

## ***Interactive comment on “Effects on the Czech Lands of the 1815 eruption of Mount Tambora: responses, impacts and comparison with the Lakagígar eruption of 1783” by R. Brázdil et al.***

### **Anonymous Referee #1**

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This paper compiles the effects of the Tambora and Lakagígar eruptions on the Czech Lands. The authors have a great trajectory in the use of documentary sources with climatic objectives, mainly in Czech Lands. For this reason, some of the information presented has been previously published in different works with different objectives. The paper is a little bit confusing and it is not publishable in its current form.

### Specific comments

The authors should reconsider the importance/necessity of the comparison with the Lakagígar eruption. Both eruptions are completely different (latitude, date, vicinity to Czech lands. . .) so the authors should clearly explain why it is interesting this comparison between them. Moreover, it is important that the authors explain clearly the

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different features of the two eruptions. In this point, I think that another option is focusing the paper only in the Tambora eruption.

The discussion section is not clearly linked with the result sections; this is more evident in sections 5.2 and 5.3

One of the main conclusions of the paper is that the Tambora eruption impacted less in the climate and more in the society than the Lakagígur one. But I miss a discussion about why this happened.

Introduction The unidentified eruption of 1809 is cited in the introduction. But nothing about this eruption is explained in the rest of the text. This eruption can affect the short-term analysis presented in the paper because “the mean temperature for each month was calculated using temperature data from five years prior to the eruption”, some discussion about that could be interesting.

About the impact of Lakagígur out of Europe could be interesting to cite Trigo et al (2010). Also could be useful in the discussion about the foggy events. Ordering the archival sources the S1 must be cited the first in the text then S2. . .

Methods No methods are described for the use of the documentary data (no instrumental).

Results Pag. 3 line 33-37 This paragraph would be better in the introduction with a comparison with the Lakagígur eruption. I do not like the structure. I think that some information given in “Post-volcanic weather and impacts on society” are “climatic responses”. I propose a year by year structure but with all the information (instrumental and documentary, climatic and social) for each year. Pag 4. Line 29. When are the haymaking and the grain harvest? Page 4 line 29-30 “if two days were fine, it then rained for two days.” This phrase it is not clear for me, is it referred to august?. Page 4 line 30 “The wine vintage was bad for the third year” I do not understand this phrase, what year is the third? 1815? Is there some climatic explanation for the caterpillars

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plague in May? Pag. 4 line 36-37. “Kreybich reports a flood on the Elbe for 10–14 August with extensive damage to agricultural crops” is it known the specific location? Zitenice? Pag 4. Line 41. The dry autumn of 1815 is also clear identified in figure 4. Pag 5 line 11 “Other Czech documentary sources report 1816 as particularly cold and wet, with bad harvests and rising prices of all products” this phrase need a cite. Pag 6 line 11 “shortages” of what? food? water? Pag. 6 25-29. I see better this paragraph in the introduction and developing a comparison with the Lakagígar eruption. Pag. 7 Many references to thunderstorms during the Lakagígar eruption but also during the Tambora. Can you discuss deeply how this phenomenon could be induced by the eruptions?.

Figures Figure 1: It would be interesting including a legend to explain which locations have instrumental information (temperature and precipitation) and/or documentary information. Figure 2, 3, 4: Does it make sense including the Chez Lands series? This series during this period is calculated from Prague and Brno. Both included in the figures. Figure 6: Redundant, all the information in this figure is also in figure 10. Technical comments Be coherent with format of the dates 7 April or 28th April.

Trigo R.M., Vaquero J.M., Stothers R.B. (2010). Witnessing the impact of the 1783-1784 Laki eruption in the Southern Hemisphere. *Climatic Change*, 99, 535-546.

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