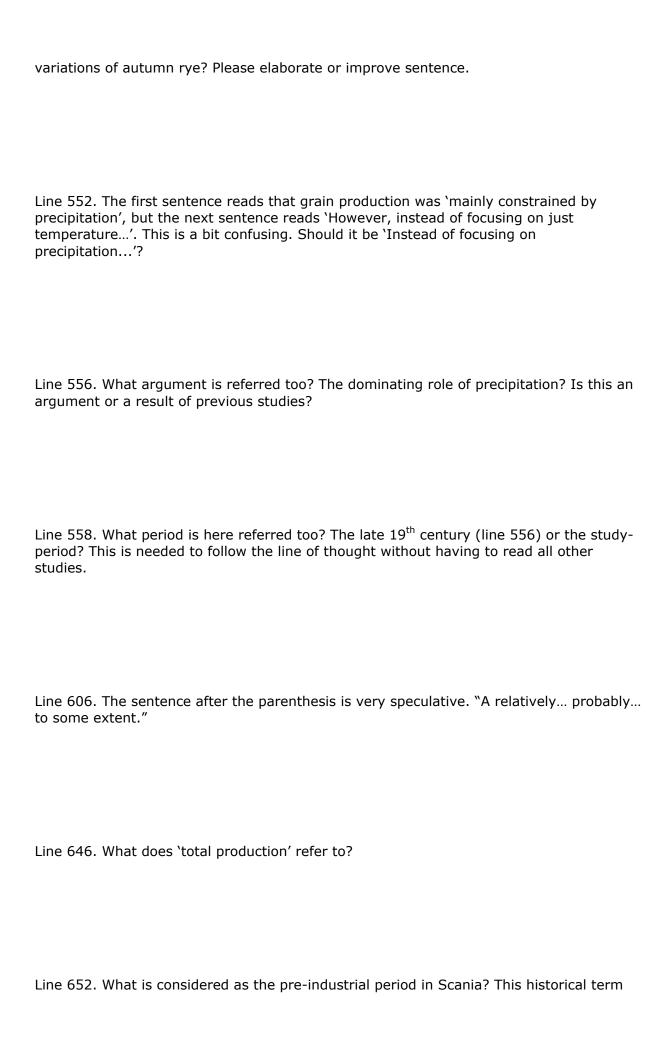
Finally, describing things as being 'relative' are vague and it raises a lot of questions. I think that rewriting and rephrasing many of the vague sentences would greatly improve the manuscript and make it easier to evaluate the content. The results would also stand out more clearly.

Technical comments

Line 14. In the abstract it says that new cultivars were being 'imported' at the end of the period from other parts of Europe. This is not discussed in the manuscript. Did the import start at the end of the 19th century or were new cultivars in use all across Scania by the end of the studied period? Why were they imported, was it caused by changes in climate, demand or other issues? As I read the article, there already seemed to be an extremely diversified variation of grains, but the new cultivars are just one variant of autumn-wheat and autumn rye? The questions are rhetoric but stems from how the subject is approached and the changes that occurred in the later part of the investigated period.







appears twice in the manuscript, but I do not know when the industrial period started in Southern Sweden or how it relates to the agrarian revolution (Line 60). Is the import of new cultivars (line 14) part of the agrarian revolution or the industrial revolution?
Caption in Figure 6 and 7. A technicality, but I would rather see the sources for this figure included in the captions instead of referring to the footnote in Table 2.