

Interactive comment on “Documentary data and the study of the past droughts: an overview of the state of the art worldwide” by Rudolf Brázdil et al.

Anonymous Referee #1

Received and published: 10 October 2018

This is a comprehensive review that covers an important area within historical climatology. Whilst it does not contain any new data it goes over a lot of ground and I think will be a useful benchmark for the state of the discipline, hopefully encouraging more research in this area. The synthesis of information from different parts of the world is particularly helpful.

My comments are mostly relatively minor, although there are a number of them as this review goes over a lot of ground. The only relatively major change I would like to see is much more attention paid to the relationship between spatial variability on droughts and forcings, as this could say something quite interesting about long-term changes in climatologies. As it stands section 5.1 is pretty short and is not integrated with section 4.3. You can probably lose some detail elsewhere if the word count is an issue.

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Abstract: Are historical-climatological databases really a source?

p. 1 line 30 - Link between drought and desertification could be made a little clearer. I'm not sure it is enough just to say that they are 'related' – a period of droughts does not necessarily imply desertification.

p. 1 line 33 - Give more detail on the 4 types of droughts.

P. 2 line 29 – why only reference the Africa consortium?

Section 2.1 – you can probably lose some of the quotes here which get a little repetitive. A little more detail on the types on information included would be better.

Section 2.3 – also too much focus on quotations and not enough information on what economic records would tell us that others wouldn't. I imagine these would be quite unique, so some specific detail would be helpful.

Section 2.7 – more detail is needed here. When were these songs collected? How do we know whether the dates are correct? Given that they are in the folk tradition, how do we know that the text has not changed over time?

Section 2.8 – again, it would be better to discuss the types of descriptions that are found in newspapers than just to give a long quotation. Newspapers are of course exceptionally diverse, but are there any commonalities in descriptions of drought impacts?

Section 2.9 – could you provide a little more information on the way that these 'winter counts' were recorded?

Section 2.10 – a little more detail would be helpful here. Where and when were these records collected? Why were they expressed in this way?

Section 3 (iii) – any examples from outside of the Czech Lands?

Page 20 line 36 – personal bugbear here. It is fine to say that the 'Southern Oscillation

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(SO) made only minor contributions to central European drought variability', but not the 'Southern Oscillation Index'. The index is just a set of numbers that represents the climatic forcing: the Southern Oscillation or ENSO. Suggest you replace SOI with SO throughout the text.

I'm a little unsure about 'positive values of the NAO had a strong effect on a December–August drought index' as well, but at least here you are associating an index with another index, rather than an index with a drought.

Page 24 line 12-25 – I'm not sure about this paragraph and I think you should remove it entirely. There's nothing particularly significant about using documents to look at droughts during the 'instrumental period'; it may be unusual within historical climatology but there's a huge literature on 20th century droughts from outside of historical climatology, and the instrumental record itself of course tells us very little about drought impacts. You'd either have to cite a far larger literature than you do here (Sen? Mukerjee? McAlpin? – and that is only India) or stick to what historical climatology can contribute, i.e. pre-instrumental.

Section 4.4 – I wonder if there is a way to restructure this section so that you don't end up with a subsection on 'ancient civilisations and colonial regimes'. I don't quite see the association between the Neo-Assyrian Empire, colonial Mexico and colonial Australia. I suggest removing this section altogether. The first and third paragraphs and the material on the Pueblo could go into section 4.4.1 and the material on Mexico into section 4.4.4.

Section 5.1 – I would like to see more of a discussion of the spatial extent of droughts in relation to the climatic forcings discussed in section 4.3. This is where documentary evidence could be particularly useful, for example to discuss how teleconnection patterns have changed over time. I know that Nash has done this a few times for southern Africa, for example.

Page 28 lines 32-34 – this analysis seems incomplete. What about the relationship

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between the Czech series and the Soviet Union, or Spain and western Europe? Why might some of these series be related but others not?

Section 5.2 – The Cook et al. megadrought reconstructions should be mentioned here in comparison with documentary data. That team have done at least three now (North America, Monsoon Asia and Europe). Given that they're calculated only using tree rings and statistical analysis, documentary data could provide a useful verification or comparison.

Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2018-118>, 2018.

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